skillPoint™

ATS TECHNICAL TRAINING SOLUTIONS

Course Catalog

The Ultimate Training Solution:

Comprehensive, Customizable and Convenient

SkillPoint™ Technical Training from Advanced Technology Services (ATS) provides a flexible solution to your maintenance training needs.

With offerings ranging from introductory wiring to advanced PLC networks, SkillPoint has a full line of online and hands-on programs.

- Assessment | Our process helps you validate skill gaps and then identify where to start and how to best invest in employee development.
- Consultation | SkillPoint assessment findings are used to customize a flexible training strategy that addresses your organization's needs.
- Online Courses | Develop a solid foundation of knowledge so your staff gets the skills they need, and you get the best long-term results.
- Hands-On Courses | Eliminate travel costs by bringing training station equipment and a SkillPoint instructor to your operation. Courses are completely customizable and suited to your schedule.
- Results | Training can increase productivity, reduce equipment failures, develop technician independence, improve retention, and job satisfaction.
- Safety | Boost technician confidence and improve the overall safety of your facility. Training can save lives.

Assessment

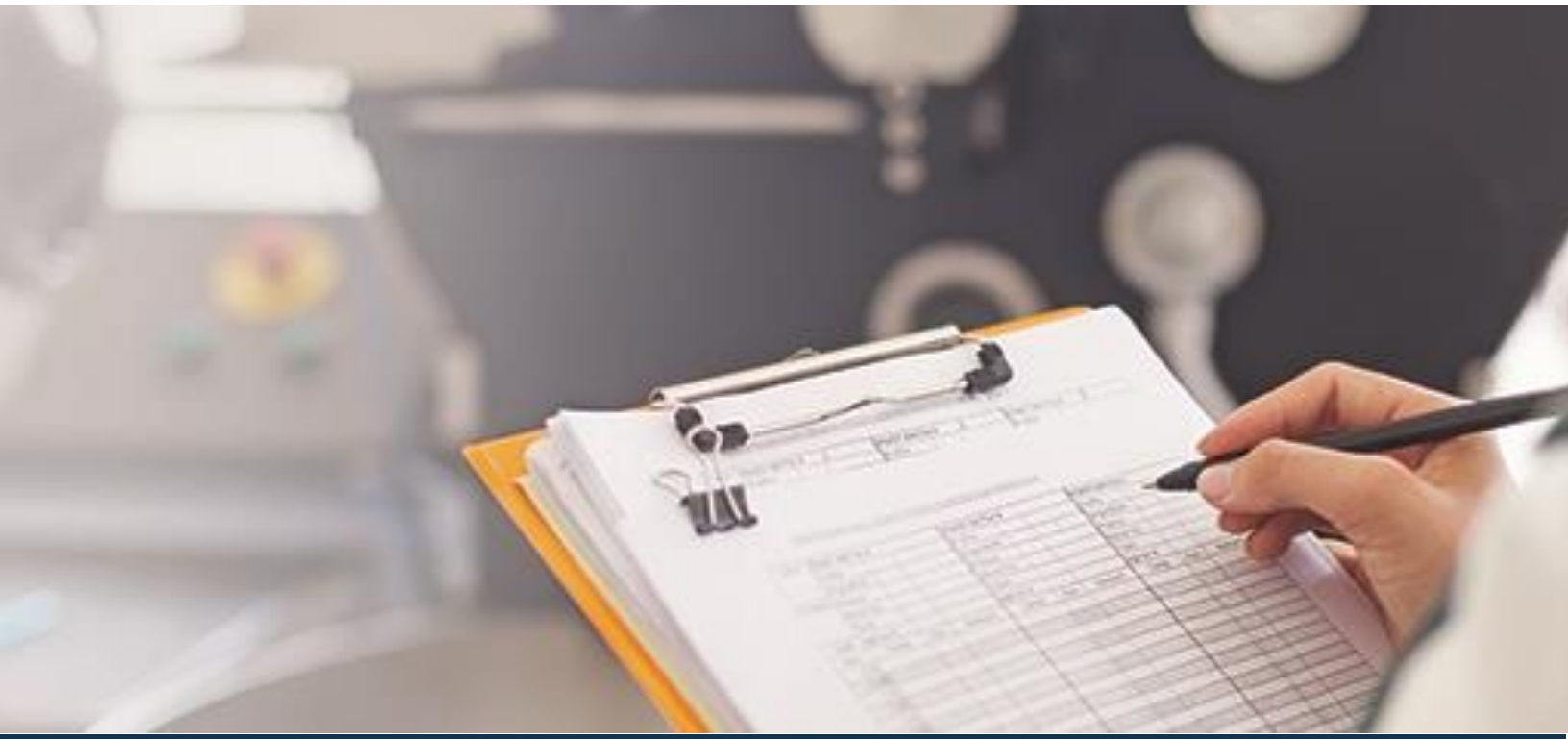
Find out where to start and how to best invest in employee development. Our validated gap analysis offers high level insight of organizational and individual needs.

SkillPoint Assessment: 160 question proctored exam for each technician

Site Tour: Plant, process, and equipment details for customized prescriptive solution

Interview Process: Discussion of pain points, key metrics, and interpretations of workforce

Understanding how to ‘move the dial’ through employee development is more complex than knowing your critical equipment list, identifying your leading contributors to downtime, and surveying the skills gap interpretations of your staff. To truly assess the training needs of your technical workers, SkillPoint assessment team members conduct low-pressure interviews with employees of all levels. These critical conversations provide the foundations for identifying root cause skills gaps, providing aid in the interpretation of overall assessment results.



Hands On Courses

Online Courses

HANDS-ON COURSES

Electrical/Electronic and Industrial Motor Drives

EL102-Wiring Simplified

The Wiring Simplified workshop is designed for general maintenance professionals, technicians, maintenance supervisors, and construction and maintenance electricians. Students learn how to practice electrically safe work habits, calculate circuit loads and select conductors, use a multi-meter to troubleshoot circuits, learn conduit bending basics and much more.

- Practice electrically safe work habits
- Apply National Electrical Code standards
- Describe electrical distribution component functions
- Calculate circuit loads and select conductors
- Select circuit protective devices
- Bend conduit
- Connect components to form electrical circuits
- Route conductors through raceways
- Use a multi-meter to troubleshoot circuits
- Repair minor circuit faults

Estimated class duration: 24 hours

EL103-Soldering Basics

The Soldering Basics class is an introductory course to help the maintenance technician be able to successfully understand and use of the tools, processes and applications involved with soldering. This course offers many laboratory exercises to help build expertise and confidence in becoming a novice in soldering.

- Practice soldering safe work habits
- History of soldering
- Understanding of components used in soldering
- Basic understanding of the chemistry that affects soldering
- Soldering Standards
- Laboratory exercises to develop hands-on skills for the technician

Estimated class duration: 16 hours

EL121-Electrical Controls & Components

A workshop designed for beginning electricians, equipment operators and people in skilled trades who are cross training from other disciplines. Students start by learning fundamental concepts of electricity and voltage then move on to the practical applications, units of measurement, circuits, components, ladder diagramming motors and more.

- Work safely with electricity
- Use a clamp-on meter to make AC current reading
- Read a resistor value from the color code
- Use simple math to calculate voltage drops, current and resistance
- Read single-line drawings
- Read control-circuit ladder diagrams
- Test relays, solenoids, contactors, switches, and motor starters
- Understand basic principles of AC and DC motors
- Use a multi-meter to make voltage and current readings
- Identify component parts in schematics and ladder diagrams

Estimated class duration: 28 hours

EL122-Electrical Troubleshooting, Relay Logic

An intensive hands-on training course intended for personnel who are required to perform general electrical maintenance on production and support equipment including various electrical control circuits and programmable logic controllers. This course covers a detailed review of electrical theory, component identification and operation, and use of digital electrical meters (DVOM). Understanding, implementing, and creating relay controls and relay logic are the primary learning objectives of this course, and are aligned to the migration of relay-controlled circuitry to Programmable Logic Controllers. This comprehensive electrical logic course is a must for any technician preparing to engage in PLC equipped equipment troubleshooting.

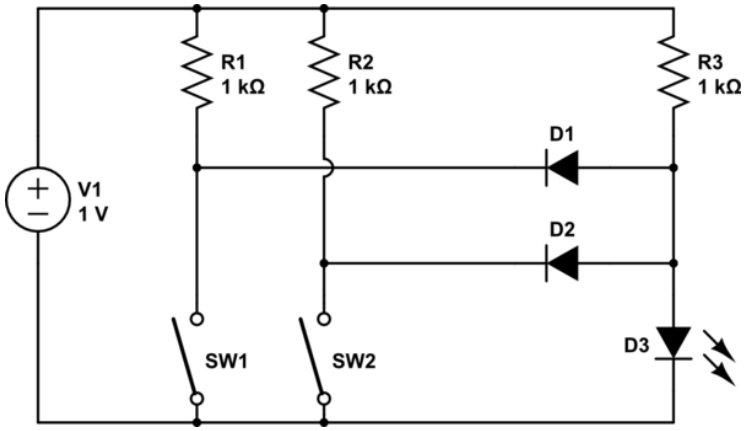
- Interpretation of ladder logic symbols and diagrams
- Understanding basic electrical troubleshooting theory
- Series and parallel circuit logic and diagnostics
- Ladder logic creation and diagramming
- Interpretation of electrical schematics and troubleshooting
- Development of motor starter circuits
- Creating ladder logic for relays, timers, and starters
- Safely troubleshoot live circuits (NFPA70E Arc-Flash)
- Use a meter (DVOM) in electrical troubleshooting
- PLC components and operation

Estimated class duration: 28 hours

EL132-Electrical Print Reading

A course designed for maintenance and skilled tradespersons who must be able to read prints for maintenance installation and troubleshooting applications.
Although the course heavily emphasizes electrical/electronic print reading, other types of prints are covered sufficiently to account for other areas participants may encounter on the job. Participants are encouraged to encompass real prints from their facilities enabling the interpretation of prints relative to their current role and allowing each student to exit the course with a better knowledge of the equipment operation.

- Read and interpret electrical/electronic drawings and prints
- Recognize electrical symbols used in industrial control, logic, electronic, and fluid-power drawings
- Use electrical prints to trace signal or power flow and to understand circuit operation
- Trace control operations through multiple-sheet drawings
- Recognize interfaces to fluid power, and other non-electrical systems



Estimated class duration: 16 hours

EL201-Industrial Electronics Maintenance

Take a step deeper into board level diagnostics through this course that provides maintenance electricians with many of the electronic fundamentals they need to maintain and troubleshoot industrial electronic equipment. This course is designed to aid in the understanding and troubleshooting of electronic system components when board level diagnostics are required. The understanding gained within this course enables electrical technicians to troubleshoot electronic component failures at a more complex level, allowing for root cause failure analysis and prevention of repeat failure.

- Efficiently and effectively identify which circuit board needs replaced or repaired
- Troubleshoot solid-state circuits
- Use oscilloscopes and multi-meters to trace signals
- Understand resistors, capacitors, inductors, diodes, SCR’s, TRIAC’s and other solid-state devices
- Safely work with electronic equipment, protecting people and equipment

Estimated class duration: 28 hours

EL235-Advanced Electrical Troubleshooting

This hands-on training course is intended for maintenance personnel who are required to perform advanced electrical maintenance on production and support equipment including various electrical circuits and programmable logic controllers. This course covers a quick review of EL122 (Electrical Troubleshooting – Relay Logic), AC/DC power supplies, AC/DC motor theory, Oscilloscope usage, and Megger usage. Techs will be involved with higher level electrical circuit troubleshooting and development, Power conversion from single phase to three phase, and NFPA70E safety.
EACH TECHNICIAN MUST HAVE THEIR OWN ARCH FLASH GEAR.

Advanced Electrical Troubleshooting

- Transforming Voltages
- 12V Power Supplies
- 24V Power Supplies
- AC/DC Motor Theory
- Differences in AC/DC Power Supplies
- Appropriate Oscilloscope usage
- Appropriate Megger usage
- Proximity switch usage and troubleshooting
- NFPA70E Safety

LABS

- Single phase to 3 phase power conversion
- Wiring advanced electrical circuits
- Advanced Troubleshooting circuit issues
- SLC 500 PLC I/O board configuration
- Upload/Downloading plc programs

Estimated class duration: 28 hours

EL355-Troubleshooting & Repair of AB Flex 70/700 Drives

Utilizing low horsepower Allen Bradley Flex 70 Enhanced variable frequency motor drives, configured as training units connected to operator stations and a live motor typical of industrial applications. The building blocks of the Flex 70/700 drives are explained along with methods for performing maintenance and troubleshooting: including parameters, meter and oscilloscope measurements, Communications modules, HIM utilization, and drive terminal interfaces.
While course focuses heavily on the AB Flex 70, the concepts in connectivity and troubleshooting transcend several drive operations principals of variable frequency drives with encoder feedback.

- Troubleshoot common Flex 70 drive malfunctions
- Program and read over 500 parameters
- Use Flex 70 fault codes to aid in troubleshooting
- Use Allen Bradley “Workbench” software to aid in troubleshooting
- Use encoder feedback functions necessary for programming and application

Estimated class duration: 28 hours

EL371-NFPA70E Electrical Safe Work Practices

Let SkillPoint bring our hands-on interactive NFPA70E Electrical Safe Work Practices training to your facility. We bring our instructor, code books and electrical training equipment to your site to train your team on your schedule. Our class focuses on how to utilize the standard and apply that knowledge. This class is available as a one-day refresher course, a two-day full content course or as an extension option for many of our hands-on classes.

- Electrical safe work practices
- Recognizing electrical hazards
- Emergency procedures
- OSHA requirements
- NFPA70E code updates
- Arc Flash / Arc Blast Shock / Electrocution
- Proper PPE use and inspection
- Lockout energy controls (LECP) procedures
- Multimeter safety

Estimated class duration: 8 or 16 hours

***MEETS SAFETY REGULATIONS**

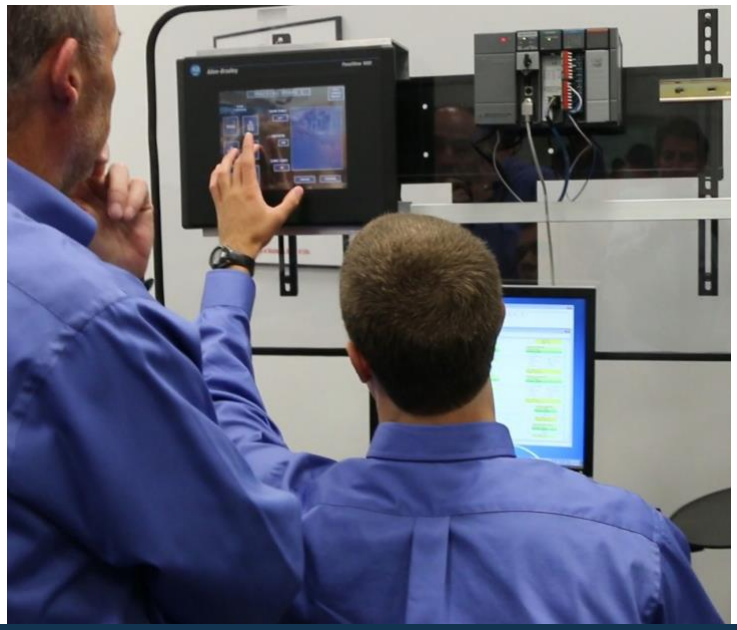
PLC

PLC202-PLC 5, 500 & 5000 Platforms

This hands-on training course is intended for maintenance personnel who are required to operate or perform maintenance on Programmable Logic Controllers including: PLC5, SLC500, ControlLogix 5000, CompactLogix and MicroLogix families. This course covers the basic operations and troubleshooting of PLC's, utilizing Rockwell RSLinx/Logix PC software as the main interface point. Activities include familiarization with Basic Electrical Fundamentals, Ladder Logic, PLC's, RS Software, Communications, and Troubleshooting.

- Basic electrical fundamentals
- Basic Electricity
- Series Circuits
- Parallel Circuits
- Ladder Logic
- Ladder Logic Symbols
- Electrical Schematics
- Motor Starter Circuits
- Creating Ladder Logic for Relays PC to PLC communications
- Rockwell RSLinx Software Driver Selection
- PC Com Port Selection
- PLC Fundamentals 1
- Going Online with RSLinx/Logix
- RSLinx/Logix Software Navigation
- Program Upload and Download
- Program Search Options
- PLC Tagging and Labeling
- Troubleshooting PLC Faults
- Troubleshooting with PLC Programs
- Troubleshooting I/O
- Programmable Logic Controllers
- PLC's - Brief History
- Current PLC's
- PLC Components & Operation
- Relay Ladder vs. PLC Ladder
- PLC Scan Time and Method Variances
- PLC5, SLC500, ControlLogix, CompactLogix, & MicroLogix Specifics

Estimated Class Duration: 28 Hours



PLC300-PLC Troubleshooting & Repair

This course provides the active participant with the skills necessary to use and troubleshoot the Siemens S7 PLC control system. The student will configure, assemble, write, edit, and monitor ladder or STL logic to execute specific program functions using a student workstation.

At the conclusion of this four-day course, the active student will be able to start developing a program, modify and troubleshoot an existing S7 PLC program by using the following skills:

- Configuring S7 software to communicate with S7 PLCs and use the offline simulation software.
- Configure the S7 PLC system hardware; CPUs, I/O modules, communication modules and Profibus network modules.
- Use S7 software to locate I/O module bits, internal memory locations, timers, counters, analog signals, mathematic calculations, and recipes.
- Force on and off, input and outputs.
- Monitor ladder and STL program logic.
- Download, Upload, save and restore programs.

Who Should Attend: Anyone who will troubleshoot, maintain, or program a Siemens S7 PLC system.

Estimated class duration: 28 hours

PLC401-PanelView™ Modifications and Communications

This course is aimed at the experienced PLC technician. Designed to present the basic requirements to setup, communicate and troubleshoot the PanelView. This course can be customized to the need of clients including PanelView choices: 550, 600, 1000, 1200 or 1400e. This course is ideal for technicians tasked with replacing, reprogramming, and installing PanelView displays and using the Rockwell PanelBuilder software.

- Modify screens and objects
- Setup and troubleshoot communications to a PLC control system
- Understand PLC/SLC memory allocation and communication to PV
- Use PV application files and PV utilities
- Understanding the PLC and PanelBuilder software & hardware
- Addressing PLC I/O
- Observing simple ladder logic operation
- Identifying data tables
- Adding objects to the PanelView screen
- Transferring a project to the PanelView screen
- Utilizing the PanelView I/O from the PLC ladder logic
- Navigating between the PanelView screens
- Setting up PLC controlled screens
- Configuring alarm and Information screens
- Block transfers to and from a PanelView

Estimated class duration: 28 hours

PLC481-ControlLogix & RSLogix 5000

Engage deeply in the ControlLogix architecture through configuring, assembling, and then writing the necessary ladder logic to execute tasks with a ControlLogix 5000 controller. Where applicable, the student or participating company will provide a current system software printout, in advance, and we will use that to customize the lesson presentations to fit the application. Our courses can identify specific hardware or networks associated with the ControlLogix system, such as PLC-5, SLC500, remote I/O and Ethernet.

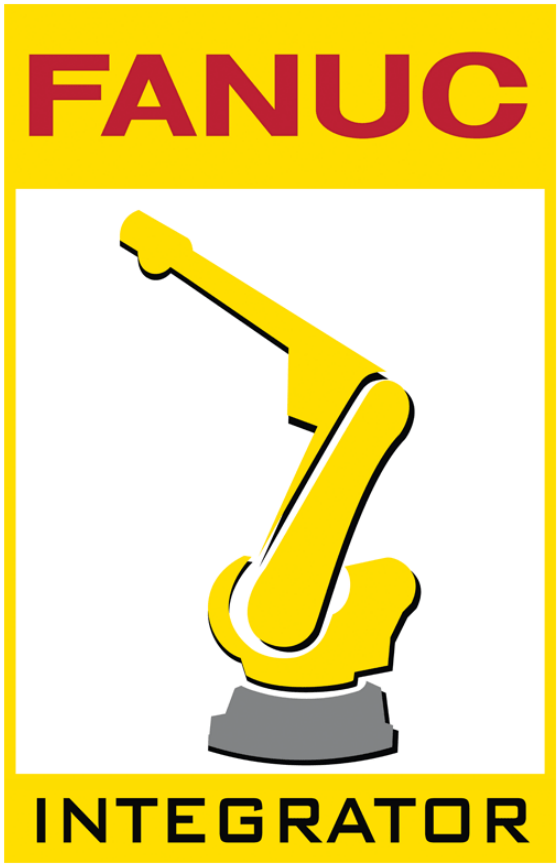
- Setting up, configuring communications, and designing a ControlLogix system
- Configuring the I/O structure and constructing a simple program for the ControlLogix system
- Integrating and configuring serial and Ethernet protocols using RSLinx software, for communicating data with other processors and remote I/O
- Distinguishing the differences between the 8-bit platform (1771-I/O) the 16-bit platform (PLC-5 and SLC500) and the 32-bit platform (ControlLogix)
- Troubleshoot a corrupt ControlLogix system

Estimated class duration: 28 hours

Robotics

RB220-Fanuc Robotics System R-J# Series Controller

Intended for maintenance personnel who are required to operate or perform maintenance on a FANUC System RJ, RJ-2, RJ-3 or RJ-3iB controller, this course covers the basic operations of FANUC robots, utilizing the teach pendant as the main interface point. Activities include familiarization in jogging the robot, recovering from common faults, basic programming, program execution, I/O manipulation, and back-up file management. Additionally, this course introduces common maintenance practices including periodic maintenance, preventative maintenance, and axis mastering.



- Identify all components of the cell that are part of the power up sequence
- Recognize the main components of the robot
- Identify all safety considerations related to operating the cell
- Describe the correct sequence for powering up the cell
- Recognize and clear alarms that would inhibit cell operation
- Identify the function of relevant keys on the teach pendant
- Describe the difference between joint and Cartesian/XYZ coordinate Systems
- Describe the difference in robot motion between linear and joint type motions
- Recognize the best jog system for specific applications
- Identify the origin of world and tool frames
- Understand the concepts of the robot's representation (joint and world)
- Identify necessary keystrokes to have the robot perform programmed moves
- Understand how to select a previously written program
- Understand the steps for modifying an existing program
- Understand each element of a motion instruction
- Understand the hazards with manipulating I/O
- Recognize the different forms of I/O and their functions
- Be familiar with the process of saving and loading programs to and from storage devices
- Identify various places in the software where you can load and save programs
- Familiarization of preventative and periodic maintenance procedures for mechanical unit
- Understand procedure of grease replacement process of drive mechanism, axes gear boxes and wrist
- Understand process of backup battery replacement and preservation of position data
- Understand axis mastering procedure following replacement of motor, pulse coder, reducer, cabling, or backup battery failure

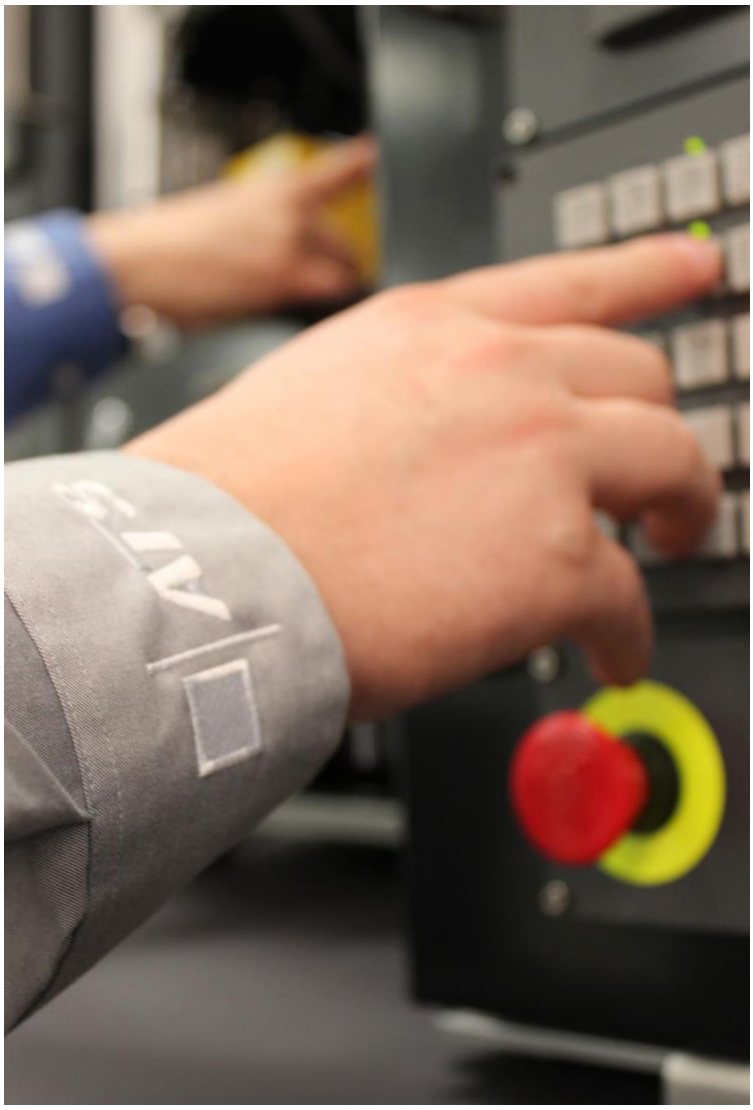
Estimated class duration: 24 hours

CNC

CNC201-CNC Maintenance and Troubleshooting

Specifically developed for personnel who are required to operate or perform maintenance on CNC Controlled equipment. This course begins at a basic level; while in depth educational objectives exist, the main objective of this course is to promote comfort in navigation of the CNC control and system diagnostic features. Course is conducted using FANUC 0iC and/or 16/18i, but is applicable to other FANUC control models. This course covers basic operations, program interpretation, and troubleshooting of CNC components through feedback devices. Activities include familiarization in jogging the machine, recovering from common faults, MDI programming, program execution, I/O manipulation, troubleshooting with PMC logic, and servo system diagnostics.

- Start up a CNC system
- Identify the axis coordinate system of a given machine
- Use the function/soft keys to view different function screens
- Use the MDI controls to enter basic commands
- Identify the components of a CNC part program
- Interpret CNC part program blocks which contain basic Program Language
- Enter a CNC part program into the CNC controller's memory
- Step through the PMC control system menu and Ladder Logic
- Determine the type of signal based on the address given
- Read and interpret a PMC ladder program
- Use the STATUS screen to view the state of various input/output signals
- Use the TRACE screen to track changes in specified signals
- Troubleshoot a servo drive on a CNC machine
- Troubleshoot the feedback device in a CNC machine's servo system
- Troubleshoot the servomotor in a CNC machine's servo system
- Troubleshoot a CNC machine's servo system interface wiring



Estimated class duration: 28 hours

Mechanical and Precision Maintenance

ME127-Troubleshooting Mechanical Power Systems

Identify problems, troubleshoot, and perform maintenance on mechanical systems through this hands-on course providing maintenance persons of all types with practical knowledge and techniques that can be immediately applied to troubleshooting mechanical systems. Within this robust, offering drive systems including belts, chains, gear drives and recirculating ball screws, are covered at a pace that fits the specific needs of the student. Drive system serviceability, measurement and maintenance are of paramount focus in this course.

- Better understand mechanical systems design and operations
- Understand simple and complex machines through component breakdowns
- Troubleshooting mechanical systems through visual and physical inspection
- Understand gear drives, ratios and factors of input and output forces
- Understand belt drive types, applications, and adjustments
- Service different types of belts, chain, or gear driven systems
- Calculate and measure power
- Provide proper lubrication methods to mechanical drive components
- Use various precision measuring devices in mechanical diagnostics
- Understand applications and limitations of various industrial fasteners

Estimated class duration: 28 hours

ME170-Mechanical Print Reading

Interpret the intention of the designer, and the proper function of the machine through this course designed for the machinist or maintenance technician. Within a classroom setting, understand the complexities of geometric dimensioning and tolerancing, various print views, projections, and functions of mechanical prints, while developing skills that allow technicians to interpret both the prints of the equipment, they are responsible for maintaining as well as understanding the parts that are being manufactured.

- Identify details, markings, and machine parts from an assembly drawing
- Identify an object from an orthographic drawing
- Identify elements located within the title block of a detail drawing
- Explain why more than one orthographic projection is needed to show an object on a blueprint
- Show two methods of joining machine parts
- Name and identify from an exhibit several types of threaded fasteners
- Identify screw threads from a number specification
- Understand the benefit and utilization of an exploded view
- Identify and interpret an assembly drawing
- Identify a specific part on an assembly drawing

Estimated class duration: 16 hours

ME202-Bearing Life Improvement

Improve equipment longevity by diagnosing the root cause of bearing failures. In this course, students exercise the proper methods in the installation and removal of bearings and understand preventative measures required to alleviate premature failures. Additionally, bearing and bearing seal types are identified and discussed to ensure that students understand the proper application, adjustment and tolerances associated with different bearing types.

- Determine proper sizes of shafts and housings
- Measure straight and tapered shafts
- Demonstrate proper bearing mounting and dismounting techniques
- Properly lubricate rolling bearings
- Monitor rolling bearings to prevent catastrophic failure
- Identify all types of bearing failures and what is required to prevent future failures

Estimated class duration: 24 hours

ME221-Industrial Gearbox Repair (Speed Reducers)

Thoroughly examine the aspects of troubleshooting, rebuilding, installing, and aligning of industrial gearboxes through this hands-on course. This intermediate mechanical course allows students to develop the skills and methodology to properly address gearbox issues of the worm, helical, herringbone, spur, and other types. Additionally, this course covers a selection of lubricants, their applications, and a breakdown on service rating.

- Correctly rebuild gear boxes to tolerance through measurement and adjustment
- Troubleshoot failed gear boxes
- Properly align a gear box allowing for thermal growth
- Select the proper worm gear box
- Apply service ratings for various applications/installations
- Properly install a speed reducer
- Select the proper lubricant
- Select the ideal coupling for the gearbox by rating, speed, and misalignment factor
- Correctly replace seals and bearings
- Correctly set up a gear box using shims

Estimated class duration: 28 hours

ME227-Precision Maintenance Part 1

This course is designed to give technicians an advanced understanding in the needs of their roles as a maintenance technician. Students learn a more in-depth application and use of measuring devices including tapes, vernier calipers, dial calipers, digital calipers, inside micrometers, outside micrometers, depth micrometers, telescoping gauges, feeler gauges, dial indicators and height gages. Taking the skills learned using the measuring devices, the students will apply those skills to have a master level understanding of shaft and housing fits and tolerances including bearings and how they interact with equipment. Finally, students will learn about the many fasteners that are available in the workplace and give them the knowledge and skills to select the correct one depending on the application. They will also be introduced to how to accurately inspect and identify damage to fasteners. This course is a pre-requisite to ME228 – Precision Maintenance Part 2.

- Work safely with precision maintenance
- Understand how to convert from English to Metric
- In-depth understanding of measuring devices
- Understanding of Shaft and Housing Fits and Tolerances
- Application and use of fasteners

Estimated class duration: 24 hours

ME228- Precision Maintenance Part 2

A continuation of ME227 – Precision Maintenance designed to give technicians an advanced understanding of torque including various applications in calculation, conversion and the many fasteners and components that can be impacted by torque. A wide variety of torque wrench types will be explored to show the proper selection and use of each. Using the skills learned about torque, students will progress into modules that include the installation, alignment, and maintenance of many types of chains, sprockets, belts, and pullies. An emphasis will be put on the use of the skills and tools learned in ME-227 to help the student have a much larger understanding of how all the skills and components work together in a larger system.

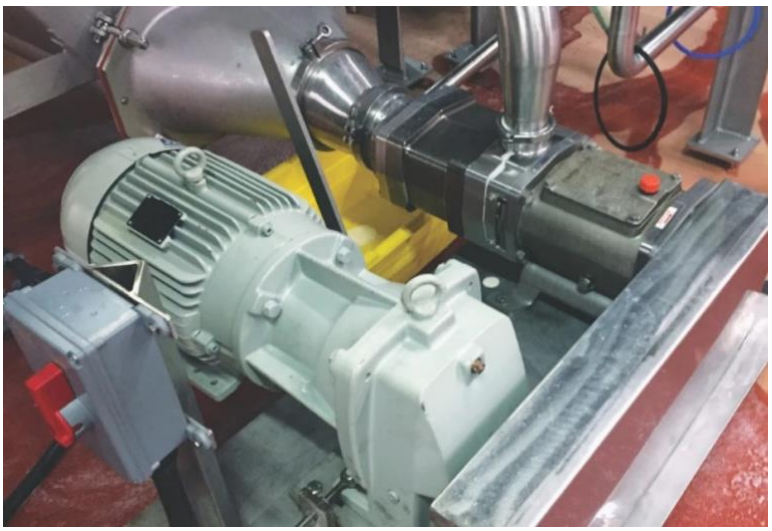
- Work safely with precision maintenance
- Understanding of torque
- Use of Keys and Keyways
- Knowledge of chains, sprockets, and the maintenance of each
- Knowledge of belts and pulleys and maintenance of each
- Master level understanding of the installation of chains, sprockets, belts, and pullets
- Advanced understanding of pulley alignment, couplings, and shaft alignment including laser alignment

Estimated class duration: 24 hours

Fluid Power

FP131-Liquid Process Pumps Troubleshooting

A workshop for millwrights, plumbers, pipefitters, mechanics, machinery maintenance mechanics, electromechanical technicians and more. Begins with an introduction to liquid process pumps and builds toward concepts like alignment and lubrication allowances.



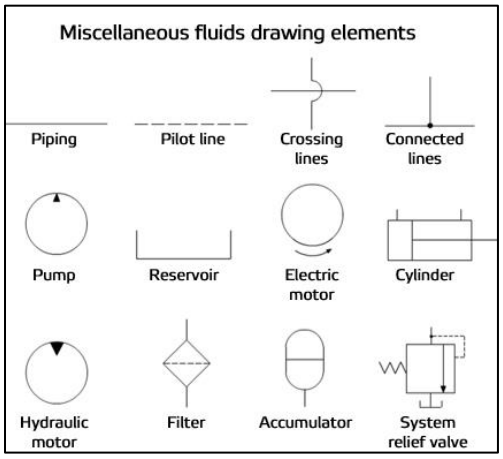
- Troubleshoot, diagnose and repair failed seals
- Align pumps
- Read pump curves
- Install piping and flanges correctly
- Properly install pumps
- Reduce fugitive emissions
- Repack and adjust pump stuffing boxes
- Install standard shaft couplings

Estimated class duration: 28 hours

FP151-Fluid Power Print Reading

A course designed for maintenance and skilled tradespersons who must be able to read prints for maintenance, installation and troubleshooting applications.
Although the course heavily emphasizes hydraulic print reading, pneumatic print reading is covered sufficiently to account for the variance between the two fluid power types. Within the course, standard symbology, conventional fluid diagrams, and logic diagrams are explained thoroughly. Participants are encouraged to encompass real prints from their facilities enabling the interpretation of prints relative to their current role and allowing each student to exit the course with a better knowledge of the equipment operation.

- Demonstrate an understanding of symbology, including schematics and piping drawings.
- Understand typical fluid power diagrams
- Interpret schematics including fluid power logic and piping drawings
- Demonstrate understanding of various print attributes: plan view, detail, elevation, isometrics
- Utilize fluid power schematics to identify function of fluid power systems



Estimated class duration: 16 hours

FP153-Fluid Power–Troubleshooting Hydraulics

An intensive lab-based fluid power training course intended for all factory maintenance technicians involved in the troubleshooting or repair of hydraulic systems and equipment, or machinery equipped with hydraulic systems.

Within this course students will learn how to read and interpret fluid power schematics to understand the component functions and common circuitry. This course also provides a hands-on experience in the application of fluid power troubleshooting, inspection and replacement of hydraulic components, and preventative maintenance processes.

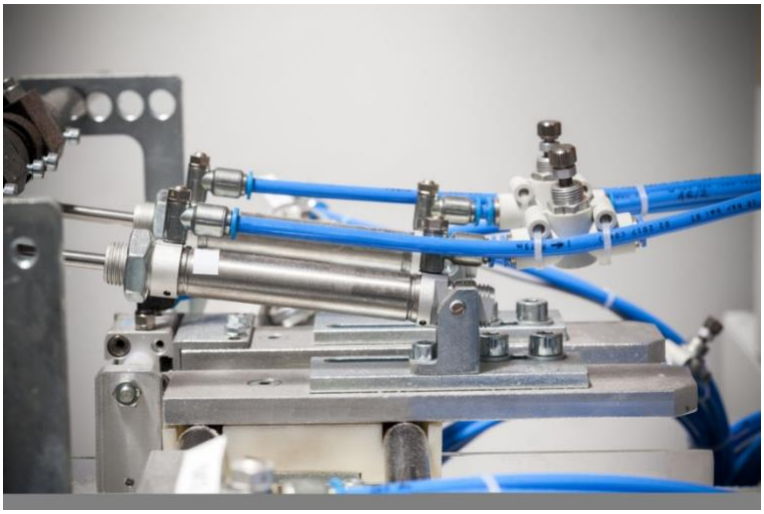
- Understand hydraulic safety best practices
- Apply fluid power theory and Pascal's Law
- Understand the form and function of directional controls
- Understand the utilization of check valves and pilot operated checks
- Demonstrate the functions of pressure controls and reliefs
- Apply sequence valve operation for machine function
- Understand the use of counterbalance and unloading valves
- Demonstrate the use of various flow controls
- Demonstrate the use of actuators in parallel and regenerative circuits
- Utilize component functionality to demonstrate intensifier functions
- Apply troubleshooting methods at a component level
- Demonstrate function of accumulators
- Understand function and rating of hydraulic fluids, seals, and filters

Estimated class duration: 28 hours

FP161-Troubleshooting Pneumatic Equipment/Controls

A course designed for the intermediate to advanced experienced mechanical maintenance technician who must troubleshoot, repair, and maintain industrial air logic systems. Working safely with pneumatic systems is emphasized throughout this course focused on troubleshooting pneumatic logic systems.

- Read pneumatic schematics
- Identify and understand pneumatic components
- Troubleshoot pneumatic control circuits
- Troubleshoot pneumatic Programmable Logic Controllers
- Read and interpret ladder diagrams
- Understand common circuit applications
- Perform preventive maintenance
- Remove, clean, and replace pneumatic components



Estimated class duration: 28 hours

Rigging

RL158-Safe Rigging, Lifting, & Moving of Equipment

Safe lifting and moving – this industrial rigging training course is intended for all factory maintenance technicians involved in the practice of lifting, rigging or moving equipment or equipment components requiring lifting devices. This specific training event covers the utilization of components and practices "Below the Hook". Successful completion of this course and exam provides internal qualification in accordance with regulations set forth by OSHA 29CFR1910.184 and 29CRF1926.251.

- Inspect rigging hardware for capacity and safety
- Inspect rigging slings for capacity and safety
- Properly utilize rigging and lifting slings and hardware
- Understand the advantages and limitations of various sling types
- Know how to safely utilize machine jacks
- Understand the use of machine rollers and dollies
- Know when, how and with what material to utilize cribbing
- Demonstrate proper hand signals for rigging operation
- Execute a safe lifting and equipment move plan
- Understand the various roles of employees involved in rigging operations
- Demonstrate the ability to balance a load and identify load center
- Apply the techniques of a skilled rigger

Estimated class duration: 24 hours
***MEETS SAFETY REGULATIONS**

RL161-Overhead Crane Inspection

This is a hands-on Overhead Crane training course intended for all factory maintenance technicians involved in the troubleshooting or repair of crane systems. Within this course students will learn how to perform the OSHA/ANSE frequent and periodic inspections. Further, this course provides a hands-on experience at the customer site and will be customized to fit the sites particular needs.

- Understand crane terms and applicable ANSI standards
- OSHA 1903.1- General Duty Clause
- OSHA 1910.6- Incorporation by Reference
- OSHA 1903.13- Imminent Danger
- OSHA 1910.179 –Overhead and Gantry Cranes
- OSHA 1910.184 with 1926.251 Insert and Applicable Tables
- Demonstrate proper Lockout/Tag Out
- Interpret the definition of crane operation, condition, and limitations
- Identify risk and prevent overhead crane incidents
- Know wire rope technology
- Interpret and Perform inspection procedures
- Adhere to ASME/ANSI B30.xx and CMAA specification 70 & 74

Estimated class duration: 24 hours
***MEETS SAFETY REGULATIONS**

Factory Maintenance

FM226-Air Conditioning & Refrigeration Certification

Students earn an EPA Refrigerant Recovery Certification in this three-day course. Beginning with an overview of HVAC, students prepare to take the certification test by learning safety, electrical, troubleshooting and filtration concepts, to name a few.

- Understand the physics of heat and heat transfer
- Apply basic electrical theory and troubleshooting
- Apply Print reading and Schematics Skills to HVAC
- Safely work with refrigeration and air conditioning systems
- Understand the methods of heating, filtration, and humidification

Estimated class duration: 28 hours

ONLINE COURSES

Foundational

Safety

Introduction to OSHA 101
Ergonomics 102
Personal Protective Equipment 111
Noise Reduction and Hearing Conservation 121
Respiratory Safety 131
Lockout/Tagout Procedures 141
Machine Guarding 140
SDS and Hazard Communication 151
Bloodborne Pathogens 161
Walking and Working Surfaces 171
Fire Safety and Prevention 181
Flammable/Combustible Liquids 191
Hand and Power Tool Safety 201
Safety for Lifting Devices 211
Powered Industrial Truck Safety 221
Confined Spaces 231
Environmental Safety Hazards 241

Applied Mathematics

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Math: Fractions and Decimals 111
Applied and Engineering Sciences 110
Units of Measurement 112
Basics of Tolerance 121
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Manufacturing Process Applications: Part II 125
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Shop Geometry Overview 170
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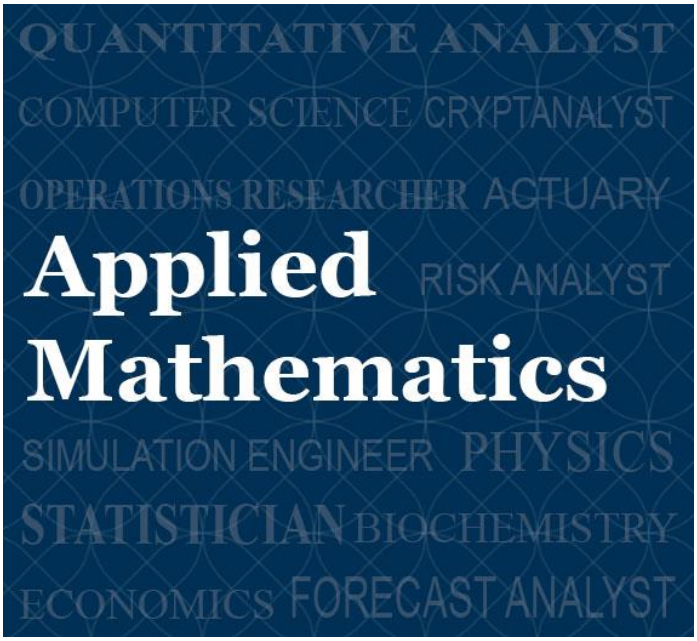
Trigonometry: Sine Bar Applications 221
Shop Trig Overview 210
Statistics 231
Interpreting Blueprints 230
Concepts of Calculus 310



Materials

Introduction to Physical Properties 101
Introduction to Mechanical Properties 111
Introduction to Metals 121
Introduction to Plastics 131
Metal Manufacturing 140
Overview of Plastic Processes 145
Classification of Steel 201
Essentials of Heat Treatment of Steel 211
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Nonferrous Metals 241
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Thermosets 261
Ceramics 250
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Principles of Thermoforming 265
Exotic Alloys 301

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Calibration Fundamentals 111
Basics of Tolerance 121
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Thread Standards and Inspection 151
Surface Texture and Inspection 201
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Major Rules of GD&T 311 Interpreting GD&T 310 (1994)
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Inspecting a Cylindrical Part 331
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Inspecting with CMMs 361
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Continuous Process Improvement: Identifying and Eliminating Waste 125
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Product Design and Development 134
Developing a Lean Culture 135
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Equipment/Tool Design and Development 137
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Introduction to Six Sigma 171
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Conducting an Internal Audit 201
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Fanuc Lathe: Program Execution 285
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Fanuc Lathe: First Part Runs 325

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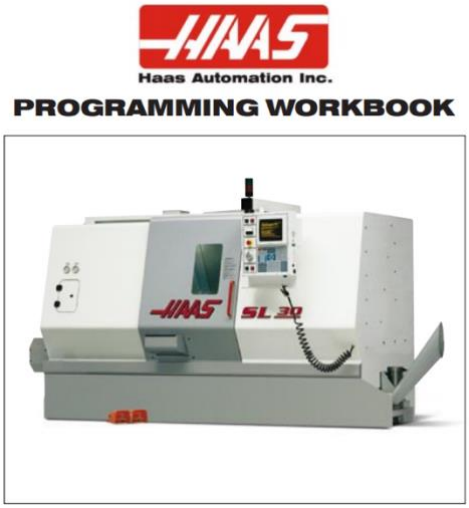
Haas Lathe: Control Panel Overview 255
Haas Mill: Entering Offsets 260
Haas Lathe: Entering Offsets 265
Haas Mill: Locating Program Zero 270
Haas Lathe: Locating Program Zero 275
Haas Mill: Program Execution 280
Haas Lathe: Program Execution 285
Haas Mill: Program Storage 310
Haas Lathe: Program Storage 315
Haas Mill: First Part Runs 320
Haas Lathe: First Part Runs 325



CNC Controls: Mazak

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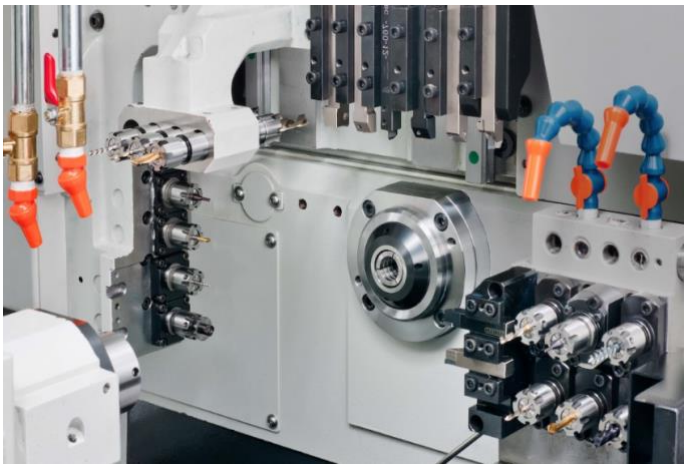

Workholding

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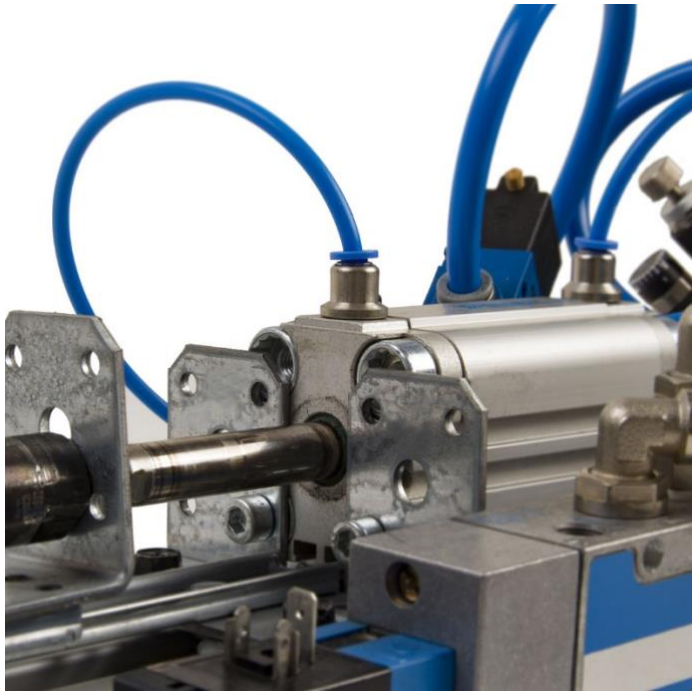

Mechanical Systems

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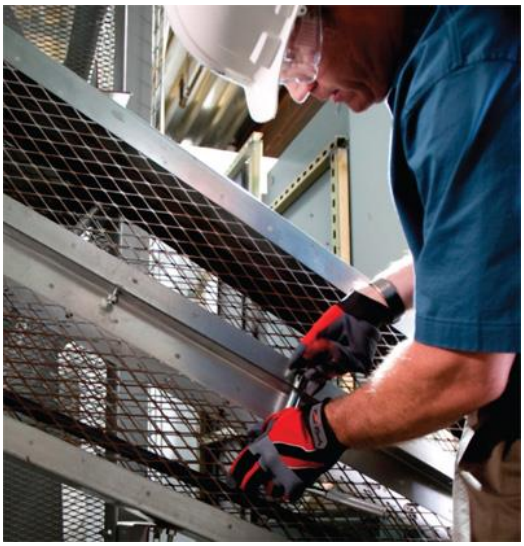

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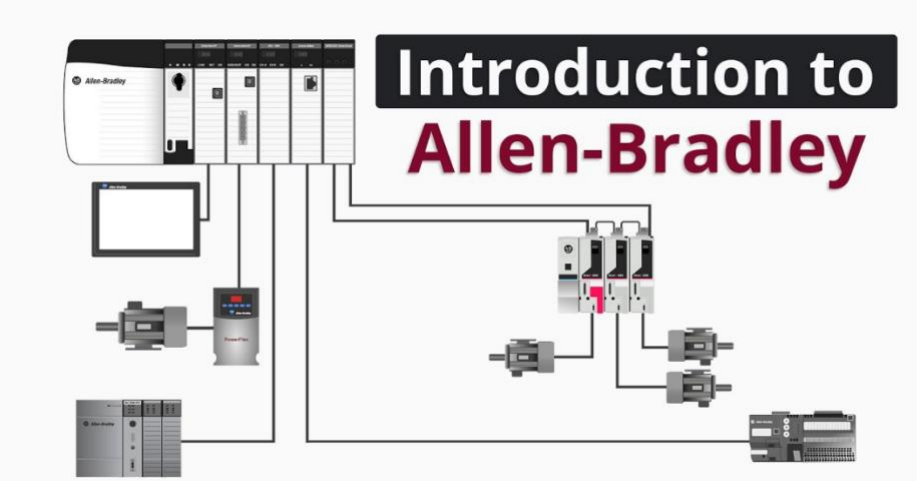

PLCs: Siemens

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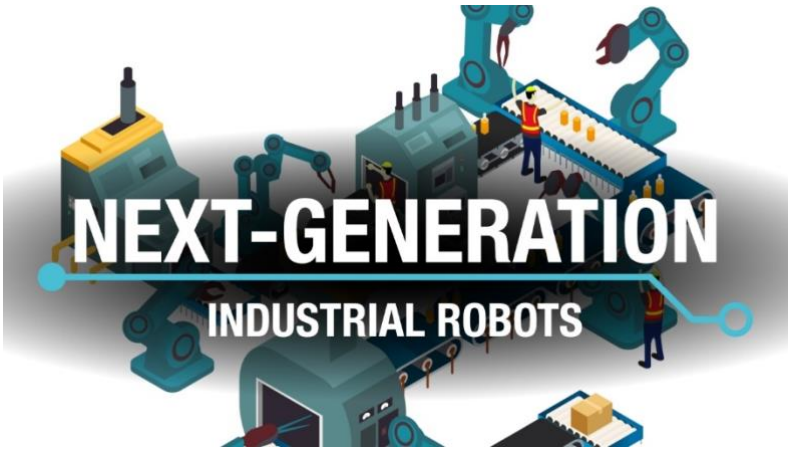

Welding

Welding

Additive Manufacturing

Additive Manufacturing

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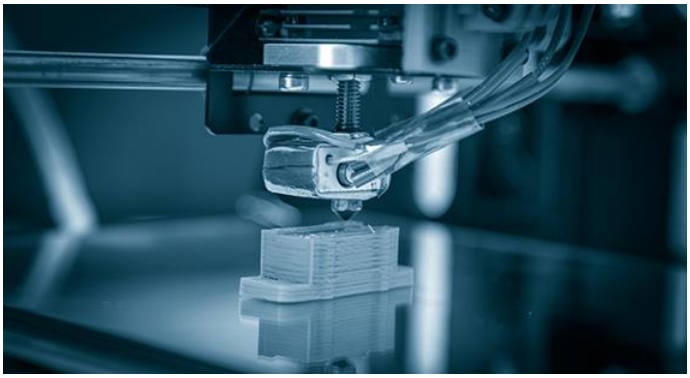

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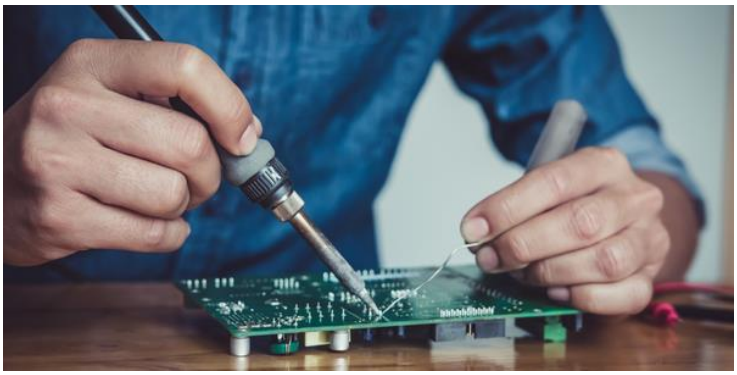

Leadership

Leadership

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ATS TECHNICAL TRAINING SOLUTIONS