TRAINING & EDUCATION

COURSE CATALOG

CHATFIELD GLOBAL LLC

Whether it's an operational HR solution, designing your succession planning strategy or driving organizational transformation, the Chatfield team brings practical, realistic solutions to find grow and keep your most valuable assets – your people.

As Your Full-Service HR Team, Chatfield Can …

Fill Your Open Jobs as Your Extended Recruiting Team

Chatfield's recruiting support offers flexibility and cost savings over traditional recruiting firms. We scale up and down to meet your needs. Our team is equipped with the skills, experience and industry knowledge to support your unique recruiting and staffing needs.

Implement and Manage Your HR System and Career Page/Applicant Tracking System (ATS)

Optimize your HR processes with technology. Chatfield can implement your preferred HR information system to manage employee data, transactional information, and performance management securely. Chatfield can establish your company-branded Career Page and Applicant Tracking System (ATS) to automate your recruiting process.

Customize Leadership, Management & Essential Skills Training for Your Team

Bring the best of TMA leadership, management and essential skills training to your site – or let us customize training for your specific organizational needs. Taught in engaging sessions at your work location, each training is customized to be highly relevant for your team.

Establish Individual Development Planning for your High-Potential Talent

Prepare your high-potential future leaders using Chatfield's focused, collaborative, and intentional individual development planning process.

Establish a Succession Planning Approach to Sustain Your Business for the Future

Build a plan to continually monitor and develop internal talent to assure that employees have the knowledge, skills, and abilities to succeed in future roles.

The Chatfield Difference

We work as an extension of your team, assembling the right consultants to work with you from strategy through execution to develop and execute customized, practical HR solutions.

Let's Connect! (847) 418-2428 | info@chatfield.global | www.chatfield.global

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This Catalog provides an overview of all training courses available through TMA. Class availability will vary. Visit www.tmaillinois.org/training to see our current class schedule and to register. If you have questions or would like to discuss customized training for your organization please contact TMA at education@tmaillinois.org.

COURSES – *INSTRUCTOR-LED APPRENTICESHIP PROGRAM*

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COURSES – *ONLINE TRAINING*

continued...

A MESSAGE FROM THE PRESIDENT

Since its founding in 1925, TMA has served as a valued source of employee training and development for our members. Over the years, the scope of TMA's educational offering has expanded to include management development seminars and safety training as well as a wide range of online skills training related to manufacturing.

In today's economy, customers are constantly pushing for improved quality and faster cycle times. To operate effectively in this environment, TMA member companies need to continuously improve the selection, on-boarding, and training of their employees. They also need to provide their managers with the developmental opportunities required to excel in a manufacturing environment characterized by high-tech automation, increased productivity, and a shrinking workforce.

To address such needs, TMA is engaged in a continuous improvement program to strengthen its training and educational capabilities.

This catalog, which captures the full range of educational workshops and leadership development opportunities available through TMA, is a key milestone in our efforts to enhance our ability to meet the education needs of our members.

The caliber of TMA's training and education programs is such that non-members are often interested in them. Offering TMA courses to non-members allows us to build awareness of the many benefits of TMA membership and is a natural first step towards them joining the TMA.

Our training catalog is online and available 24/7. It is downloadable for printing, and has live links to help readers search and navigate. This format also allows us to keep the catalog continuously updated with new classes and opportunities.

We hope you find it useful. If you have a specific training need, please give us a call or drop us an email. Addressing your training and development needs is one of our primary goals. We look forward to your input and suggestions.

Regards,

Patrick Osborne
President
Technology & Manufacturing Association

RELATED THEORY

APPRENTICESHIP PROGRAM
INSTRUCTOR - LED TRAINING

RELATED THEORY
APPRENTICESHIP PROGRAM

TMA ENTRANCE EXAM

For apprentice candidates

Time Commitment: 3 hours

All first-year students must complete TMA's Entrance Exam prior to registration. Satisfactory scores must be met on the three assessments, Applied Math, Print Reading and Spatial Relations, and Machine Tool Technology. A score of 70% or higher is required per exam. All first-year students must also supply evidence of a high school diploma or GED before their registration will be accepted. A photocopy of the original is satisfactory.

First Year

INTRODUCTION TO CAD

For entry level employees and apprentices.

Instructor-Led Course • Time Commitment: 18 hours over 16 weekly sessions

This course will focus on learning the CAD User Interface, Sketching, and introduction to Modeling. In addition to creating Sketches, they will learn Smart Dimensioning, Trimming, Filleting, and Extruding. The course will also cover File Management The software used in this class will be Solidworks.

INDUSTRIAL PRINT READING

For entry level employees & apprentices.

Instructor-Led Course • Time Commitment: 33 hours over 11 weekly sessions

An entry level course in print reading for the beginning apprentice. Content includes orthographic theory, line convention, pictorial representation, types of drawings, sections, auxiliaries, line convention, and an introduction to GD&T.

MACHINE SHOP THEORY

For junior machinists, entry level employees, apprentices.

Instructor-Led Course • Time Commitment: 33 hours over 11 weekly sessions

This is an entry-level course for the first-year apprentice in the study, use, and applications of machining equipment relative to precision machining. Content includes the study of basic safety, materials, process planning, process control, layout, measurement, carbide tooling, heat treatment, metal composition and classification, preventative maintenance, and math applications related to machining and metal cutting mechanics. This course features hands-on training on manual machining equipment and an introdction to CNC.

INDUSTRIAL MATH II

For entry level employees and apprentices.

Instructor-Led Course • Time Commitment: 42 hours over 14 weekly sessions

The primary objective of this course is to present mathematical concepts and practical application of concepts that are generally required by skilled employees in the machine trades. Course content includes application of mathematical operations of fractions, decimals, whole numbers and mixed numbers. Ratio and proportion, linear measurement, and fundamentals of algebra are also covered in relation to their use in industry. Numerous problem-solving sessions are formatted to industry settings and oriented toward trigonometric readiness.

INDUSTRIAL MATH III

For entry level employees and apprentices.

Instructor-Led Course • Time Commitment: 42 hours over 14 weekly sessions

This course is a continuation of Course 101: Industrial Math II. The primary objective of this course is to present mathematical concepts and practical application of concepts that are generally required by skilled employees in the machine trades. Content includes an emphasis on right angle trigonometry, solid geometry, applied math for inspection, and practical problem solving.

Second Year

BASIC TOOL & DIE MAKING

For machinists, entry level employees and apprentices.

Instructor-Led Course • Time Commitment: 168 hours over 56 weekly sessions

This second year course is for the apprentice tool and die maker. It continues the study of blueprint reading and shop math, as well as process planning, process control, heat treatment, and identification of steels. Students will learn tool and die making basics including shop safety, types of dies, principles of blanking/piercing dies, bending, screw and dowel holes, die life, die-block construction, and stock material utilization and strip layouts. Additional content includes die components (punches, pilots, strippers and stock guides, shedders and knockouts, nest gages, pushers, die stops and die sets) and basic die making applications.

BASIC CNC PROGRAMMING

For machinists, entry level employees and apprentices.

Instructor-Led Course • Time Commitment: 168 hours over 56 weekly sessions

This second year course is for the apprentice CNC programmer. It continues the study of blueprint reading and shop math, as well as process planning, statistical process control, heat treatment, and metallurgy. Students will learn CNC machining basics including shop safety, lathe/mill setup and operation, workholding, tool assembly, and how to set work and tool offsets. Additional content includes lathe and mill operations, surface grinding operations, machinability of materials, an introduction to continuous improvement and 5S, and more.

BASIC MOLD MAKING

For machinists, entry level employees and apprentices.

Instructor-Led Course • Time Commitment: 168 hours over 56 weekly sessions

This second year course is for the apprentice mold maker. It continues the study of blueprint reading and shop math, as well as the basics of mold making, project planning, types of molds, mold components, and basic design. Students will learn about mold making processes including heat treating, polishing, welding, hole popping, laser engraving and programming, heating and cooling, gates and runners, and thermoforming. Additional content includes methods of mold machining.

Third Year

ADVANCED TOOL & DIE MAKING

For machinists, apprentices, entry level employees, CNC operators, engineers, die makers, die repair personnel

Instructor-Led Course • Time Commitment: 168 hours over 56 sessions/meets for 2 consecutive semesters

This class is for students entering the third year of their tool and die apprenticeship training. It is a continuation of Basic Tool & Die Making, and takes a more comprehensive look at different types of dies and how they are constructed. More complex compound and progressive dies are thoroughly examined, focusing on their components, use, and construction.

ADVANCED CNC PROGRAMMING

For die makers, mold makers, machinists, apprentices, engineers, CNC operators

Instructor-Led Course • Time Commitment: 168 hours over 56 sessions/ meets for 2 consecutive semesters

This class is for students entering the third year of their CNC programming apprenticeship training. It is a continuation of Basic CNC Programming, and covers more complex methods of CNC programming and machining.

ADVANCED MOLD MAKING

For mold makers, machinists, apprentices, engineers, CNC operators

Instructor-Led Course • Time Commitment: 168 hours over 56 sessions / meets for 2 consecutive semesters

This class is for students entering the third year of their mold making apprenticeship training. It is a continuation of Basic Mold Making, and will examine more complex concepts related to mold design and construction.

DESIGN SCHOOL

INSTRUCTOR - LED TRAINING

DESIGN SCHOOL

TMA DESIGN SCHOOL

For die makers, mold makers, and engineers

Continue your training with die design or mold design classes. Graduates of TMA's Related Theory Apprentice Training Program will be eligible to enroll. Students with equivalent technical experience may also enroll.

INTRODUCTION TO CAD

Instructor-Led Course • Time Commitment: 36 hours over 12 sessions

This course will focus on learning how to use drawings to model 3D parts. In addition to creating assembly views and Bill of Materials (BOM) they will learn how to create, modify, and manipulate part geometry. The course will also cover assemblies and drawings to bring multiple parts together into one assembly. The software used in this class will be Solidworks.

BASIC DIE DESIGN

Instructor-Led Course • Time Commitment: 84 hours over 28 weekly sessions

Basic Die Design is devoted to the person who has a basic knowledge of drafting, shop mathematics and shop operations. Basic Die Design is the first of two classes using several recognized works. This course lays the groundwork for a prospective die designer. Students will get exposure to commonly used die protection devices and sensors as part of this class. We will build upon the basics in the intermediate class. The student will be given opportunities to model sheet metal parts and die assemblies in the lab. Since we are using Solidworks platform, each student should have a working knowledge of the software by completing a course in the essentials and sheet metal. The instructor will provide reference models for students to use as they build their own body of work. Reference texts will be provided with the classroom work and students will be given opportunities to build their own library of knowledge. Modern software tools like MS-Excel will be used to develop the students' understanding of calculations for common die components as well in estimating and quoting. We will use the building blocks of die making and design and follow that road to the present day.

BASIC MOLD DESIGN

Instructor-Led Course • Time Commitment: 84 hours over 28 weekly sessions

Basic Die Design is devoted to the person who has a This class will cover the basics of multiple types of molds, including standard & stepped parting lines, stripper plate molds, quick change molds, and hot runner molds. Students will learn the basics of mold construction, covering the use and placement of; bolts, dowels, leader pins, return pins, support pillars, stop buttons, rail design, clamp slots, and parting-line locks. Explanations on how the mold interfaces with the molding press and calculations for clamp force requirements. Also, the Basics of Solidworks as it applies to mold design will be covered. The class will also cover content such as: how to use shrink to your advantage, factors which effect shrink and warp, common gate design errors, runner sizing guidelines, runner pullers, knock-out patterns, return pins and springs, typical slide and lifter construction, mechanical vs hydraulic slides and lifters, venting of piece parts and runners, how venting effects the molded part, and general rules for waterline placement.

ADVANCED DIE DESIGN

Coming Soon

ADVANCED MOLD DESIGN

Coming Soon

HANDS-ON TRAINING

INSTRUCTOR - LED TRAINING

HANDS-ON TRAINING

INTRODUCTORY CNC TRAINING PROGRAM (Level 1)*

For apprentices, inspectors, toolmakers, machinists, CNC operators, engineers, production supervisors, CNC programmers

Instructor-Led Course • Time Commitment: 96 hours over 32 sessions

This 16-week course combines theory and hands-on training in set-up, operations, and programming of a CNC mill and CNC lathe. Emphasis is placed upon developing safe work habits to operate CNC machines. After successful completion of this course, students will be able to demonstrate skills in programming, set-up, and operation, and manufacture small parts using a CNC lathe and mill. Course content includes the coordinate system, program planning and structure, spindle speeds and feed rates, linear and circular interpolation, canned cycles, tool nose and cutter compensation, and threading and subprograms. This course features a specialized curriculum with new part drawings. Students will register with NIMS and sit for two NIMS CNC credentialing exams during the course of this training program.

3D MILLING (Level 3)

For apprentices, inspectors, toolmakers, machinists, CNC operators, engineers, production supervisors, CNC programmers

Instructor-Led Course • Time Commitment: 24 hours over 8 sessions

This 12-week course will focuson transitioning from G code to CAM programming. Students will use Mastercam to program and machine six new projects varying in degrees of complexity. This class will highlight the comprehensive suite of Mastercam 3D toolpaths with exciting new dynamic motion stratgies that can increase tool life, decrease cycle times, and speed up the programming process. Course content includes Renishaw probing and calibration of the probe, setting work offsets and tool lengths, Mastercam 2D and 3D toolpaths, multiple roughing strategies, including dynamic motion cuts and 3D finishing toolpaths, DNC communication to and from machine, and more. Successful completion of the introductory CNC course and Introduction to Mastercam, or instructor consent required before enrolling.

ADVANCED G-CODE PROGRAMMING (Level 2)*

For apprentices, inspectors, toolmakers, machinists, CNC operators, engineers, production supervisors, CNC programmers

Instructor-Led Course • Time Commitment: 96 hours over 32 sessions

This 16-week course will build upon topics covered in the introductory class. Using both a CNC mill and CNC lathe, students will learn advanced G code techniques in this project-based class. Students will select proper tooling, make fixtures, write, run and verify G code programs, and inspect to print specifications. Students will also work through a series of operational problems created by the instructor. Course content includes thread forming, coordinate rotation, multiple subprograms, type II roughing cycles, helical milling, fixture creation, and more. The course features a specialized curriculum with new part drawings. Students will be prepared to acquire NIMS CNC credentials after completing the course. Successful completion of the introductory CNC course or instructor consent required before enrolling.

INTRO TO C&Y AXIS + SUB SPINDLE*

For apprentices, inspectors, toolmakers, machinists, CNC operators, engineers, production supervisors, CNC programmers

Instructor-Led Course – Time Commitment 24 hours over 8 sessions

This course will introduce the concepts and capabilities of multi-axis CNC turning centers. Emphasis is placed on Y-axis program application, C-axis indexing, and live tooling. Upon completion, students will be able to write a basic turning center G code program which will include B, C, X, Y, and Z axis of motion.

HANDS-ON TRAINING

INTRODUCTORY MULTI-AXIS MACHINING

For apprentices, inspectors, toolmakers, machinists, CNC operators, engineers, production supervisors, CNC programmers

Instructor-Led Course • Time Commitment 48 hours over 16 sessions

This course will provide students an opportunity to learn basic programming and set-up along with the basics of operating a 5-axis vertical machining center. The class will include both theory and hands-on lab time. Course content includes but not limited to 5-axis fixturing and workholding, understanding G&M Code, 5-axis program planning and probing on multi-axis.

INTRO TO SWISS CNC*

For apprentices, inspectors, toolmakers, machinists, Swiss CNC operators, engineers, production supervisors, Swiss CNC programmers

Instructor-Led Course • Time Commitment 36 hours over 12 sessions

This class will focus on the principles of Swiss type machining, processing of parts for manufacturing on swiss type machines, programming overview, machine setup, and machine operation.

INTERMEDIATE SWISS CNC*

For apprentices, inspectors, toolmakers, machinists, Swiss CNC operators, engineers, production supervisors, Swiss CNC programmers

Instructor-Led Course • Time Commitment 48 hours over 16 sessions

This course will focus on more advanced concepts related to Swiss-type machining in this hands-on, project-based class. Successful completion of the TMA Introduction to Swiss CNC class or instructor consent is required before registering. Class content includes but is not limited to complete part processing, proving out programs, safe initial run of parts, maintaining a productive setup, functions of collets and bushings, and confirming stability of process.

CNC BASIC MAINTENANCE CERTIFICATION

For apprentices, inspectors, toolmakers, machinists, CNC operators, engineers, production supervisors, CNC programmers

Instructor-Led Course • Time Commitment 72 hours over 9 sessions

This course includes three core concepts: CNC basic maintenance and troubleshooting, introduction to G-code programming, and CNC PLC troubleshooting. This course is designed to teach the elementary fundamentals of a complete CNC System, the basic fundamentals of G-code programming and CNC PLC concepts through lecture and hands-on practice. The program also includes simple concepts of 2-axis and 3-axis programming. At the end of the program, students will be proficient in basic CNC maintenance and service functions, as well as have a fundamental understanding of the CNC PLC and should be able to troubleshoot any machine-side PLC problem. The student will also be able to write a simple G-code program from scratch.

**Technology and Manufacturing Association is approved to operate by the Private Business and Vocational Schools Division of the Illinois Board of Higher Education.*

Technology and Manufacturing Association is not accredited by a US Department of Education (US DOE) recognized accrediting body. NIMS is not recognized by the US DOE.

TECHNICAL TRAINING SEMINARS

INSTRUCTOR - LED TRAINING

TECHNICAL TRAINING SEMINARS

BASIC BLUEPRINT READING

For all production, inspection, sales, purchasing, drafting, engineering, and quality personnel, as well as others who are responsible for interpreting or manufacturing from engineering drawings

Instructor-Led Course • Time Commitment: 16 hours over 2 sessions

This introductory course explains the importance of engineering drawings in manufacturing and thoroughly describes how drawings are portrayed and information communicated. Included are: basic elements of blueprints; symbols and meaning; principles of shop sketching; shop math review, and use of measuring tools.

*Note: Also available with Spanish Instruction.**

INTRODUCTION TO MASTERCAM

For apprentices, inspectors, toolmakers, machinists, CNC operators, engineers, production supervisors, CNC programmers

Instructor-Led Course (TMA) • Time Commitment: 48 hours over 16 sessions

This introductory course will cover all aspects of operation, system orientation, operator interface, configuration, and 2D geometry construction. Students will use Mastercam software to create part geometry, and verify and assign machining toolpaths to geometry. Course content includes geometry creation, mill and lathe toolpath generation, contour, pocket, and drill, face, rough, finish, grooving, and drilling, and application, tool, and material libraries.

INTRODUCTION TO CMM

For inspection, engineering, and production personnel

Instructor-Led Course • Time Commitment: 24 hours over 3 sessions

This course will give students a basic understanding of CMM software, including introduction to the interface, sensor configuration and calibration, feature measurement and constructions, and alignment. Course content also includes tolerances and reporting, and customized/advanced skills (programming, CAD model, etc.).

COMPREHENSIVE GD&T

For inspectors, toolmakers, machinists, CNC operators, engineers, production personnel, estimators

Instructor-Led Course • Time Commitment: 21 hours over 3 sessions

This is a comprehensive course on Geometric Dimensioning & Tolerancing (GD&T) taking students from the basic introduction and understanding of the GD&T symbols to conducting inspection procedures involving all types of geometric tolerancing. Data theory, positional tolerancing, bonus tolerancing and the impact of modifiers are also explored. Other content includes composite GD&T symbols and the impact of modifiers on data. Practical applications and discussion are included in this course.

TECHNICAL TRAINING SEMINARS

BASIC PUNCH PRESS SETUP AND OPERATION

For apprentices, inspectors, toolmakers, machinists, CNC operators, engineers, production supervisors, punch press operators

Instructor-Led Course • Time Commitment: 16 hours over 4 sessions

This hands-on course will instruct participants in punch press setup and operation addressing areas such as material defects, loading a coil, straightening, adjusting the feed and basic die and press timing. Participants will learn about clamping methods; die alignment in the press, basic press maintenance conducted by setup personnel, establishing slug clearances and slug drops and basic part ejection.

Note: This course is offered onsite with a TMA instructor. Call for more information.

GENERAL MOLD KNOWLEDGE

For anyone not building molds (i.e. Engineers, Sales, front office personnel, etc.)

Instructor-Led Course • Time Commitment 16 hours over multiple sessions

This course was designed for anyone NOT building molds who would benefit from some high-level knowledge. It will evaluate the different types of molds and types of molding machines. The class will encompass a review of terminology, basic mold making, side actions, insert molding, surface textures and finishes and more.

TECHNICAL TRAINING SEMINARS

GENERAL DIE KNOWLEDGE

For anyone not building dies (i.e. engineers, sales, front office personnel, etc.)

Instructor-Led Course • Time Commitment 16 hours over multiple sessions

This course was designed for anyone NOT building dies who would benefit from some high-level knowledge. It will evaluate the different types of dies, designs, dies sets and components. The class will encompass a review of terminology, nonferrous and nonmetallic die materials, bending of metals, die engineering, metal movement in forming, and more.

INTERNAL AUDITING

For inspectors, and quality personnel, as well as others who are responsible for the company's internal auditing.

Instructor-Led Course • Time Commitment: 16 hours over 2 sessions

The class is taught ***to the ISO 9001:2015 Quality Management System Standards***

DAY 1: Process-oriented Auditing
This workshop focuses on establishing and integrating an effective internal auditing process and initiative, with a significant emphasis on understanding and utilizing practical auditing techniques. As part of this seminar, the new ISO 9001:2015 Standard will be reviewed and evaluated, in order to fully understand the impact of the requirements and how they will affect the internal audit process. It addresses interpreting the requirements and ensuring system compliance, as well as ensuring maximum value added to your organization.

Ensuring an Effective Audit Process
Includes preparation, organizing the team, planning process, opening meetings, auditing techniques: observing, investigating, evaluating and verifying, reporting results, closing meetings, audit reports, and verifying the effectiveness of the system.

DAY 2: Practical Audit Experience
Includes team formation and assignments, planning, reviewing the documentation, conducting the audit, obtaining team consensus, evaluation of findings, reporting non-conformances, and follow-up activities.

SAFETY

INSTRUCTOR - LED TRAINING

FORKLIFT SAFETY – TRAIN THE TRAINER

For apprentices, inspectors, toolmakers, machinists, CNC operators, engineers, production supervisors, CNC programmers, lift truck drivers

Instructor-Led Course • Time Commitment: 3 hours

Students enrolled in this course will learn about the basic components of a lift truck, types of lift trucks and basic OSHA regulations regarding the operation, safety inspection and training of certified lift truck drivers and operators. Participants will learn how to present content for forklift training, conduct knowledge assessments as well performance assessments. Students will be supplied materials to conduct training at their plants.

This seminar teaches employees the essentials for developing documentation to fulfill the AS 9100 requirements. The course will include instruction on the AS 9100 standard, project planning, writing a quality manual, procedures and suggestions for successful Quality Management System implementation.

OSHA GENERAL INDUSTRY 10-HOUR TRAINING

For entry-level personnel, engineers, machinists, quality personnel, production personnel, sales engineers, tool and die makers, apprentices, maintenance personnel, and CNC operators

Instructor-Led Course • Time Commitment: 10 hours over 2 sessions

The General Industry 10-Hour course is designed to provide students with a good general base of safety knowledge that they can bring back to their facility. There are nine separate classes taught during the 10-Hour program, including introduction to OSHA, walking and working surfaces, electrical safety, hazard communication, exit routes, emergency action plan and fire prevention, personal protective equipment (PPE), machine guarding, material handling, and lockout-tagout. Students who successfully complete this training will receive OSHA certificates.

TMA LEADERSHIP INSTITUTE

INSTRUCTOR - LED TRAINING

TMA LEADERSHIP INSTITUTE

TMA MANUFACTURING LEADERSHIP PROGRAM (MLP)

For high-potential employee with 3-5 years experience who are ready to be challenged for more responsibilities

Instructor-Led Course • Time Commitment: 70 hours over 10 monthly sessions

Participants will be exposed to key concepts in all major business functions of a manufacturing company. A challenging curriculum with application to the manufacturing world provides a unique learning experience. Participants will be able to put new ideas into action after leaving each monthly session,concluding with a capstone project.

The MLP has an individual focus within a group-learning environment. Participants will be able to network and build relationships with others in their cohort.

MLP sharpens participants' skills with study of each of the functional areas of a manufacturing company in order to help them make confident, well-informed decisions as a manager. The year-long program will challenge participants and develop teamwork and communication skills to stand up to the rigors of executive leadership.

TRAIN THE MENTOR

For company mentors of apprentices, company trainers, and department leads.

Instructor-Led Course • Time Commitment: 5 hours over 2 sessions

Quality mentors positively impact the training outcomes of new employees and, therefore, help an organization achieve progress. Individuals often are selected to serve as mentors because they are among the most experienced workers on the floor. Additionally, they have extensive knowledge about the ins and outs of a job. Imparting that experience and knowledge onto others is a whole other skill requiring patience, empathy, time, and more. This interactive online class is designed to offer mentors the tools and resources they need to effectively and sustainably train skilled workers, including apprentices.

TOOLS FOR FRONT-LINE SUPERVISORS

For Individuals new to or currently in a supervisory role.

Instructor-Led Course • Time Commitment: 4 weekly 4-hour sessions

This series of workshops is designed for front-line managers/supervisors who are seeking the skills necessary to successfully lead, manage, and promote teamwork within their departments.

The relationship an employee has at work, specifically, with their immediate supervisor, is the most significant relationship they have, including family. Every day, your employees make a choice to give you their time. And not just in exchange for a paycheck. When they go home, and someone asks "So, how was your day?" their answer is shaped by the experiences they have at work and with the people they work with… especially their immediate supervisor.

Tools for Frontline Supervisors is a hands-on, forward-thinking, forward-doing learning experience that equips people-leaders with the capability and confidence to be more effective in leading themselves, leading others and leading the business.

Over the course of 4 weekly 4-hour sessions focusing on communication, collaboration, delegation, trust, conflict, time management, coaching, feedback, decision-making, risk-taking and problem-solving, participants learn and apply skills to improve their overall effectiveness.

Using real world experiences, participants are provided job aids to immediately apply what they've learned the moment they return to the workplace. In addition, participants have action items to work on between sessions and then discuss their experiences at the following session.

This course can also be brought to your site for personalized training for your team – inquire if interested!

EMERGING LEADERS

For individual contributors poised to take on additional responsibilities, specifically taking on a new supervisory role.

Instructor-Led Course • Time Commitment: 4 weekly 4-hour sessions

Do you find you are always looking outside your company to recruit new talent for supervisory roles? In today's hyper-competitive talent environment, companies that need to look outside their company for the next generation of people-leaders fall behind their competition.

And your competition for talent is not just companies in your categories, it is every employer in the community where you operate.

The **Emerging Leaders Learning Journey** helps your next generation of leaders prepare for their next career step within your business. It helps the individuals in your leadership pipeline build the confidence and capability for one of the most critical career shifts… becoming a people-leader.

Over the course of four weekly 4-hour sessions, participants focus on what it means to be a leader, communicating more effectively, collaboration, building trust, managing time more effectively and efficiently and managing conflict.

Participants use real world experiences to understand, learn and apply skills to improve their overall effectiveness. They are provided job aids to immediately apply what they have learned the moment they return to the workplace. In addition, they have action items to work on between sessions and then discuss their experiences at the following session.

This course can also be brought to your site for personalized training for your team – inquire if interested!

LEADING YOUR ORGANIZATION THROUGH A CULTURE OF COACHING

For people-leaders, usually manager and above, with teams reporting to them.

Instructor-Led Course • Time Commitment: 2 consecutive 8-hour sessions

"Successful people only have two problems dealing with negative feedback. However, they are big Problems … They don't want to hear it from us, and we don't want to give it to them." By Marshall Goldsmith, from **What Got You Here, Won't Get You There**.

Traditional feedback focuses on the past, not the future. People can't change the past, so they don't even try to Improve. Self-awareness is not totally self-created. The opinions of others contribute to how we view ourselves. That's why feedback is so essential. How would we know what to fix unless someone tells us? Used correctly, the gift of feedback is so simple and so effective.

Leading Your Organization Through a Culture of Coaching Is an immersive, experiential learning experience. By interacting with peers with similar challenges, participants learn they are not alone when it comes to coaching and feedback. This provides them with the confidence needed to have powerful conversations.

Over the course of two consecutive 8-hour sessions, participants are immersed in topics from emotional intelligence, resonant leadership, mindset, listening, powerful questions, creating coaching agreements and how to enable a culture of coaching in their company.

This course can also be brought to your site for personalized training for your team – inquire if interested!

MANAGING WITHIN THE LAW

For frontline supervisors, managers, anyone who needs a current understanding of the legal obligations of managers in today's workplace. For any people-leaders in your business.

Instructor-Led Course • Time Commitment: 6-hour learning experience

Many companies believe that employment laws like FMLA and regulations from governing bodies like the EEOC are the responsibility of HR. While that is true, it's only a half-truth. By the time an issue linked to any aspect of employment law makes its way to HR, it's often too late.

While everyone in a company should behave within the law, the spotlight shines even brighter on those with direct people responsibility.

Managing Within the Law equips your people-leaders with the awareness and understanding that they are responsible for creating, maintaining and managing a diverse, equitable, inclusive, harassment-free, discrimination-free work environment. Not because the law requires it, because it's what every employee is entitled to at work.

This 6-hour learning experience is anything but a trudge through employment law. It is an interactive, fast-paced program that equips leaders with the tools they need to create a safe harbor at work. The focus is to learn it, live it, and return to be able to teach it with impact back at work.

This course can also be brought to your site for personalized training for your team – inquire if interested!

LEAN OVERVIEW

For managers, supervisors, and team leaders who are responsible for leading continuous improvement (CI) projects.

Instructor-Led Course • Time Commitment: 16-hour (two full day) learning experience

This two-day program is designed to familiarize your team with core Lean principles and techniques, and to help them understand how culture and tools work together to support your company's continuous improvement (CI) effort.

Shape the thinking of your team and be sure they take the right approach for your company's unique situation. This workshop combines classroom discussion, hand-on exercises, and an overview of the tools and techniques for implementing Lean successfully in your company.

The program will challenge participants and shape their thinking to enable them to be change leaders. Build a solid grounding in Lean thinking and greater confidence in leading positive change at your company.

Help your team define their roadmap for change and understand the new way of working, properly setting the stage for improvement.

Topics include:

- Lean Overview
- Creating a Lean Culture
- Problem-Solving Methods
- Value-Stream Mapping

After attending this workshop, your people will understand what is needed to implement Lean practices in your organization, and how to overcome many common obstacles faced in the Lean transformation.

This course can also be brought to your site for personalized training for your team – inquire if interested!

TMA LEADERSHIP INSTITUTE

THE ADMINISTRATIVE LEADER

For anyone working on the office team in customer service, reception, accounting, HR and office management.

Instructor-Led Course • Time Commitment: 8-hour (one full day) learning experience

Today's administrative professionals juggle multiple responsibilities and interact with a steady stream of customers, vendors, and fellow employees. The office team has never been more challenged … more stretched … than they are today. Adapting to new technology, increased customer expectations, and the wide cast of characters they interact with daily puts great demand on their technical skills and more importantly, their interpersonal skills.

In many organizations the senior administrative professional is at the core of the business – keeping day-to-day activities functioning, supporting the efforts of multiple managers and functional areas, and often taking on responsibilities for higher-level managers who are unavailable.

Consider sending the office team to this workshop to focus on strengthening their self-awareness, their communications skills, and their leadership muscle in this interactive 1-day leadership experience.

BEHAVIORAL INTERVIEWING

For hiring managers, recruiters, HR professionals, and anyone who is involved in recruiting or hiring in your organization.

Instructor-Led Course • Time Commitment: 6-hour learning experience

Learn why conducting a behavioral interview is the BEST interview process for selecting new hires for your organization. Gain an understand of the four steps to conducting a successful behavioral interview, discover the best techniques to select employees, and review legal and illegal interview questions. Participants will have the personal experience of preparing for and conducting a behavioral interview through hands-on practice in class. Participants will also learn about the benefits of hiring top performing employees and the cost of hiring mistakes.

This course can also be brought to your site for personalized training for your team – inquire if interested!

MANAGING PERFORMANCE

For supervisors, shift leaders, managers, leaders, HR professionals, and anyone who is involved in providing performance feedback to employees (formal and informal) in your organization.

Instructor-Led Course • Time Commitment: 6-hour learning experience

Explore the supervisor/manager role in managing performance. Understand the difference of managing performance and managing improvement, and when to use each approach. Practice having the conversations around performance that are sometimes challenging and learn techniques to engage employees in effective and meaningful dialog about performance – both at formal review time, and throughout the year. Managing performance can and should be a daily part of a leader's role at your company – this course will help your managers be best prepared to be strong people leaders and drive strong performance within their team.

This course can also be brought to your site for personalized training for your team – inquire if interested!

CREATING CULTURE CHANGE IN YOUR ORGANIZATION

For company owners, organizational leaders, HR professionals, and others involved in driving strategic change at your organization will benefit from attending.

Instructor-Led Course • Time Commitment: 2 consecutive 8-hour sessions

Some companies have a common culture from front office to the dock door. In other organizations, the shop floor and front office have distinctly unique cultures. Yet in all companies, understanding your culture, and how your company culture impacts business every day is critical to growth and longevity as business demands evolve. For organizations seeking to become more adaptive and innovative, culture change is often the most challenging part of the transformation.

Culture change is driven by the feelings and habits of people and their shared perception of "how things are done around here." Authority can demand compliance, but can't dictate optimism, trust, conviction, or creativity – but leaders can inspire people to change.

This workshop will explore practical approaches to driving culture change, the leader's role in change, and how to make change stick. Learn how company cultures are formed and how cultures can evolve. Explore how to raise awareness about what needs to change, how to set direction for the change, and engage team members (who are integral to the execution of the change and its success).

This course can also be brought to your site for personalized training for your team – inquire if interested!

COMPENSATION & TOTAL REWARDS CHECK-UP

For company owners, HR professionals, and others involved in establishing and executing your company's compensation/total rewards strategy.

Instructor-Led Course • Time Commitment: 2 hours

Does Your Total Rewards Program Attract, Engage and Retain Employees?

Today's organizations are challenged to recruit and retain top performers and key talent. Having the right kind of compensation and total rewards program in place is essential. The **Compensation & Total Rewards Check-Up** will provide an overview of the key components to consider in establishing a total rewards program that will enhance business results, engage key talent, and keep pace with changing regulations. Opportunity for open dialog with a compensation and total rewards expert from Chatfield Global LLC will provide perspective to evaluate your current state and provides a forum to ask questions about alternative ways to think about compensation, pay and rewards and improve your changes of attracting and retaining top talent in a competitive job market.

MANUFACTURING PROCESSES & MATERIALS

MACHINING
ONLINE TRAINING

MANUFACTURING PROCESSES & MATERIALS *(Machining)*

PRINCIPLES OF CNC

For engineers, machinists, quality personnel, production personnel, sales engineers, tool and die makers, apprentices, maintenance personnel, CNC operators

Online Delivery • Time Commitment: 4 hours

Students engaged in this course learn about the Cartesian Coordinate System, reference point and types of reference points in CNC, tool offset, wear offset, work offset, methods used for programming, structure of a program and function of a program. Students will also learn CNC roles, history, responsibilities and basic G and M codes including preparatory functions.

FANUC CNC CONTROL

For CNC programmers, CNC setup personnel, mold makers, die makers, machinists, CNC operators, engineers, supervisors

Online Delivery • Time Commitment: 4 hours

Content offered through this course include the purpose and functions of a FANUC control, the display screen, programming controls, operations such as program selection, rotating or indexing an axis, power ON and OFF, input and edit a tool offset, resetting the part counter and machine stoppage. Other material includes using soft keys, information on screens and windows, machine operations controls and basic troubleshooting.

PRINCIPLES OF TURNING

For production personnel, apprentices, inspectors, quality engineers, tool and die makers, CNC machinists, mold makers and machinists

Online Delivery • Time Commitment: 4 hours

This course engages the student by describing the function and purpose of a lathe, products and major developments in turning. Students will learn about the axes of movement, major components and the functions of these components. Other areas of instruction include the three variables that affect cutting, operations performed on CNC lathes and the major classifications of lathes.

PRINCIPLES OF GRINDING

For tool makers, machinists, entry level personnel, maintenance technicians

Online Delivery • Time Commitment: 3 hours

Course instruction includes an introduction to grinding (function and purpose), major components of a surface grinder, function and purpose of the components and component movement related to axis of travel. Other course content includes grinder classification, types of grinding machines and variables associated with each type of grinder.

MANUFACTURING PROCESSES & MATERIALS *(Machining)*

PRINCIPLES OF MACHINING CENTERS

For tool makers, machinists, entry level personnel, maintenance technicians, CNC operators, CNC programmers

Online Delivery • Time Commitment: 4 hours

Students will learn about function and purpose of a machining center, types of machining centers and advantages (horizontal and vertical), three basic movements and how decisions are made regarding a horizontal or vertical machining center. Other instruction includes how parts are cut, variables that affect metal cutting and all possible axes on a machining center.

PRINCIPLES OF MATERIALS – FERROUS METALS

For tool makers, machinists, entry level personnel, maintenance technicians, CNC operators, CNC programmers

Online Delivery • Time Commitment: 6 hours

Course instruction includes how metal knowledge benefits the company, defining ferrous metal, function, purpose and properties of elements in metals, steelmaking process and how metal properties affect material selection. Other coursework includes classes of ferrous metals, effects of alloying elements, identification of steels and ferrous metal nomenclature.

PRINCIPLES OF MATERIALS – NON-FERROUS METALS

For production personnel, apprentices, inspectors, quality engineers, tool and die makers, CNC machinists, mold makers and machinists

Online Delivery • Time Commitment: 8 hours

Students will learn the difference between ferrous and non-ferrous materials, classes of aluminum and copper, elements of aluminum and aluminum alloys, material identification and the most important properties of non-ferrous metals. Other course instruction includes material selection, casting and wrought formation techniques, chemical makeup and properties of copper and common alloying elements and their effect on non-ferrous metals.

INTRODUCTION TO STEEL HEAT TREATING

For design engineers, manufacturing engineers, quality engineers, sourcing specialists

Online Delivery • Time Commitment: 5 hours

This course is a good follow-up to basic metallurgy. This course teaches about common heat treating processes and how they are used to manipulate the microstructure of steels to obtain specific mechanical properties. Students will learn about the metallurgy of steel, the effects of heat treating temperature and cooling rate on microstructure and properties, and the effects of the interaction between heat treating process parameters and steel composition on steel microstructure and strength. The knowledge gained will help students address metallurgy decisions and problems related to steel alloy selection, process development, and supplier selection.

The course is divided into eight modules with a quiz after each module, including:

- Introduction
- Metallurgy of Steel
- Steel Phase Diagram
- Phase Transformations in Steel
- Annealing and Normalizing
- Through Hardening
- Case Hardening
- Surface Hardening

MANUFACTURING PROCESSES & MATERIALS *(Machining)*

PRINCIPLES OF TOOLING

For entry level employees, apprentices, inspectors, toolmakers, machinists, CNC operators, engineers, production personnel

Online Delivery • Time Commitment: 3 hours

Students will learn tooling basics such as cutting principles and cutting tools, types of cutting tools, single and multiple point cutting tools, uses of cutting tool, cutting tool relationships to the machining processes and the role of the machine operator. Other information includes tool selection and tool life, tool materials, tool coatings, and the advantages of tool coatings on cutter performance. Also included are tool defect identification, causes of tool defects and defining tool life.

TOOLING FOR TURNING

For entry level employees, apprentices, inspectors, toolmakers, machinists, CNC operators, engineers, quality engineers, production personnel

Online Delivery • Time Commitment: 6 hours

Individuals engaged in this course will learn about the turning process, types and purposes of turning tools, common components of a tool holder, tool holder identification, insert nomenclature, insert identification codes, tool holder identification codes, boring bar identification codes and positions of these types of tooling. Other information will include information contained in a tooling plan, care of inserts and tool holders, insert/work holder assembly as well as mounting, importance of monitoring damage that includes submitting damage reports.

TOOLING FOR MACHINING CENTERS

For entry level employees, apprentices, inspectors, toolmakers, machinists, CNC operators, engineers, production personnel, machine setup personnel

Online Delivery • Time Commitment: 4 hours

Students enrolled in this course will be able to identify the types of machining centers, types and purposes of tooling used in these machines and the components of a tool holder. Other content includes insert nomenclature, code systems, insert identification and non-indexable tools. Individuals will also learn about changing inserts, tool installation, installing a cutting body onto a tool holder, the tooling plan, store and care of tools and damage reporting.

TOOLING FOR GRINDING

For entry level employees, apprentices, inspectors, toolmakers, machinists, CNC operators, engineers, quality engineers, grinding production personnel

Online Delivery • Time Commitment: 5 hours

Individuals enrolled in this course will investigate grinding wheels and the grinding process, grinding wheel nomenclature, proper care of grinding wheels, basic grinding wheel safety, dressing a grinding wheel, truing a grinding wheel and how to properly mount a grinding wheel. Other course content includes how abrasive grains cut, basic shapes and profiles of wheels, wheel storage, wheel color and characteristics, setting up the dressing process and verification if the wheel is true.

MANUFACTURING PROCESSES & MATERIALS *(Machining)*

TOOLING FOR TAPPING

For entry level employees, apprentices, inspectors, toolmakers, machinists, CNC operators, engineers, quality engineers, production personnel, drill press personnel

Online Delivery • Time Commitment: 5 hours

Students enrolled in this course will learn about the tapping process, tapping tools, features of tapping tools, tapping tool holder nomenclature, tapping tool holders and tapping operations. Other course information will include thread form identification, thread theory, thread percentage, hole diameters for thread forming, machining fluids, types of thread relief, thread measurements, and common coatings used on taps.

PRINCIPLES OF COOLANTS AND OILS

For entry level employees, apprentices, toolmakers, machinists, CNC operators, engineers, quality engineers, production personnel, supervisors

Online Delivery • Time Commitment: 5 hours

This course will provide students with an introduction to coolants and oils, oil based cutting fluids, chemical based cutting fluids, gases and machine lubricants including machine oils. Students will also learn about friction, function of oils and cutting fluids, differences between cutting oils and machine oils, synthetic cutting fluids, straight cutting oil, compound cutting oil, gases used in the machining process and machine limitations using different oils and fluids.

MATERIAL SCIENCE

For engineers, machinists, quality personnel,production personnel, sales engineers, tool and die makers, apprentices, maintenance personnel, CNC operators.

Online Delivery • Time Commitment: 28 hours

This course introduces the nature and properties of materials. It presents a history of metals-providing background on the origins of various metals and provides an explanation of physical characteristics of metals. Students will study the chemical reactions and thermodynamics related to the production of steel as well as the key processes of iron making from the raw materials through to the final product. It stresses how metals are alloyed and formed to achieve desired mechanical properties-including comparisons between various forming processes including casting, forging, extrusion, and rolling.

MANUFACTURING TECHNOLOGY

For engineers, machinists, quality personnel, production personnel, sales engineers, tool and die makers, apprentices, maintenance personnel, CNC operators.

Online Delivery • Time Commitment: 38 hours

Advanced study of manufacturing methods, processes, related equipment, and tools of industry, requiring student to understand standard requirements to be a Journeyman Tool and Diemaker, Moldmaker, Precision Machinist, Precision Screw Machine operator, or Precision CNC operator. Topics include practices of job planning, maximum use of shop supplies, and how to work independently, efficiently and effectively. Scope is to demonstrate thin margin that is required to making a job profitable, helping student to be able to trouble shoot problems that may occur with effective problem-solving methods and technique.

MANUFACTURING PROCESSES & MATERIALS *(Machining)*

PRECISION MACHINE TECHNOLOGY II

For tool makers, machinists, entry level personnel, maintenance technicians, CNC operators, CNC programmers.

Online Delivery • Time Commitment: 42 hours

This course offers continued emphasis on shop safety and quality measurement devices. It focuses on the metal removal processes on typical equipment found in the machine shop, with emphasis on the drill press, engine lathe, milling machine, and surface grinder. It covers the use of workholding devices, as well as how to properly support and locate workpieces. It also reviews the applications of the Coordinate measuring machine (CMM), the optical comparator, and the electro-discharge machine (EDM). Presents a foundation for study of manufacturing methods, processes, related equipment, and tools of industry, requiring student to understand shop safety practices, job planning, feeds and speeds, layout tools and procedures, hand tools and bench work, metal cutting saws, drilling machines, lathes, milling machines, jig bore and jig grinder, surface grinder, E.D.M, and abrasives. It introduces the metallurgy of steel and iron and the fundamentals of metal cutting operations to produce manufacturing parts. It includes the operation of machinery, terminology, safety, measurement, layouts, print reading, machine set-ups, hand tools, quality measurement devices (e.g. rules, calipers, micrometers), and cutting tools. It highlights the use of typical equipment found in conventional machine shops.

Textbook not included: Precision Machining Technology 2nd Ed - Cengage Publishers

ISBN: 13:978-1-2854-4454-3

CNC MILLING ADVANCED MANUFACTURING PROCEDURES

For tool makers, machinists, entry level personnel, maintenance technicians, CNC operators, CNC programmers.

Online Delivery • Time Commitment: 38 hours

This course introduces the tools and technology involved in computer numeric control (CNC) machining. It explains the principles of the Cartesian coordinate system and how they apply to CNC. It also reviews the use of various metal cutting tools as they relate to CNC programming. This course will cover the process planning involved in creating CNC programs, including safety precautions, proper machine set up and operational skills, creating programs, and controlling part sizes with wear offsets.

MOLDMAKING (BASIC AND ADVANCED)

For tool makers, machinists, entry level personnel, maintenance technicians, CNC operators, CNC programmers.

Online Delivery • Time Commitment: 38 hours

This course covers the principles of injection molding, including the molding press and how it works, the basics of an injection mold, and mold components. It explains the heating of cooling of molds and the runners, gates, venting and hot runner systems. It also describes the various methods of producing cavities, cores and various mold components.

DIEMAKING

For tool makers, machinists, entry level personnel, maintenance technicians, CNC operators, CNC programmers.

Online Delivery • Time Commitment: 38 hours

This course provides specialized instruction in die construction, processes, and types related to automated manufacturing technology. This is an introduction to the basic types and construction of metal stamping dies. Topics include types of stamping dies and how they process sheet metal, standard die components, concepts of die clearances, die making terminology, and materials used in stamping die construction.

JIG AND FIXTURING

For tool makers, machinists, entry level personnel, maintenance technicians, CNC operators, CNC programmers.

Online Delivery • Time Commitment: 38 hours

This course covers the necessary information for the designs of jigs, fixtures, and dies. It includes the use and application of bushings, locating devices, and work holding devices used in jigs, fixtures, and dies.

QUALITY

MEASUREMENT AND GAUGING ONLINE TRAINING

QUALITY *(Measurement and Gauging)*

INSPECTION TECHNIQUES 1

For entry level employees, apprentices, inspectors, toolmakers, machinists, CNC operators

Online Delivery • Time Commitment: 9 hours

Students will learn about the purpose of gauges, calibrating and mastering gauges, using variable analog gauges, using variable digital gauges, micrometers, attribute gauges, thread gauges, GO/NO GO gauges and the proper care and storage of gauges. Other content includes reading micrometers, depth micrometers, types of GO/NO GO gauges, types of attribute gauges and proper calibration processes.

SURFACE PLATES

For entry level employees, apprentices, inspectors, toolmakers, machinists

Online Delivery • Time Commitment: 1 hour

Content of this course includes the function of the surface plate, how to read and interpret the information on the nameplate, defining the working area and how to safely use and care for the surface plate. Other content includes two types of calibration tests, three common grades, the significance of the surface plate color and implied data implementation.

GAUGE BLOCKS

For entry level employees, apprentices, inspectors, toolmakers, machinists, CNC operators, engineers

Online Delivery • Time Commitment: 1 hour

This course covers the purpose of gauge blocks, how to build a gauge block stack, common grades of gauge blocks and how to wring gauge blocks. Other information entails gauge block materials, calibration of gauge blocks, traceability of gauge blocks, multiple set rationale and how gauge block tolerance affects accuracy.

AIR GAUGES

For entry level employees, apprentices, inspectors, toolmakers, machinists, CNC operators, engineers, production personnel, quality engineers

Online Delivery • Time Commitment: 3 hours

Students engaged in this course will learn about air gauging, calibrating air gauges, and using an Accusetter air gauge. Other content includes the function and purpose of air gauging, components of the gauge setting device, applications of air gauging, how the air gauge operates, history of air gauging and calibration of air gauging.

OPTICAL COMPARATORS

For entry level employees, apprentices, inspectors, toolmakers, machinists, CNC operators, engineers, quality engineers, production personnel

Online Delivery • Time Commitment: 2 hours

This course entails instruction in the introduction of the optical comparator and how to operate the optical comparator. Instruction includes identifying the parts of the optical comparator, the functions of the parts, basic part inspection, profile and reflective operation, advantages and disadvantages and the history of optical comparators. Different configurations and the basic principles and rules of operation are also included.

STATISTICAL PROCESS CONTROL 1

For entry level employees, apprentices, inspectors, toolmakers, machinists, CNC operators, engineers, quality engineers, production personnel

Online Delivery • Time Commitment: 3 hours

This course explores variation, attributes of variation, range for sampling, calculating control limits, control limits for the R chart, finding the range from a set of data, types of variation in production and plotting a histogram. Other content entails the normal curve, relationship of probability and SPC, upper and lower control limits and finding the central tendency from a set of data.

QUALITY *(Measurement and Gauging)*

STATISTICAL PROCESS CONTROL 2

For entry level employees, apprentices, inspectors, toolmakers, machinists, CNC operators, engineers, quality engineers, production personnel

Online Delivery • Time Commitment: 2 hours

Students will learn how to identify points within and outside the control limits, interpreting CPK, calculating the capability index of a process, identifying sources of variation with assignable causes and interpreting graphical information. Students will learn about identifying variation with assignable causes and those with system causes and out of control conditions as well as tendencies.

SPECIALTY MICROMETERS

For entry level employees, apprentices, inspectors, toolmakers, machinists, CNC operators, engineers, quality engineers, production personnel

Online Delivery • Time Commitment: 2 hours

Content in this course includes an introduction into the function and use of specialty micrometers, types of specialty micrometers, what these instruments measure, recognition of potential sources of measurement error and how to conduct measurements. Other content includes an introduction in to optical comparators, calibration of these measuring instruments and how provide care and maintenance.

TEST INDICATORS

For entry level employees, apprentices, inspectors, toolmakers, machinists, CNC operators, production personnel

Online Delivery • Time Commitment: 1 hour

Students who enroll in this course will learn about test indicators and their purpose in measurement, how a test indicator operates, basic calibration and basic care. Other areas of content include how to properly set a test indicator, basic types of error, reading the test indicator and troubleshooting.

ISO 9000 AND TS 16949

For entry level employees, apprentices, inspectors, toolmakers, machinists, CNC operators, engineers, quality engineers, production personnel, managers, supervisors

Online Delivery • Time Commitment: 4 hours

ISO 9000 and TS 16949 defines a quality management system in terms of history, benefits, and the various uses and types of quality systems. The learner learns about the role of the International Organization for Standardization (ISO), reviews the purpose and key points of the eight elements of ISO / TS 16949, as well as the required documentation for this quality system. The learner also learns the significance of a 'shall statement.'

QUALITY CONTROL / SPC/ INSPECTION

For entry level employees, apprentices, inspectors, toolmakers, machinists, CNC operators, engineers, production personnel, quality engineers

Online Delivery • Time Commitment: 38 hours

GD&T / Quality Control / SPC / Inspection: This course focuses on how to interpret and apply the concepts of geometric dimensioning and tolerancing to engineering drawings. Topics covered include fundamentals of symbols, terms used in application, positional tolerance applications, data frame and conversion tables. The course introduces the area of quality control of mechanical parts in the industry. You will learn the skills necessary to properly inspect parts by using the skills you have obtained through blueprint reading of geometric dimensioning and tolerancing, as well as inspection tools and equipment. You will learn why these skills are necessary in the industry and how to properly apply them on the job. This course familiarizes students with the applications of statistics in process and quality control function. Upon completion, the student will be able to verify part dimensions, location, and orientation of finished products and parts.

MANUFACTURING FUNDEMENTALS

PRINTS & DRAWINGS
ONLINE TRAINING

BASIC BLUEPRINT READING

For entry level personnel, apprentices, inspectors, production personnel.

Online Delivery • Time Commitment: 38 hours

This course teaches the proper terminology, symbols, and guidelines associated with reading and sketching blueprints, and how these are applied in a manufacturing environment. It focuses on reading as well as interpreting blueprints through the different views of an object, including dimensioning techniques, toleranc-ing, fraction to decimal conversion, drafting lines using geometric equations, line types, orthographic views, isometric views, offset sections, auxiliary sections, symbols, and broken sections. Textbook not included.

Blueprint Reading for Machine
Trades by Prentice Hall
ISBN: 13-978-0-13-217220-2

INTERMEDIATE BLUEPRINT READING

For engineers, machinists, quality personnel, production personnel, sales engineers, tool and die makers, apprentices, maintenance personnel.

Online Delivery • Time Commitment: 38 hours

The advanced study of the relationship of engineering drawings to applications of machine shop production of precise parts, dies, and mold components to provide students with theory on use of Coordinate Measuring Machine (CMM) for machine tool trades. Understanding the use of machine shop engineering drawing mathematics as used in development and production of a piece part from a print in machine shop will be stressed. Application of engineering drawing skills on projects made in shop. Emphasis will be placed on geometric dimensioning. Students will learn to read and comprehend advanced engineering drawings from various industries. This course is designed to increase the student's efficiencies in blueprint reading. This course emphasizes the relationship of blueprint drawings and how they apply to manufacturing parts including lines, views, dimensioning, and machining processes. It includes fraction to decimal conversion, drafting lines using geometric equations, line types, orthographic views, isometric views, offset sections, auxiliary sections, symbols, and broken sections.

Blueprint Reading for Machine
Trades by Prentice Hall
ISBN: 13-978-0-13-217220-2

AWS WELDING SYMBOLS ON BLUEPRINTS

For engineers, machinists, quality personnel, production personnel, sales engineers, tool and die makers, apprentices, maintenance personnel

Online Delivery • Time Commitment: 1 hour

Students enrolled in this course will learn how to define the eight elements of a welding symbol, describe the purpose of a tail, discover how to read and interpret dimensions related to the symbol, and the basic types of weld symbols. Other instruction includes defining the purpose of weld symbols, supplementary symbols, and interpreting additional information on a welding print.

INTERMEDIATE BLUEPRINT - READING WITH BASIC ESSENTIALS FOR GDT

For engineers, machinists, quality personnel, production personnel, sales engineers, tool and die makers, apprentices, maintenance personnel.

Online Delivery • Time Commitment: 38 hours

This course introduces the symbols and concepts of geometric dimensioning and tolerancing as they relate to engineering drawings. This is an interactive course that teaches the student how to read intermediate blueprints through a series of videos that replicate a classroom environment. The student is required to have a textbook so that they can complete blueprints with the help of the instructor.

MANUFACTURING FUNDAMENTALS *(Prints and Drawings)*

BASIC APPLIED MATH

For entry level personnel, apprentices, inspectors, production personnel.

Online Delivery • Time Commitment: 42 hours

This course introduces math skills and concepts that are necessary in shop activities, including use of fractions, fraction to decimal conversion, basic shop geometry, and calculating basic angles. Provides skills in layout techniques and operations, including bolt hole circles, location of surfaces related by non-right-angle triangles, and points of tangency. Included are all work necessary to layout drawing by sketching the proper views from an actual part. Textbook not included.

Blueprint Reading for Machine

Trades by Prentice Hall

ISBN: 0-07-071358-8

BASIC SHOP MEASUREMENTS AND APPLIED MATH

For entry level employees, apprentices, inspectors, toolmakers, machinists, CNC operators

Online Delivery • Time Commitment: 42 hours

This course is designed to increase the student's efficiency in applied shop math skills and concepts that are necessary in shop activities. Emphasis is on the relationship of math required for manufacturing of parts as viewed on blueprint drawings and how the concepts apply to manufacturing in general as well as with Shop Measuring Practices / Quality Control, and Machining Processes. Textbook not included.

Blueprint Reading for Machine

Trades by Prentice Hall

ISBN: 0-07-071358-8

ADVANCED MATH (FROM PRINTS)

For engineers, machinists, quality personnel, production personnel, sales engineers, tool and die makers, apprentices, maintenance personnel.

Online Delivery • Time Commitment: 38 hours

This course is the 4th in a series and is designed to increase your efficiencies in math skills and concepts that are necessary in shop activities. It includes more complex applications, such as the use of the law of sines and the law of cosines.

INTERMEDIATE APPLIED MATH

For engineers, machinists, quality personnel, production personnel, sales engineers, tool and die makers, apprentices, maintenance personnel.

Online Delivery • Time Commitment: 42 hours

This course is the 3rd in a series and is designed to increase your efficiencies in math skills and concepts that are necessary in shop activities. It explains how to properly use the Pythagorean theory and explains the use of trigonometric functions and their applications. It focuses on solving right triangle trigonometry problems and relates these trig functions to the use of sine bars and gage blocks for use in setting up angles to be machined. Fundamentals of computer application as aid to machining processes. Emphasis on engineering drawing analysis, using trigonometry and other forms of mathematics to determine programming points; ascertaining implied part dimensions; determinations of machining parameters; calculation of speeds; feeds and tool offset; Textbook not included.

Blueprint Reading for Machine

Trades by Prentice Hall

ISBN: 0-07-071358-8

ADVANCED APPLIED MATH

For engineers, machinists, quality personnel, production personnel, sales engineers, tool and die makers, apprentices, maintenance personnel.

Online Delivery • Time Commitment: 38 hours

This course is the 5th course in an applied shop math series and it is designed to increase the student's efficiencies in math skills and concepts that are necessary in shop activities. This course uses actual problems that were encountered in the precision machine shop that were required to be solved in order to effectively machine a part. Textbook not included.

Blueprint Reading for Machine

Trades by Prentice Hall

ISBN: 0-07-071358-8

SAFETY

ONLINE TRAINING

SAFETY

PERSONAL PROTECTIVE EQUIPMENT (PPE)

For entry level employees, apprentices, inspectors, toolmakers, machinists, CNC operators, engineers, supervisors, maintenance personnel

Online Delivery • Time Commitment: 3 hours

The course engages the learner in the various types of personal protective equipment, when and where to apply PPE, maintenance of the PPE, basic safety rules associated with various PPE, and employee responsibilities. PPE covered in this course includes eye, ear, head, hand, and foot, respiratory and other forms of personal protection.

LOCKOUT/TAGOUT

For entry level employees, apprentices, inspectors, toolmakers, machinists, CNC operators, engineers, all production personnel, maintenance personnel

Online Delivery • Time Commitment: 3 hours

This course covers the definition of lockout/tagout, identification of lockout/tagout devices, purpose, requirements and applications of lockout/tagout devices. Students will learn about the four factors of an efficient energy control program as well as the role of effective and authorized employees.

SAFETY PRACTICES AND REGULATIONS

For entry level employees, apprentices, inspectors, toolmakers, machinists, CNC operators, engineers, all production personnel, maintenance personnel, office personnel, shipping and receiving personnel

Online Delivery • Time Commitment: 3 hours

Individuals will learn about agencies that regulate safety, common causes of work place accidents, types of regulations OSHA enforces, and basic work place safety initiatives. Other content will include the function of NIOSH, the mission and purpose of the EPA, definition of injuries and common causes of work place accidents. This course provides an overview of safety that is beneficial prior to taking individual safety courses covering specific topics.

CONFINED SPACES

For entry level employees, apprentices, inspectors, toolmakers, machinists, CNC operators, engineers

Online Delivery • Time Commitment: 1 hour

Students will learn how to define a confined space, define permit required confined space, employee notification, basic OSHA compliance, roles and responsibilities of an attendant, authorized entrant and entry supervisor and understanding the hazards involved in entering and working in a confined space. Examples of accidents and injuries that can happen in confined space are also explored.

SAFETY

HAZARDOUS COMMUNICATIONS

For entry level employees, apprentices, inspectors, toolmakers, machinists, CNC operators, engineers, office personnel, production personnel

Online Delivery • Time Commitment: 2 hours

Students will learn about hazardous materials, HAZCOM from the OSHA standards, responsibilities involved in the safety program, where hazardous materials are used and the MSDS sheet. Other information includes how to use the MSDS information, how to interpret the HMIS color bar system and fundamental concepts of the Hazardous Material Safety Data System.

BASIC SHOP SAFETY

For entry level employees, apprentices, inspectors, toolmakers, machinists, CNC operators, engineerssupervisors, maintenance personnel

Online Delivery • Time Commitment: 30 hours

Shop Safety can help your organization simplify training administration and document training progress. Our course features engaging content that can easily be customized to include facility-specific information. See for yourself how our online safety training can help simplify your training initiatives. provides a path to workplace safety excellence by making safe behavior and workplace conditions part of the work culture, thus preventing injuries and incidents. The objective of the program is to stop injuries by improving safety observation skills and helping people talk with each other about safety. It teaches employees to recognize safe and unsafe conditions and acts.

There are common hazards associated with the use of machine shop equipment and tools. The Machine Shop Safety program provides guidance on the use of personal protective equipment, machine guarding, and recommended safety policies. This course has 21 modules and covers Basic machine shop safety, Fast Response – CPR, Fire Safety, Safe Lifting, How to treat for Shock, PPE, Eye protection, Blood Borne Pathogens, Treating basic Cuts, HazCom, Machine Guarding.

LEAN MANUFACTURING

ONLINE TRAINING

LEAN MANUFACTURING

LEAN OVERVIEW AND WORKPLACE ORGANIZATION

For engineers, machinists, quality personnel, production personnel, sales engineers, tool and die makers, apprentices, maintenance personnel, CNC operators

Online Delivery • Time Commitment: 7 hours

Students will learn about the history and purpose of lean and the lean tools, workplace organization principles and methods, organizational measurements, elements of the Toyota Production System and value of lean. Other content includes the five S's that include sort, straighten, shine, standardize and sustain.

INTRODUCTION TO LEAN

For production personnel, apprentices, inspectors, quality engineers, tool and die makers, CNC machinists, mold makers, front line supervisors

Online Delivery • Time Commitment: 4 hours

This course covers the need for lean, what lean is, what lean is not, methods for lean transformation and three characteristics of a lean culture. Other material includes common implementation challenges, value added activity, four principles of every lean program, methodology involved and the types of waste and how waste affects lean.

5S

For all production personnel, tool room employees, quality personnel, supervisors, maintenance personnel

Online Delivery • Time Commitment: 6 hours

This course will instruct participants in the effects of company disorganization; the stages of 5S – including Sort, Set in Order, Shine, Standardize, and Sustain; 5S within the lean tool package; general steps of 5S; 5S preparation; 5S and maintenance activities; gauging the value of 5S Sustainment and Shine implementation. Other course content includes key actions of Straighten implementation, key actions of Sort implementation, goal of Standardization and implementation and measurement of all the 5S components.

LEAN THEORY

For all production personnel, tool room employees, quality personnel, supervisors, maintenance personnel, management personnel

Online Delivery • Time Commitment: 5 hours

Individuals enrolled in this course will learn about the origins of lean theory and the Lean Production System, leadership principles in lean theory, the value of people in lean theory, the tools behind Just-in-Time (JIT), tools of Jidoka and takt time in a lean flow system. Other content includes push and pull production, roles of lean team members, continuous improvement through Kaizen and the purpose of heijunka.

ENGINEERING & AUTOMATION

AUTOMATION, ELECTRICAL,
FLUID POWER
ONLINE TRAINING

ENGINEERING & AUTOMATION
(Automation, Electrical, Fluid Power)

PRINCIPLES OF ROBOTICS S4C+ CONTROLLER

For entry level employees, apprentices, inspectors, toolmakers, machinists, CNC operators, engineers, floor personnel, robotic operators, setup personnel

Online Delivery • Time Commitment: 32 hours

Content of this course includes the introduction of robot technology and application, robot safety, robot motion, robot configuration, ABB robot controls and automatic operation. Other areas include manual ABB robot operation, advanced ABB robot operation, configuration for welding, painting, deburring, buffing, etc., Robot motion to world, base or tool coordinate system, keys, buttons and switches associated with the teach pendant and how to power up and start the robot.

ELECTRICAL FABRICATION I

For apprentices, toolmakers, machinists, CNC operators, engineers, floor personnel, robotic operators, maintenance personnel and setup personnel

Online Delivery • Time Commitment: 9 hours

Electrical fabrication introduces electrical system wiring and develops fundamental knowledge of electrical wiring and components. Covers basic electrical system wiring, interpreting wire installation plans, handling non-metallic cable, understanding application of basic components such as switches, outlets, and lighting, and connecting electrical services.

ELECTRONIC SENSORS

For apprentices, toolmakers, engineers, maintenance personnel, sensor technicians

Online Delivery • Time Commitment: 7 hours

Electronic sensors introduces non-touch electronic sensing in relay and programmable controller applications. Learners develop knowledge of operation, installation, performance analysis, and design of electronic sensors. Explores capacative, inductive, and infrared sensors as well as PNP and NPN transistors.

ELECTRIC MOTOR CONTROL

For maintenance personnel, apprentices, inspectors, toolmakers, machinists, CNC operators, engineers, robotic operators and setup personnel, electric motor assemblers

Online Delivery • Time Commitment: 30 hours

Electric motor control teaches electric relay control of AC electric motors found in industrial, commercial, and residential applications. Learners gain understanding of the operation, installation, design, and troubleshooting of AC electric motor control circuits for many common applications. This course develops skills in interpreting schematics, system design, motor start / stop circuits, motor sequence control, reversing motor control, and motor jogging. Safety is emphasized throughout, highlighting motor safety, lockout/ tagout and safety interlocks.

MOTOR BRAKING

For apprentices, engineers, robotic operators and setup personnel, maintenance personnel, motor assemblers

Online Delivery • Time Commitment: 5 hours

Motor braking teaches the common braking methods found in industrial, commercial, and residential applications. Learners acquire skills in the three of the most common braking methods: electromagnetic braking, plugging and DC injection. Troubleshooting braking problems is emphasized in the course. Creates an understanding of how an electromagnetic brake is constructed, how it works, and when to apply it in industrial situations. Stopping an electric motor via plugging is closely examined, focusing on the application of a drum switch, push-button, and timer.

VARIABLE FREQUENCY AC DRIVE

For apprentices, toolmakers, engineers, maintenance personnel, sensor technicians, motor assemblers and technicians

Online Delivery • Time Commitment: 16 hours

Variable frequency AC drives teaches variable frequency AC solid-state control of 3-phase electric motors. Learners develop knowledge in the operation, installation, performance analysis, troubleshooting, and design of AC solid state control using 2-wire, 3-wire, manual, and open-loop speed control. Highlights motor jogging and dynamic braking as well as programmable acceleration and deceleration.

SCR SPEED CONTROL

For apprentices, toolmakers, engineers, maintenance personnel, sensor technicians, motor assemblers and technicians

Online Delivery • Time Commitment: 5 hours

Teaches speed control of DC electric motors using Silicon Controlled Rectifier (SCR)-based circuits. SCRs provide efficient variable speed control of DC motors and are widely used in industrial applications. Learners develop knowledge in the operation, installation, performance analysis, and troubleshooting using SCRs for various applications. Focus on full- and half-wave rectification and motor speed control.

REDUCED VOLTAGE STARTING

For apprentices, toolmakers, engineers, maintenance personnel, sensor technicians, motor technicians

Online Delivery • Time Commitment: 12 hours

Reduced voltage starting teaches methods of starting electric motors under reduced voltage and 3-phase power distribution using Delta and Wye transformer wiring configurations. Learners develop skills and knowledge in primary resistor, autotransformer, and part winding reduced voltage starting, step-up and step-down transformers, three phase power generation and distribution, and Wye and delta wiring configurations.

ENGINEERING & AUTOMATION
(Automation, Electrical, Fluid Power)

ELECTRONIC COUNTER

For apprentices, toolmakers, engineers, maintenance personnel, sensor technicians, motor technicians and assemblers

Online Delivery • Time Commitment: 5 hours

The electronic counters course focuses on electrical event counting in electrical motor control circuits. Electrical counters are used in a wide variety of applications including production counting, reject counting, sorting, flow timing, and much more. This course covers operation, installation, performance analysis, and design using one-shot timers, repeat timers, and electrical counters.

PRINCIPLES OF HYDRAULICS

For entry level employees, apprentices, inspectors, toolmakers, machinists, CNC operators, engineers, maintenance personnel, production personnel

Online Delivery • Time Commitment: 5 hours

Principles of hydraulics introduces the theory and application of hydraulics in manufacturing. The learner studies the fundamentals of hydraulic theory; the form, fit, and function of components of a hydraulic system; common applications of hydraulics in manufacturing; and how to safely operate and maintain hydraulic systems.

BASIC HYDRAULICS

For entry level employees, apprentices, inspectors, toolmakers, machinists, CNC operators, engineers, quality engineers, production personnel, maintenance personnel, automation technicians

Online Delivery • Time Commitment: 20 hours

Basic hydraulics introduces hydraulic power use and application, allowing learners to develop skills and knowledge needed to apply hydraulics in modern industry. It takes learners through key topics and skills in hydraulic power and safety, hydraulic circuits, hydraulic schematics, the principles of hydraulic pressure and flow, and hydraulic speed control circuits. It covers pumps, fluid friction, how to connect hydraulic circuits, hydraulic cylinders and valves (including needle valves), and a wide array of hydraulic applications.

BASIC PNEUMATICS

For entry level employees, apprentices, inspectors, toolmakers, machinists, CNC operators, engineers, quality engineers, production personnel, automation technicians

Online Delivery • Time Commitment: 20 hours

Basic pneumatics prepares learners to work intelligently in industry with pneumatic applications. It introduces pneumatic power and takes learners through key topics and skills in pneumatic power and safety, pneumatic circuits, pneumatic schematics, the principles of pneumatic pressure and flow, and pneumatic speed control circuits. It covers pressure regulation, air filtration, how to connect pneumatic circuits, pneumatic cylinders, valves, and actuators, a wide array of pneumatic applications, pressure and cylinder force, pneumatic leverage, pressure and volume, and air flow resistance.

MSSC CERTIFICATION COURSES

ONLINE TRAINING

MSSC CERTIFICATION COURSES

MSSC SAFETY AWARENESS

For entry level personnel, apprentices, inspectors, production personnel

Online Delivery • Time Commitment: 35-40 hours, including post-test for certification

MSSC Safety covers general shop safety and raises the worker's awareness of the hazards around them and how to best protect themselves and work safely. Other topics included in this course are: MSDS sheets, personal protective equipment, lock out tag out, fire safety, electrical safety and more.

MSSC MANUFACTURING PROCESSES & PRODUCTION

For entry level personnel, apprentices, inspectors, production personnel

Online Delivery • Time Commitment: 35-40 hours, including post-test for certification

Production and Processes Module investigates a variety of mechanical principles and linkages found in manufacturing environments. Other areas of study include types of machine tools, machine tool operations, manufacturing processes and the basic elements of process control in manufacturing. Instruction also includes the basics of workflow and equipment procedures.

MSSC MAINTENANCE AWARENESS

For entry level personnel, apprentices, inspectors, production personnel

Online Delivery • Time Commitment: 35-40 hours, including post-test for certification

The Maintenance Technician Module covers the basic competencies needed by a technician for maintenance awareness and preventive maintenance in manufacturing. Coursework includes a study of maintenance relating to electrical circuits, motors, pneumatics, lubrication, various drives, bearings and couplings. An introduction to machine controls and machine automation is included.

MSSC QUALITY PRACTICES & MEASUREMENT

For production personnel, apprentices, inspectors, quality engineers, tool and die makers, CNC machinists, mold makers, front line supervisors

Online Delivery • Time Commitment: 35-40 hours, including post-test for certification

The Quality Practices and Procedures module covers the application of blueprint reading, measurement, process control and SPC. The course is designed to examine the employee's role in producing a quality product. The meaning and benefits of quality, the Member Cost of quality, and problem solving tools for continuous improvement will also be covered.

MSSC GREEN PRODUCTION

For entry level personnel, apprentices, inspectors, production personnel

Online Delivery • Time Commitment: 35-40 hours, including post-test for certification

MSSC defines Green Production as "workplace activities across all industries within the manufacturing sector that require the use of equipment, technologies, and processes that will improve the environmental performance of manufacturing companies." Areas of study include training workers in environmental issues, implementing and promoting an environmental program, conducting environmental incident and hazard investigations, monitoring environmental aspects at each stage of production, waste reduction, reprocessing materials by recycling and reusing and much more.

OCCUPATIONAL PACKAGES

ONLINE TRAINING

OCCUPATIONAL PACKAGES

QUALITY INSPECTOR (MECHANICAL)

For quality control inspectors, production personnel, apprentices

Online Delivery • Time Commitment: 69 classes, each 60-90 minutes

This course package encompasses the basic skills need for a quality inspector position. Content includes a strong knowledge in math and print reading, geometric dimensioning and tolerancing, advanced inspection tools such as CMMs and optical comparators, locating principles and a working knowledge of common manufacturing processes. Other information includes process control and quality improvement initiatives.

PRESS BRAKE OPERATOR

For tool and die makers, press brake personnel, entry level employees, engineers, mechanical press setup and operators

Online Delivery • Time Commitment: 66 classes, each 60-90 minutes

Students will learn about the basic components of the press brake, mechanical properties of metals, forming of metals, part inspection and quality assurance as well as basic print reading, safety and math. Other areas include instruction on materials, mechanical systems, rigging, basic statistics and geometry.

PRESS OPERATOR

For tool and die makers, press brake personnel, entry level employees, engineers, mechanical press setup and operation entry level personnel

Online Delivery • Time Commitment: 72 classes, each 60-90 minutes

Students will learn about the basic components of the punch press and die, inspection methods, math and print reading, material properties, basic knowledge of a quality system, rigging, safety and tolerancing. Other areas include basic geometry, lifting and moving equipment and material, TPM overview and coil handling equipment.

GENERAL MAINTENANCE AND REPAIR

For machinists, tool and die makers, production personnel, entry level employees, engineers, maintenance personnel

Online Delivery • Time Commitment: 122 classes, each 60-90 minutes

Students engaged in this course will learn about maintaining and fixing a wide arrange of building systems and mechanical equipment, electrical systems and wiring, fluid systems and plumbing, hand tools, mechanical drives, fasteners and print reading. Other areas of content include preventive maintenance, adhesives, abrasives, basic hydraulics and pneumatics, inspection methods, PLC, rigging, safety and properties of materials.

OCCUPATIONAL PACKAGES

CNC PROGRAMMER

For machinists, tool and die makers, production personnel, apprentices, CNC operators, CNC machine tenders

Online Delivery • Time Commitment: 116 classes, each 60-90 minutes

Students enrolled in this course package will learn about G code programming, part dimensioning, work piece materials, cutting tool theory, speeds and feeds, work holding methods, work holding setups and the basics of various CNC machines. Other course content will include CNC offsets, canned cycles, CNC coordinates, GE Fanuc controls, Haas controls, inspection, metal cutting theory, tool geometry and safety.

INDUSTRIAL MACHINERY MAINTENANCE AND REPAIR

For machinists, maintenance personnel, production personnel, apprentices, CNC operators, machine operators

Online Delivery • Time Commitment: 142 classes, each 60-90 minutes

Participants in this course package will gain knowledge in electrical circuits and components, hydraulic systems, pneumatic systems, welding equipment, mechanical drives, hand tools, fasteners, TPM and a basic knowledge of manufacturing processes. Other content encompasses instruction in abrasives, basic CNC, AC and DC power sources, NEC overview, inspection procedures, manual machining, materials, motor controls, press brake basics, geometry, math and safety.

MACHINIST/MACHINE SETTER

For machinists, tool and die makers, production personnel, apprentices, CNC operators, machine operators, engineers, CNC programmers, machining supervisors

Online Delivery • Time Commitment: 129 classes, each 60-90 minutes

Students enrolled in this course package will learn about cutting tool theory, CNC coordinate systems, basic G code programming, materials, manual machining, part inspection, math, print reading, work holding and basic setups. Other content includes an introduction to EDM, threading, mechanical systems, metal cutting safety, rigging, TPM overview, SPC overview, machine guarding and basic safety including an introduction into supervision.

NEW HIRE TRAINING

ONLINE TRAINING

NEW HIRE TRAINING

BLUEPRINT READING

For entry level personnel, apprentices, inspectors, production personnel

Online Delivery • Time Commitment: 5 hours

This course covers line convention and the use of each type of line, types of drawings, sizes and sections of prints, dimensions and notes, scale, size and location dimensions, tolerancing and basic orthographic theory. Other content areas included in instruction are basic data theory, introduction into GD&T, print symbols and types of dimensioning.

GENERAL DIMENSIONING AND TOLERANCES

For entry level employees, apprentices, inspectors, engineers, office personnel, sales engineers, machinists, mold makers, die makers

Online Delivery • Time Commitment: 3 hours

This course provides an understanding of general dimensions and tolerances, terms and symbols used in dimensioning and tolerancing, and the fundamental rules of the ASME 14.5 Standard. Other information includes locating tolerances, tolerancing methods, tolerance accumulation and dimensioning methods addressing tolerance accumulation

GEOMETRIC DIMENSIONING AND TOLERANCING

For engineers, machinists, quality personnel, production personnel, sales engineers, tool and die makers, apprentices, maintenance personnel

Online Delivery • Time Commitment: 11 hours

Each participant will learn about basic dimensioning and tolerances including purpose, as well as common terms used in GD&T presentation. Instruction includes identifying the true geometric counterpart, free-state condition, feature control frame interpretation and types of feature control frames. Students will explore material modifiers, geometric tolerance zones, data and data reference frames, and alternate data references. Content includes instruction in form, profile, location, and run-out tolerancing application and interpretation.

MATHEMATICS 1

For production personnel, apprentices, inspectors, quality engineers, tool and die makers, CNC machinists, mold makers, front line supervisors

Online Delivery • Time Commitment: 6 hours

This course informs the students about the ground rules of math, terms, symbols, application of the number line, whole numbers and integers. Other content includes the four basic math functions, basic mathematical properties, definition of a variable, solving inequalities, fractions and decimals, place value, conversion, percentage, average and ratio. The basics of geometry are also covered in this course.

TRIGONOMETRY 1

For entry level employees, apprentices, inspectors, toolmakers, machinists, CNC operators

Online Delivery • Time Commitment: 6 hours

This course will integrate CNC theory into the mathematics of trigonometry. Students will learn about angles, triangles, Pythagorean theorem, basic trigonometry, circles and semi-circles. Other content includes the components of angles, angle conversion, basic trigonometric functions, inverse functions, quadrants, finding unknowns using the Pythagorean theorem and basic manufacturing applications.

NEW HIRE TRAINING

PRINCIPLES OF ADVANCED MANUFACTURING

For entry level employees, apprentices, inspectors, toolmakers, machinists, CNC operators, engineers, quality engineers, production personnel, managers, supervisors

Online Delivery • Time Commitment: 5 hours

Individuals enrolled in this course will learn about advanced manufacturing processes and materials, three characteristics of all advanced manufacturing plants, technology of advanced manufacturing such as CNC, PLC, CAD, CAM and CIM, automation, robots the software relationships applied in manufacturing. Other content includes plant layout, layout formats, manufacturing metrics and key departments of a typical advanced manufacturing plant.

TMA APTITUDE EXAM

For everyone

Online Delivery • Time Commitment: 2 hours max

TMA has teamed up with industry professionals to put together this assessment as a tool for employers to use in their hiring process as a pre-employment test. This exam could also be used to evaluate existing employees as well! The exam is broken down into four sections covering the following: Applied Machine Technology Math, Blueprint and Mechanical and Spatial Relations, Mechanical Reasoning, and Measurement and Inspection.

WORKKEYS: TMA MEMBERS HIRE AND DEVELOP EMPLOYEES WITH CONFIDENCE

Individuals who complete the following three assessments are eligible for a National Career Readiness Certification (NCRC):

Applied Math

Graphic Literacy

Workplace Documents

NCRC Certification

TMA members use WorkKeys to improve their workforce throughout the employment life cycle:

ACT's WorkKeys is a job skills assessment program that helps employers select, hire, train, develop, and retain a high-performance workforce. WorkKeys assesses employee competence in a number of areas. Before enrolling participants in training, TMA administers WorkKeys as a way to assess the participant's readiness for training.

HIRING

WorkKeys testing demonstrates whether a candidate has the foundational skills and abilities necessary for success in your organization.

ACT maintains an extensive database of job profiles, making it easy to measure a candidate's skill set against position requirements. It is also easy to generate custom job profiles that reflect the unique demands of your organization.

In conjunction with WorkKeys testing, TMA offers the National Career Readiness Certification. Hire with the confidence that your new employees are truly the best, brightest, and most trainable of their peers.

TRAINING & DEVELOPMENT

WorkKeys assessments of current employees can help you to identify and close skill gaps.

Targeted training makes the most of your training dollars by pinpointing specific areas for employee development, producing better results with lower overall Member Costs.

Accounting, Auditing, Tax & Business Advisory Services

The KRD Advantage…

Offering Technology & Manufacturing Companies:

- *Industry-Specific Financial Solutions & Strategies*
- *Comprehensive Advice on Inventory, Throughput & Cash Flow Management Issues*
- *Informed Guidance on Complex & Changing Tax Laws*
- *International Experience & Resources*
- *A Reputation for Quality, Industry Knowledge, and a Passion for Your Success*

"We have been highly satisfied with the entire team at KRD. Their knowledge of our business and understanding of multiple companies within an organization has helped us feel supported over these past 5 years. KRD is always available for any and all of our accounting needs. Allen, Jose and Matt have exceeded our expectations and continue to aid us in doing business even during the 2020 Global Pandemic. It is great to have a vendor such as KRD that we can count on as a trusted business partner."

– Luis Toledo, President & CEO, Mid-West Moving & Storage

krd ACCOUNTANTS CONSULTANTS ADVISORS

GGi INDEPENDENT MEMBER

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