

Academy for Manufacturing Careers

Machine Repair Apprenticeship



Apprentices will learn the necessary skills and earn a journeyman's certification for a Machine Repair, using the latest tools in this four year, Department of Labor registered technical instruction program.

A variety of classroom instruction formats including lecture, PowerPoint, group discussion, and group exercises gives the student maximum hands-on learning opportunities.



Core Classes

Industrial Blue Print Reading

Algebra

Machining Theory & Methods

Basic Gauges & Measurement

Materials/Metallurgy

Basic Industrial Electricity

Problem Solving/Lean

Industry standards, automotive OEM requirements, best practices, and requests for this training by our local manufacturers all continue to show the need for this training.

Gives the Apprentice the foundation to build upon for future specialized instruction.

Track Specific

Intermediate Blueprint Reading/GD&T

Precision Machining Methods

Industrial Hydraulics/Pneumatics

Welding II

Jig & Fixture Design

Machine Maintenance & Troubleshooting

Basic PLC

Industrial Wiring

Drive Components & Bearings

Robotics & Material Handling

NOTICE OF NONDISCRIMINATORY POLICY AS TO STUDENTS

The Academy for Manufacturing Careers admits students of any race, color, national and ethnic origin, ancestry, religious creed, age, disability, marital status, sexual orientation, gender, or gender expression to all the rights, privileges, programs and activities generally accorded or made available to students at the school. It does not discriminate on the basis of race, color, national and ethnic origin, ancestry, religious creed, age, disability, marital status, sexual orientation, gender, or gender expression in administration of its educational policies, admissions policies, scholarship and loan programs, and any other school-administered programs.



Jackson Area
Manufacturers Association
Helping Manufacturers Succeed & Grow Since 1937

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Machine Repair Apprenticeship



the academy for manufacturing careers

Robotics & Material Handling

This course provides an introduction to automated materials handling/ production equipment and the role of the computer/robotics in modern manufacturing systems.

Precision Machining Methods

Prerequisite: Machining Theory & Methods

A basic course in machining theory and an introduction to the use of common tools and techniques in manufacturing. Topics introduced include: turning, boring, drilling, milling, grinding, use of hand tools, machine setup, preventative maintenance, efficient operation of tools, and use of the Machinery Handbook.

Intermediate Blueprint Reading/GD&T

Prerequisite: Industrial Blueprint Reading

Geometric Dimensioning and Tolerancing covers the fundamentals of GD&T concepts, and teaches how to read and interpret prints with GD&T symbols. Content is based upon ASME Y 14.5M-2009 standards.

Industrial Hydraulics/Pneumatics

This course provides instruction in the basics of hydraulic and pneumatic systems including pumps, valving, control assemblies, and actuators. A general understanding of basic laws and formulas used in simple hydraulic circuits, including standard hydraulic syls, and maintenance procedures will be provided.

Welding II

This course provides GMAW (gas metal arc welding formally known as MIG welding) and GTAW (gas tungsten arc welding formally known as TIG welding) processes and techniques. Topics will include: safety, use of equipment, power sources, shielding gases, filler metals, welding techniques, troubleshooting and more.

Machine Maintenance & Troubleshooting

This course covers methods and means used to troubleshoot and maintain machines typically found in a manufacturing environment. Problem symptoms, problem identification, maintenance records and systems will be covered.

Drive Components & Bearings

This course instructs students in the principles, applications, and maintenance of various types of bearings and mechanical couplings, including ball and roller, powdered metal, non-metallic, hydrostatic bearings; couplings: such as shear, torque limiting, floating and insulated, speed reducers, seals and gears.

Industrial Wiring

Prerequisite: Basic Industrial Electricity

Practical applications of Industrial Electrical Wiring is covered starting with codes, standards, and electrical prints and then move onto the safe use of hand tools and power tools used in the industry.

Jig & Fixture Design

Prerequisite: Intermediate Blueprint Reading

This course helps the student develop a thorough understanding of how and why jigs and fixtures are designed and built as they are. The discussion starts with fundamentals of jigs and fixtures and works through the various elements and considerations of design. Two fundamental tool design principles are constantly stressed: simplicity and economy.

Basic PLC

Prerequisite: Basic Industrial Electricity

This course provides an overview of SLC and Micrologix hardware, communications, cabling, and system design. Introducing the student to RSLogix 500 and ladder programming. Instructor led labs that cover a variety of programming instructions used with SLC 500 and RSLogix 500 software,.



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