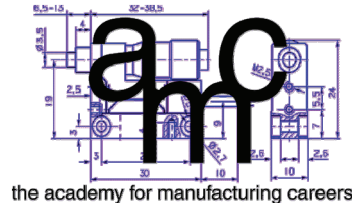


Academy for Manufacturing Careers

Machine Builder Apprenticeship



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



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.

Track Specific

Intermediate Blueprint Reading/GD&T
Geometry
Precision Machining Methods
Industrial Hydraulics & Pneumatics
Welding II
Jig & Fixture Design
Machine Maintenance & Troubleshooting
Basic PLC
Industrial Wiring
Drive Components & Bearings
Robotics & Material Handling

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

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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Industrial Wiring

This course covers practical applications of Industrial Electrical Wiring. The course will start with codes, standards, and electrical prints and move onto the safe use of hand tools and power tools used in the industry. Also, materials used in the industrial environment and how to determine correct wire size and voltage levels will be determined. Finally installation of equipment and repairs explored.

Jig & Fixture Design

This course helps the student develop thorough understanding and working knowledge of how and why jigs and fixtures are designed and built as they are. To do this 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. Design sketching is used to allow the student to demonstrate an understanding of the theories presented.

Basic PLC

This course provides an overview of SLC and Micrologix hardware, communications, cabling, and system design. It introduces the student to RSLogix 500 and its features for ladder programming. This course also has instructor led labs that cover a variety of programming instructions used with SLC 500 and RSLogix 500 software, including examine on/off, output energize, latch and unlatch, timers, counters, math statements, comparisons, branching, etc.

Intermediate Blueprint Reading/GD&T

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 ANSI/ASME Y 14.5M-2009 standards.

Precision Machining 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.

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 symbols, 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, weld defects and welding in the flat and horizontal positions.

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.

Geometry

This class provides the student with the ability to analyze problems relating to engineering drawings. Geometry deals with measurements, relationships of points, lines and angles. Proficiency in geometry will aid in determining areas and volumes of circles, triangles and other common polygons.

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.

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.



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