



Customized Corporate Training Classes 2024

These classes are Instructor-Led
Open Entry CTI (Corporate Training Institute) Classes

6364 136th Ave Pvt
Holland MI 49424
616-738-8935

Notes:

Table of Contents:

Allen-Bradley RSLogix 5000 –Basic PLC	4
Allen-Bradley RSLogix 5000 –Intermediate PLC Level I	5
HMI Programming Course	6
AutoCAD	7
Fluid Power -Hydraulic/Pneumatic Controls	8
MIG Welding Bootcamp	9
TIG Welding Bootcamp.....	10
Electrical Fundamentals.....	11
AC/DC Motor Controls and Drives.....	12
Electrical Schematic Print Reading	13
Panel Build Technician.....	14
Blueprint Reading (Manufacturing).....	15
Basic GD&T – Geometric Dimensioning and Tolerances	16
Fundamentals of GD&T – GDT102	17
Electronic Sensors.....	18
EveryDay Leadership: For Frontline Employees	19
Coaching for Managers.....	20
Metrology	21
A3 for Problem Solving	22
FANUC Robotics Operation & Programing Core Class.....	23
FANUC Robotics Operation & Programing Advanced Class	23
FANUC Robotics Mechanical	24
FANUC Electrical Maintenance and Troubleshooting	25
Lean Applied	26
Project Management for the Non-Project Manager	27
5S & Visual Management	28
Value Stream Mapping	29
Certified Six Sigma Greenbelt.....	30
Learning to See – Eliminating Waste in the Workplace	31
Measurement Systems Analysis (MSA)	32
Fundamentals of Statistical Process Control	33
Implicit Bias Training	34

Allen-Bradley RSLogix 5000 –Basic PLC

Course Overview

This forty-hour (40 hr.) course is designed to familiarize participants with the Rockwell RSLogix PLC programming. This course will provide learners with the fundamentals needed to create, transfer, test and verify working RSLogix projects. The uses of Ladder logic are explained. The concept of ladder logic using tags and datatypes instead of data tables will be applied. Participants will go online with controllers and edit ladder routines online and offline.

Course Outline

- **Ladder Logic and the RSLogix Application**

- Introduction
- PLC Functions
- Processor Scan Sequence
- Processor I/O Scan
- Ladder Logic
- Ladder Logic Path of Conduction
- Basic Logic Components
 - XIC
 - XIO
 - OTE
- RSLogix 5000 Software Environment
 - Controller Organizer Window
 - Controller Properties Access
 - Entering Ladder Logic
 - Verifying a Program
 - Uploading and Downloading Ladder Logic
 - Communications Path
 - Communications Path Options

- **Communications – Logix5000 Controller**

- Terminology
- The Processor Key Switch
- Change Controller Mode Remotely
- Viewing or Editing a Logic Project
- Offline Editing/Viewing
- Online Editing/Viewing
- Go Online, Upload/Download with a Logix 5000 Controller
- Hands-on Exercises Communicating with a Logix 5000 Controller, Troubleshooting a Controller without a matching file

Cost: \$1,495

Dates: 3/18/24 – 3/29/24 M-F

7:30 am – 11:30 am (10

Mornings)

Or

Dates: 3/18/24 – 3/29/24

Monday - Friday

12:30 pm – 4:30 pm (10

Afternoons)

Or

Dates: 6/10/24 – 6/14/24

Monday – Friday

7:30 am – 4:00 pm

(Lunch provided)

***Min 6/Max 12**

Allen-Bradley RSLogix 5000 –Intermediate PLC Level I

(prerequisite of A/B PLC Basics or equivalent experience)

Course Overview

This forty-hour (40 hr.) course is designed to allow the user to program, test, and verify a range of PLC programs. Programming concepts, tips, and rules will be applied. This course will provide learners with a working knowledge of working online and offline using RSLogix projects. Ladder logic fundamentals are used in multiple examples. Participants will be able to monitor, edit, and create Programs and Routines to construct, monitor, or modify projects. The concept of ladder logic using tags and datatypes instead of data tables will be applied. Participants will go online with controllers and edit ladder routines online and offline.

Course Outline

- **Ladder Logic and the RSLogix Application**
 - Introduction
 - Review of Basic Logic Components
 - New Logic Commands
 - Processor Scan Sequence – Scanning Routines
 - Applying Logic
 - Writing a Program for PLC Control Systems
 - Programming a garage door opener
 - Programming an Elevator
 - Programming a Tank Fill/Mixer
- **PLC Communication**
 - Communication Networks
 - Ethernet and Ethernet I/P
 - DeviceNet
 - Introduction to the Safety PLC
 - Controls Software
- **Introduction to Ethernet**
 - Set the Programming Computer IP Address
 - Set an IP Address
 - Exercise Set an IP Address
 - RSLinx
 - Exercise Configure an RSLinx Ethernet Driver
- **Hands on Exercises**

Cost: \$1,495

Dates: 6/17/24 – 6/21/24

Monday - Friday

7:30 am - 4:00 pm

Lunch provided

***Min 6/Max 12**

HMI Programming Course

Course Overview

This forty-hour (40 hr.) course is designed to provide the skills in HMI fundamentals. The course provides an understanding of HMI functions hardware and applications. Course topics include PLC to HMI instructions, hardware, HMI graphics, and creating troubleshooting messages displayed on HMI.

Course Objectives

This course is designed to introduce the student to the main features of HMI. This course is designed to provide you with the skills needed to create a human-machine interface (HMI) automation project used to control and monitor an operation station.

Upon completion of this course, the trainee will be able to:

- Identify and understand how to create HMI screens
- Correctly configure HMI
- Understand Control Program
- Correctly create and monitor alarms and activities
- Identify HMI station
- Define adding graphic displays
- Demonstrate creating and running parameter files
- Identify how to create operator objects
- Understand how to configure HMI messages
- Creating HMI Projects

Cost: \$1,495

Dates: 6/24/24 – 6/28/24

Monday - Friday

7:30 am - 4:00 pm

Lunch provided

***Min 6/Max 12**

AutoCAD

Course Overview

This introductory, thirty-two-hour course is designed to provide an understanding and use of Autodesk's AutoCAD program, and to guide a participant in becoming proficient in basic two-dimensional architectural and mechanical design. This course will take those with little or no previous experience with AutoCAD through the basics of the software's user-interface, file generation and sharing, tools, and commands. Participants will be instructed on the procedures and use of the Cartesian coordinate system, object "Layers", "Draw", and "Modify" commands to create accurate 2-D geometric objects. Participants will learn the standards for dimensioning, tolerances, and scale to create detailed drawings.

Course Objectives

- Describe the methods and procedures used in computer-aided design
- Understand and navigate the screen layout and user interface
- Use and explore the dialog boxes, help, toolbars, and the command line
- Create, open, modify, and save drawings
- Understand and use the Cartesian Coordinate System to create accurate line objects
- Generate and modify drawing settings and templates
- Create title blocks and insert text
- Understand and use layers, modify object properties, and make prints
- Create accurate geometric objects; lines, circles, arcs, polygons, fillets, and chamfers
- Create and manipulate drawing blocks
- Accurately dimension geometric objects, add text and drawing information
- Plan and create efficient two-dimensional object details and communicate accurate information
- Access accurate and reliable resources

Cost: \$1,025

TBD

Monday - Thursday

7:30 am - 4:00 pm

Lunch provided

***Min 6/Max 12**

Fluid Power -Hydraulic/Pneumatic Controls

Course Overview

This forty-hour (40 hr.) course is designed to provide the basic skills in Air/Fluid Power. The course provides an understanding of air/fluid power symbols, and basic components of fluid power systems including basic laws and formulas for fluid power calculations. Course topics include pumps, control valves, actuators, and maintenance procedures of air/fluid power systems.

Course Objectives

Upon completion of this module, the trainee will be able to:

- Define and understand basic laws of energy and motion
- Define and understand basic laws of force, pressure, area, and volume, including Pascal's law, Bernoulli's law, and Boyle's law
- Interpret ANSI symbols and drawings to explain the functions of specific fluid power systems
- Describe the operation of pneumatic/hydraulic cylinders
- Describe the operation of a solenoid-controlled directional control valve (DCV)
- Describe the function of a tee and cross
- Correctly read pneumatic and hydraulic pressure gauges
- Troubleshoot pneumatic/hydraulic valves
- Troubleshoot cylinders
- Troubleshoot hoses and tubing
- Adjust pressures and flows mechanically
- Maintain fluid levels for hydraulic systems
- Replace filters on hydraulic/pneumatic systems
- Explain common circuit applications
- Maintain vacuum system on pneumatic equipment
- Maintain filtration systems
- Adjust controls on hydraulic/pneumatic systems
- Describe a hydraulic motor
- Define dirt holding capacity (DHC) in a filter

Cost: \$1,495

Dates: 5/6/24 – 5/10/24

Monday - Friday

7:30 am - 4:00 pm

Lunch provided

***Min 6/Max 10**

MIG Welding Bootcamp

Course Overview

This Twenty-four-hour training course will familiarize the student with the basic principles of GMAW (Gas Metal Arc Welding), using a MIG welder. The course will provide basic skills using the MIG welder on mild steel and positions. The bootcamp incorporates both lecture and hands-on exercises. The length of the course is designed to familiarize existing welders to MIG Welding and improve their welding skills.

Course Objectives

- Understand and practice welding safety
- Perform a safety inspection on the equipment
- Demonstrate an understanding of GMAW equipment
- Properly set up equipment to perform a weld
- Understand power sources and settings for making a MIG weld including voltage and amperage settings
- Understand weld wire part numbers and identify describe weld wires by their part numbers
- Determine correct wire to use based on the situation
- Understand the purpose and use of shielding gases
- Identify common welding problems and their causes
- Demonstrate an understanding of welding principles, procedures, technique, and application
- Properly perform a weld in the flat position
- Properly perform a horizontal weld
- Properly perform a vertical weld
- Practice, practice, practice...

Cost: \$725

Dates: 1/9/24 – 1/11/24

Tuesday - Thursday

7:30 am - 4:00 pm

Lunch Provided

***Min 5/Max 10**

TIG Welding Bootcamp

Course Overview

The GTAW welding course will familiarize the student with the basic principles of inert gas welding using TIG welder. The course will provide basic skills using TIG welder on mild steel and variety of positions. This twenty-four-hour course incorporates lecture and hands-on exercises.

Course Outline

- **Welding Safety**
 - GTAW Welding Safety
 - General Safety Tips
 - Safety Inspection
 - Lab Exercises
- **GTAW Welding Equipment**
 - GTAW Welding Equipment
 - GTAW Welding Equipment Setup
 - GTAW Power Sources
 - Lab Exercises
- **GTAW Welding Setup**
 - Welding Techniques and Applications
 - Getting Started and Preparation
 - Common Problems
 - Techniques
 - Lab Exercises
- **GTAW Welding**
 - Welding Principles and Procedures
 - Joints in Flat Position
 - Joints in Horizontal Position
 - Lab Exercises
 - Practice, practice, practice
 - Inspection for proper AWS weld procedures

Cost: \$725

Dates: 1/30/24 – 2/1/24

Tuesday - Thursday

7:30 am - 4:00 pm

Lunch Provided

***Min 5/Max 10**

Electrical Fundamentals

Course Overview

This forty-hour (40 hr.) training course covers the basics of AC (Alternating Current) and DC (Direct Current) theory and fundamentals. The participant will first gain an understanding of the concepts of electrical schematics, components, voltage, current, and resistance. These fundamentals will be applied through Ohm's Law to basic circuit design and analysis. Power, magnetism, and DC generation will then be introduced to complete the theories of DC applications.

Course Objectives

Upon completion of this course, the participant will:

- Understand the theory and applications of electrical and electronics as it applies to a broad base of technologies
- Understand what electricity is; learn Ohm's Law
- Understand the structure of matter and semiconductor theory
- Understand how to operate a digital multi-meter, power supplies, and scope meter
- Know the difference between conductors and insulators
- Know how to identify a short or an open
- Measure current, voltage, and resistance
- Construct series, parallel, and series parallel circuits
- Understand how to operate an AC/DC power supply
- Understand remote operations of a servo motor
- Study magnetic fields
- Understand capacitance and inductance
- Study transformer action and AC Phasing characteristics
- Set up and test Inductive, Capacitive, and Optical Proximity Sensors
- Study Reed and Synchronizing Switches

Cost: \$1,495

Dates: 2/26/24 – 3/8/24

(10 mornings) Mon-Fri

7:30 am - 11:30 am

Or

Dates: 2/26/24 – 3/8/24

12:30 pm – 4:30 pm

(10 Afternoons) Mon-Fri

Or

Dates: 4/22/24 – 4/26/24

7:30 am – 4:00 pm

Mon-Fri

(Lunch provided)

***Min 6/Max 12**

AC/DC Motor Controls and Drives

Course Overview

This forty-hour (40 hr.) training is designed to provide the basic skills in AC/DC motors and motor control. It also provides an understanding of the operation of AC and DC motors and motor control circuits. Training topics include AC/DC motor operations, control circuit components, motor control wiring, connections, ladder diagrams, and interpretation of electronic motor control schematics.

Course Objectives

Upon completion of this training, the participants will understand the theory and operation of various types of electrical AC/DC motors, principles, and devices involved in industrial control of motors. Participants will also develop the skills necessary for wiring basic motor controls while gaining an understanding of control devices, safety components, and electrical motor control circuits.

Upon completion of this training, the participant will be able to:

- Explain the theory of operation for typical AC Motors
- Describe how a rotating magnetic field is developed in a 3-phase AC motor
- Describe the operations of a synchronous motor
- Describe how torque is developed in 3-phase and single-phase AC motors
- Explain the information found on the motor AC and DC nameplates
- Identify DC motor components
- Describe variable speed motors
- Describe control circuit components
- Differentiate manual to automatic control operation
- Identify pilot devices both physically and schematically and describe their operating principles
- Interpret motor control wiring, connection, and ladder diagrams.
- Identify contactors and relays both physically and schematically; and describe their operating principles
- Select timing relays for use in specific electrical motor control systems
- Identify control components to use for motor control circuit
- Troubleshoot motor control circuit using electrical troubleshooting skills

Cost: \$1,495

Dates: 4/29/24 – 5/3/24

Monday - Friday

7:30 am - 4:00 pm

Lunch Provided

***Min 6/Max 12**

Electrical Schematic Print Reading

Course Overview

This twenty-four-hour training course covers the basics of safely understanding electricity. The student will first gain an understanding of the safety and concepts of reading electrical schematics, electrical components, voltage, current and resistance. These fundamentals will be applied to an understanding of how to safely operate a digital multi-meter, power supplies and scope meter while understanding NFP70E codes.

Course Objectives

- Describe basic characteristics and hazards of electricity.
- Describe safety related electrical work practices.
- Describe electrical system safeguards.
- Understand what electricity is
- Learn how to operate a digital multi-meter, power supplies and scope meter safety
- Perform basic electrical print reading NEC and IEC
- Know the difference between conductors and insulators
- Know how to identify a short or an open
- Measure current, voltage and resistance
- Understand NFP70E codes
- This class can be personalized by the company adding some of their specific schematics into the training day (company would need to provide electronic files of schematics)

Cost: \$850

TBD

Monday - Wednesday

7:30 am - 4:00 pm

Lunch Provided

***Min 5/Max 12**

Panel Build Technician

Course Overview

In this four-day (32 hour) class is designed around an individual that has some knowledge of multimeter usage and has some identification with basic electrical components. Schematic symbols will be introduced as they appear on wiring diagrams. Pictures as well as illustrations of typical control devices will be introduced along with associated equipment & hardware. The student will build a very basic circuit on a simulated panel board using a schematic. The student will troubleshoot any errors made in the build process and any problems introduced by the instructor. Control panel standards along with wiring techniques will be implemented in classroom assignments. NEMA, CSA & IEC standards will be introduced along with applicable National Electrical Codes. Relay logic control circuits will also be constructed from diagrams of actual circuits found in today's machine control. Some of these circuits include start-stop, limits, control, safety, and holding.

Course Objectives

Upon completion, the trainee will be able to:

- Describe basic characteristics of the panel build process
- Perform basic electrical print reading activities
- Understand wiring to a schematic diagram
- Know how to construct terminations using ferrules
- Know how to identify a short from an open circuit
- Understand how to complete pin-to-pin circuit connections
- Know how to check circuits along the panel build process
- Understand how to navigate control circuit diagrams
- Know terminal Identifications and exceptions to the rule

Prerequisites: Experience with basic wiring, hand tools, and DVM meter usage

Cost: \$1,200

TBD

Monday - Thursday

7:30 am - 4:00 pm

Lunch Provided

***Min 5/Max 12**

Blueprint Reading (Manufacturing)

Course Overview

This sixteen-hour course will provide students the basic skills needed for understanding the language of technical drawings or blueprints.

Course Objectives

Upon completion of this module, participants will be able to accomplish the following:

- Understand technical drawing symbology
- Understand how to interpret a technical drawing
- Understand title blocks, notes, and revision identification
- Understand object, hidden, center, extension, and dimension lines
- Define projection and other line combinations
- Understand three view drawings
- Understand orthographic projection
- Understand the arrangement of views
- Understand size and location dimensions
- Understand dimensions for holes and angles
- GD&T dimensioning
- How to calculate tolerance zones
- Understand sections
- Read and interpret blueprints
- Understand notes and symbols
- Effectively interpret detailed drawings

Assessments:

Pre and post assessments may be included as part of class

Cost: \$475

Dates: 3/11/24 – 3/12/24

Monday – Tuesday

7:30 am – 4:00 pm

Lunch provided

***Min 6/Max 15**

Basic GD&T – Geometric Dimensioning and Tolerances

(prerequisite of Blueprint basics or equivalent)

Course Overview

This sixteen-hour course will provide students with a fundamental understanding of Geometric Dimensioning and Tolerancing (GD&T).

Course Objectives

Upon completion of this module, participants will be able to accomplish the following:

- Describe geometric dimensioning and tolerancing
- Define a datum and its use
- Identify material condition symbols
- Define position controls
- Identify two main types of runout
- Identify profile control types
- Understand Orientation
- Define Location Tolerances
- Understand tolerances of Form and Profile
- Perform Print Exercises

Assessments:

Pre- and post-assessments may be included as part of the class.

Cost: \$475

Dates: 3/13/24 - 3/14/24

Wednesday – Thursday

7:30 am – 4:00 pm

Lunch provided

***Min 6/Max 15**

Fundamentals of GD&T – GDT102

Course Overview

This twenty-four-hour course is designed to assist the users of engineering drawings that contain GD&T symbols and terms. This course is an excellent starting point for engineers and quality operations new to GD&T and is highly recommended as a refresher course for those with limited past formal training.

Course Objectives

The course contains the following subject information:

- Background on dimensional standards
- WHY and WHEN to use GD&T
- Definition of term and symbols
- General rules of the ASME Y14.5 national standards
- Material condition modifiers
- The datum reference frame
- Tolerances of form
- Tolerances of orientation
- Positional tolerancing
- Controlling feature coaxiality
- Controlling compound surfaces

Software/text: *GeoTol Pro Fundamentals Workbook included.*

Assessments:

Pre and post-assessments may be included as part of class

Cost: \$1400

Dates: TBD as Needed

Monday, 8:00 am - 12:30 pm

Tuesday - Thursday, 7:30 am - 12:30 pm

Friday, 7:30 am - 12:00 pm

***Min 7/Max 12**

Electronic Sensors

Course Overview

This 3-day (24 hour) class introduces the student to the newest and the most important electronic automation, must know technology of today, and the future. The student will be introduced to the many types and boundary ranges of sensors. Adjusting and alignment of sensors where needed will be included in the coursework. Sinking and sourcing explanations along with NPN and PNP types of sensors are included in the class. Interfacing sensors with PLC inputs and troubleshooting field wiring will also be covered. The coursework is 50% hands-on where the student will investigate the logic that is outputted from different types of sensors. Imbedded in all labs will be terms, schematic symbols, and methods of bench testing a wide range of sensors. Videos will be included in the curriculum to enhance the learning experience of the participants.

Course Objectives

- Know how to assess if a sensor is defective or not
- Know how to replace a defective sensor
- Be able to access, calibrate, and adjust boundary ranges of sensors
- They will be able to identify logic input values from a sensor to a PLC input
- They will know how to use a DVM to troubleshoot sensor circuits
- They will be able to bench-test ***any*** type of sensor
- Be able to discuss IP67 Standards and its importance relating to sensors
- Identify types of sensors on a schematic diagram or Electrical Print
- Understand practical applications of a diverse type of electronic sensor
- Be able to intelligently pass sensor information on to others of bench testing a wide range of sensors.

Sensor “Hands On” Labs in this course will include the following Sensors:

- Capacitive Type Sensors
- Inductive Type Sensors
- Infrared Liquid Sensors
- Retro Reflective Sensors
- Ultrasonic Distance Sensors
- Through Beam Sensors
- Magnetic Sensors

Cost: \$925

TBD

7:30 am - 4:00 pm

***Min 5/Max 12**

EveryDay Leadership: For Frontline Employees

Course Overview

EveryDay Leadership is a series of four 4-hour interactive classes where leaders will learn current concepts and best practices. Robust tools are simple to learn and can be easily adapted to many applications. When tools are easy to remember, they are more likely to be used.

Everything we do is designed to make the learning stick. At the end of each class there will be an applied assignment to practice at work. Participants will practice skills in the class and give each other feedback.

EveryDay Leadership uses models and tools from proven resources.

These resources include:

- DiSC (Wiley)
- Five Behaviors of Functioning Teams (Lencioni)
- Q12 (Gallup)
- Situational Leadership (Blanchard)
- Active Listening (Blanchard)

Course Objectives

At the end of this program, the learner will know how to:

- Increase self-awareness so they know how they are perceived in the workplace
- Articulate and leverage their unique talents
- Describe the components of a communication model and explain their relevance to leadership
- Adapt their communication and modify non-verbals to meet others' needs
- Evaluate the team culture and how each team member contributes to team success 1 hour
- Develop a healthy, functional team environment
- Build high-trust relationships, especially with their team
- Know how to maximize employee engagement in their area and create a culture of engagement
- Set clear expectations and goals and make sure they are understood
- Blend in as a helpful part of the work environment
- Use active listening to enhance engagement
- Master the art of sharing feedback without raising defensiveness
- Know when and how to give feedback
- Know when to coach and the skills required to coach
- Know when and how to delegate
- Know when and how to use progressive discipline, including documentation
- Make performance reviews fair, consistent, and engaging
- Resolve employee conflict
- Write an action plan that uses this content to improve their personal performance

Cost: \$780

Dates: 2/12/24 – 2/15/24

Monday - Thursday

8:00 am - 12:00 pm

***Min 4/Max 24**

Coaching for Managers

Course Overview

Facilitating Short- and Long-Term Development is a series of two 4-hour interactive classes. The idea that managers can coach employees is not new. The development tool has been part of business jargon for at least 50 years. In 2007, Josh Bersin published a white paper entitled, [Coaching: An Imperative for Leaders](#). In 2019, Gallup confirmed that coaching is not going away. In their book, *It's the Manager*, social scientists at Gallup concluded 20 years of research, finding that the key to employee engagement is employee development. The editors at Gallup get right to the point: employees want to be coached and they want their manager to be the coach.

This course fills a gap in the marketplace for an applied, real-world coaching course. At the end of 4 half-day sessions, managers will be able to apply coaching techniques:

- in a 5-minute impromptu discussion to improve skills;
- in a 15-minute conversation that resolves conflict;
- when collaborating to write an employee's development plan; and
- in a one-on-one meeting that addresses progress on that development plan.

This course will develop and synthesize the skills participants will need to facilitate all four of these meetings.

Course Objectives

At the end of this course, learners will:

- Describe the expectations of Millennials and GenZ in the workforce
- Identify the gaps between those expectations and our typical behaviors
- Define core coaching skills and a standard coaching model
- Write a personal professional development plan to adapt the Coach Approach to Leadership
- Receive group coaching from the course facilitator to identify how the daily routine described in Objective 4 improves their culture of engagement
- Manage their time so the Action Plan is complete when time elapses

Cost: \$450

Dates: 2/6/24 – 2/7/24

Tuesday - Wednesday

8:00 am - 12:00 pm

***Min 4/Max 24**

Metrology

Course Overview

This eight-hour course provides the participant with the basic skills in understanding the sciences of measurements that are used in Manufacturing.

Course Objectives

Upon completion of this module, participants will be able to accomplish the following:

- Understand measuring instruments and their uses
- Understand scales and tape measures, and reading inch, decimal, and metric units
- Define measurement procedure for using depth micrometer
- Understand measurements using calipers, digital, and Vernier calipers
- Understand dial indicators and their uses

Cost: \$350

Date: 3/15/24

Friday

7:30 am - 4:00 pm

Lunch provided

***Min 7/Max 15**

A3 for Problem Solving

Course Overview

This 8-hour A3 Problem Solving course is an activity based, pencil and paper tool designed to solve specific problems. It defines the current condition and looks at the root cause of the issue. The A3 also guides the user to define clear steps to implement changes and builds accountability. Participants will experience a simple and effective way to understand the way work happens now and how it can be redesigned effectively.

Course Objectives

As a result of this workshop participants should be able to:

- Explain why continuous improvement is needed and why it is easier said than done
- How to collect and use meaningful data
- List advantages of A3 Problem Solving and describe how it is used to eliminate waste and reduce variation
- Distinguish between value-added and non-value-added activities
- Apply A3 thinking along with basic quality tools (cause & effect, multi-voting, value stream mapping, process flow, pictograph, Pareto, run chart, 5-why, 3L5W, scatter diagram, histogram, etc.) to solve actual work-related problems

Cost: \$425

Date: 2/26/2024

Monday

7:30 am - 4:00 pm

Lunch provided

***Min 5/Max 12**

FANUC Robotics Operation & Programing Core Class

Course Overview

This forty-hour (40 hr.) course is designed to provide the basic skills needed to operate and program the FANUC or ABB Robots. Course topics include robotic safety, controls, operations, and part programming.

Course Objectives

- Control positions (base, tool, or joint coordinate systems with multiple axes systems)
- Configure I/O, system variables and perform setup
- Label programs
- Configure style table
- Identify function of the robot, teach pendant or controller
- Save, restore, and back up download and upload software
- Understand interpolation operation of robot (linear, circular, joint, speed, accuracy, etc.)
- Define robot motion attributes (speed, accuracy to destination, interpolation)
- Perform robot mastering at zero position and single axis
- Perform robot calibration and test robot for proper master and calibration
- Properly verify and or define tool center Point (TCP)
- Set up or verify software limits, issues relating to new software limit setting program
- Understand program for style options
- Program/modify function conditions (weld, paint, etc.)
- Locate robot inputs and outputs screen to determine the status of the system or equipment

Core

Cost: \$1,445

Dates: 4/1/24 – 4/12/24

(10 afternoons)

12:30 pm – 4:30 pm

Or

Dates: 6/3/24 – 6/7/24 Monday

– Friday

7:30 am – 4:00 pm

Lunch provided

*Min 5/Max 10

FANUC Robotics Operation & Programing Advanced Class

Course Overview

This forty-hour course is designed to provide advanced skills for operating and programming Fanuc Robots.

Course topics include:

- collision guard, condition monitor function, multi-tasking, program shift utility and systems operations.
- The course provides both classroom and hands-on training in the use of advanced controls, operations, and part programming.

Advanced

Cost: \$1,445

Dates: 6/10/24 – 6/14/24

7:30 am - 4:00 pm

Monday - Friday

Lunch provided

*Min 5/Max 10

FANUC Robotics Mechanical

Course Overview

This forty-hour (40 hr.) class is designed to train all students on robot mechanical equipment, hand tools, and rigging in a safe manner. All with the proper applications of lock-out procedures for a cell in the plant. This course will increase the tradesmen's versatility in the plant or field.

Course Objectives

Upon completion of this course, the participant will be able to:

- Disassemble a robot and replace all components
- Correct rigging
- Bolt torque specs.
- Preventative maintenance of robot
- Troubleshoot mechanical systems
- Master a robot
- Safety related with team player

Daily Activities

Day 1

- Pre-test/ Complete review of each question/robot safety/cell lock procedure/review planetary and pinion gears

Day 2

- Floor safety/ robot cell review/troubleshooting robot systems. Tool operation and safety equipment/pre-meet (team) on daily disassembly/start removing tool and wrist, forearm.

Day 3

- Safety-Pre-review on schedule of next components (axis#3 /electrical cable/forearm/axis #1/2/3 motor's) and review pinion and planetary gears

Day 4

- Safety-Review on prior day/schedule of next step of disassemble/reassembly of components/torque wrench and bolt spec. and fasteners

Day 5

- Every morning review, safety/complete reassembly/procedure to remove all safety locks/install fault for team for troubleshooting/master robot controls/verify all functions of robot/post-test and review.

Cost: \$1695

Dates: 4/15/24 - 4/19/24

Monday - Friday

7:30 am - 4:00 pm

Or

Dates: 6/24/24 - 6/28/24

Monday - Friday

7:30 am - 4:00 pm

Lunch provided

***Min 5/Max 8**

FANUC Electrical Maintenance and Troubleshooting

Course Overview

This forty-hour (40 hr.) course is designed to provide the basic skills needed to troubleshoot electrical repair and maintenance procedures of robotic electrical systems. Course topics include robot electrical component identification and the function of robot electrical controllers.

Course Objectives

- Follow safety guidelines, and demonstrate the use of emergency stops and servo disconnects
- Properly power down and power up the controller and demonstrate basic fault recovery
- Perform robot mastering at zero position and single-axis
- Save, restore, and backup software
- Locate robot inputs and outputs screen to determine status of system or equipment
- Identify common electrical component issues
- Connect and troubleshoot internal robot communication cables between all components of the robot system
- Connect, configure, and troubleshoot end effector and tooling I/O
- Identify the functions of the controller following components and robot electrical drawings
- Use of position screen, alarms screen, status screens, LEDs, and indicators for troubleshooting
- Troubleshooting robot communications, Fanuc block I/O modules, communications
- Utilization of the UOP inputs and outputs to determine if problems are actual cell or robot faults
- Utilization of input and output screens for troubleshooting

Cost: \$1695

Dates: 6/17/24 – 6/21/24

Monday - Friday

7:30 am - 4:00 pm

Lunch provided

***Min 5/Max 10**

Lean Applied

Course Overview

Lean Applied is a two-day (16-hr.) activity-based course to learn and apply systematic methodology to identify and eliminate waste within a process to improve the flow or velocity of the outputs. Participants can expect to be fully engaged while learning and applying a breakthrough strategy based on the Theory of Constraints to improve a company's overall throughput. Through activities, case studies, and simulations participants will experience how flow is achieved through balance of work.

Objectives

As a result of this course, participants should be able to:

- Review and document existing process workflows
- Create value stream maps or functional flow charts
- Identify non-value-added process steps and activities
- Describe how to identify bottlenecks in their organization
- Describe the five steps of the Theory of Constraints (Identify, Exploit, Subordinate, Elevate, go back to step 1)
- Lead kaizen/rapid improvement events
- Develop an improvement plan specific to their organization to improve workflow

Cost: \$640

Dates: 4/29/24 - 4/30/24

Monday - Tuesday

7:30 am - 4:00 pm

Lunch provided

***Min 5/Max 10**

Project Management for the Non-Project Manager

Course Overview

This two-day (16 hr.) course teaches the mechanics of effective project management, how to get people onboard, better utilize their skills and achieve successful results. Participants can expect to be fully engaged while learning and applying a step by step approach to help reduce the risk and uncertainty associated with project completion.

Course Objectives

- Define and describe common project management terminology
- Use a step-by-step process to manage projects faster while using fewer resources
- Describe the five process groups and nine knowledge areas as defined by the Project Management Institute
- Avoid common pitfalls and mistakes in managing projects
- Apply practical project management tools and techniques

Outline:

Projects, project management, and project managers

The five process groups and nine knowledge areas as defined by the Project Management Institute (PMI)

The triple constraint

Initiating

- Business case, Project charter, Final deliverables and acceptance criteria, Project scope, Stakeholders, Resources

Planning

- Interim deliverables, Project boundaries, Work breakdown structure, Project risks, Project schedule and milestones, Communication plan, RACI chart

Execution

- Resolving conflict, managing change, Monitoring and controlling

Closeout

- Customer and sponsor satisfaction, Lessons learned, Closeout report

Cost: \$625

Dates: 4/1/24 - 4/2/24

Monday - Tuesday

7:30 am – 4:00 pm

Lunch provided

***Min 4/Max 15**

5S & Visual Management

Course Overview

5S & Visual Management is a one-day (8-hour) activity-based course to improve workplace organization and translate processes and production statuses into easy-to-understand visual overviews. With one glance, the whole team can locate needed items and get an understanding of a factory's performance. This course teaches a set of techniques that make 5S and operation standards visible so that people can follow them more easily. These techniques expose waste so that it can be prevented and eliminated. 5S & visual management is also an essential part of a Lean management system, which uses displays, metrics, and controls to help establish and maintain continuous flow. Visual tools reinforce standards, and help people detect abnormalities at a glance.

Course Objectives

As a result of this course, participants should be able to:

- Explain why 5S & Visual Management is an integral part of Lean transformation
- Apply the five principles of 5S (Sort, Straighten, Shine, Standardize, and Sustain)
- Apply the four principles of Visual Management (Defines the standard condition, Highlights problems, creates alignment, Drives action & learning)
- Utilize a variety of visual tools such as red-tagging, activity boards, A3 storyboards, poka-yoke, one-point lessons, standard work, Kanban, value stream mapping, etc...
- Gain knowledge on how to apply visual tools to add structure and stability to 5S and operations, reducing variation and increasing efficiency.
- Compare & contrast visual display, visual metrics, and visual control

Cost: \$625

Date: 3/13/24

Wednesday

7:30 am - 4:00 pm

Lunch Provided

***Min 4/Max 15**

Value Stream Mapping

Course Overview

Value Stream Mapping is an activity-based two-day (24hr) course intended to teach and apply value stream mapping in a manufacturing or administrative setting. Value Stream Mapping is a process that captures both the flow of a product/service and the flow of information in a value stream. It is used as a planning technique as a means to link all Lean initiatives together into a meaningful and manageable plan for improvement.

Course Objectives

As a result of this workshop participants should be able to:

- Describe value and explain how the elimination of waste contributes to patient safety and satisfaction
- Distinguish between value-added and non-value-added activities
- Complete a current state value stream map on an actual work-related process
- Apply Lean principles to prepare a future state value stream map
- Prepare and present a value stream plan

Cost: \$625

Dates: 3/18/24 - 3/19/24

Monday - Tuesday

7:30 am - 4:00 pm

Lunch Provided

***Min 6/Max 15**

Certified Six Sigma Greenbelt

Course Overview

This five-day (40 hr.) course is for individuals preparing for the American Society for Quality (ASQ) Certified Six Sigma Greenbelt exam (CSSGB) and is based on the CSSGB Body of Knowledge. It is intended to teach a structured approach to improve the quality of products & services, outcomes, and the bottom line by identifying and removing the causes of defects (errors), minimizing variability, and improving workflow in business processes. Participants can expect to be fully engaged while learning and applying principles, tools, and techniques for completing breakthrough improvement projects. Participants are also expected to complete a work-related project as part of this course.

Course Objectives

As a result of this course, participants should be able to:

- Define the DMAIC process and explain how it is used to reduce variation and improve quality
- Define a Six Sigma project opportunity.
- Measure a process utilizing Six Sigma techniques.
- Analyze measurement results utilizing basic statistical concepts.
- Apply Six Sigma techniques in the course of performance improvement work.
- Transition successful project outcomes to managers that will take on responsibility for monitoring and controlling process performance

Course topics include, but are not limited to:

- Six Sigma overview
- Project selection for Green Belts
- Project team selection
- Project and team management tools and parameters
- Project definition
- Full project charter development
- Process mapping
- Project measurement criteria
- Introduction to analysis of measurement results
- Introduction to statistics software
- Project scoping
- Understanding customer requirements (CTQs)
- Supplier-Input-Process-Output-Customer (SIPOC)
- Variation – common versus special cause
- Measurement systems analysis
- Hypothesis testing
- Process analysis
- Introductory analysis discussion
- Correlation and regression
- Analysis of variance (ANOVA)
- Piloting and implementation
- Statistical process control
- Pre-control
- Control plans
- Mistake proofing
- Green Belt project
- DMAIC roadmap
- Improvement plans and techniques
- Cultural assessment tool review
- Control strategies
- Transition of improvements to management oversight

Cost: \$1,125

Dates: 5/13/24, 5/28/24, 6/10/24, 6/24/24, 7/8/24

7:30 am - 4:00 pm

Lunch Provided

***Min 6/Max 15**

Learning to See – Eliminating Waste in the Workplace

Course Overview

Learning to See – Eliminating Waste in the Workplace is a sixteen-hour (2-day) course intended to provide a structured approach to identifying and eliminating waste. Participants will learn DOWNTIME (defects, overproduction, waiting, not using our talent, inventory, motion, and extra processing) through a series of activities, case studies and simulations. They can expect to be fully engaged while being given real life scenarios where they must identify the specific types of waste present and how solving the problem or implementing an opportunity eliminates waste.

Course Objectives

As a result of this workshop, participants should be able to:

- Compare and contrast work, incidental work and waste
- Provide numerous examples of each of the eight types of waste typically found in the workplace
- Explain how overburden on people and equipment is reduced by eliminating waste and reducing variation
- Describe A3 problem-solving and explain how it is used to eliminate waste
- Define “2 Second Lean” and describe how it is used to get everyone involved in eliminating waste on an ongoing basis

Cost: \$625

Dates: 4/15/24 & 4/16/24

Monday - Tuesday

7:30 am - 4:00 pm

Lunch Provided

***Min 4/Max 15**

Measurement Systems Analysis (MSA)

Determining Measurement Uncertainty through Measurement Systems Analysis (MSA)

Course Overview

8-hrs (1 day) course

Every measurement is subject to some uncertainty. A measurement result is only complete if it is accompanied by a statement of the uncertainty in the measurement. Measurement uncertainties can come from the measuring instrument, from the item being measured, from the environment, from the operator, and from other sources. Such uncertainties can be estimated using statistical analysis of a set of measurements and other kinds of information about the measurement process. This one-day activity-based workshop will teach how to determine and reduce overall measurement uncertainty. Participants can expect to be fully engaged while learning a process approach to identify the amount of variation associated with a measurement system and discover the sources of variation so improvements can be made to improve the overall integrity of the data. Simulations, case studies, and a series of activities will be used to learn and apply tools and techniques associated with MSA.

Course Objectives

As a result of this workshop participants should be able to:

- Define terms associated with measurement uncertainty
- Apply a process approach to determine measurement uncertainty
- Describe attribute and variable data and explain how MSA is applied to both
- Describe and apply techniques used to reduce measurement system variation (gage R&R, attribute agreement analysis)
- Plan, conduct, and report on a gage R&R
- Plan, conduct, and report on an attribute agreement analysis

Cost: \$375

Dates: 5/7/24

Tuesday

7:30 am - 4:00 pm

Lunch Provided

***Min 4/Max 15**

Fundamentals of Statistical Process Control

Course Overview

Statistical Process Control is a 1-day (8-hr.) activity-based course to teach fundamentals of process control and the role it plays in improving the consistency of products and processes. Participants will use a series of activities to learn and apply principles, tools and techniques associated with process control.

Objectives

As a result of this workshop participants should be able to:

- Define terms associated with SPC
- Describe attribute and variable data and give examples of each
- Monitor and control processes using both attribute and variable control charts
- Compare & contrast control versus capable
- Describe basic capability concepts and the importance of capability when using control charts
- Explain the importance of effective measurement systems to ensure meaningful SPC data

Who should attend...

- Team members
- Team leaders
- Mid-level managers
- Engineers
- Anyone in the organization who participates with improvement teams

Cost: \$375

Dates: 5/8/24

Wednesday

7:30 am - 4:00 pm

Lunch Provided

***Min 4/Max 15**

Implicit Bias Training

Course Overview

The Michigan Public Health Code (Rule 338.7001(c)) effective June 1, 2022, requires all licensed and registered healthcare professionals to train on Implicit Bias as a condition for initial licensure/registration and renewals.

This course is great for any organization seeking to understand biases in our organization as well and strive to eliminate them.

Implicit (subconscious) bias refers to the attitudes or stereotypes that affect our understanding, actions, and decisions in an unconscious manner.

Interactive class topics will include:

- Define the concept of implicit bias
- Reflect on personal and professional biases
- Understand the impact implicit biases present in healthcare
- Define strategies to mitigate the negative impact of implicit bias
- This training provides a certificate from Thompson M-TEC to validate participation.

Qualifies for up to 4 hours of State Continuing Education Clock Hours (SCECHs).

Cost: \$115

Dates: 2/8/2024 or 4/11/24

Thursday

8:00 am - 12:00 pm

Location: Thompson M-TEC Main Campus

***Classes will run as scheduled based on meeting the minimum student enrollment**