

INDUSTRIAL MAINTENANCE (ZINM)

ZINM-1018 Industrial Programmable Logic Controllers (PLC) I 3.2 CEUs

Learn and apply the concepts of Programmable Logic Controllers (PLC). This is a hands-on introduction to industrial type applications of PLCs requiring motion control with a study of automated manufacturing and the functions PLCs serve in an industrial environment.

Contact hours: 32

Not financial aid eligible.

ZINM-1035 Industrial Hydraulics 3.2 CEUs

This course will cover high pressure fluid systems. Labs will cover industrial hydraulics and fluid power circuitry. Material will also address the components used on mobile and construction machinery. Information will be shared regarding troubleshooting systems and repairing equipment.

Contact hours: 32

Not financial aid eligible.

ZINM-1066 Electronics for Manufacturing Electricians 2.4 CEUs

This class was specifically designed for Electrical Apprentices at a local manufacturing company. The students will learn Electronic Relay Controls, Sequencing Controls, Electronic Timers and Advanced Systems, Electronic Sensors and Electronic Counter Systems.

Contact hours: 24

Not financial aid eligible.

ZINM-1076 Welding Seminar 0.8 CEUs

Tri-C Auto-Tech department welding seminar. Topics covered: Compliance with industry safety guidelines ; review of the fundamental skills of Stick, MIG, TIG and OxyFuel welding technologies ; how to light and operate an oxy-acetylene torch and practice of this skill .

Contact hours: 8

Not financial aid eligible.

ZINM-1077 Certified Production Tech (CPT) Training 16 CEUs

This program provides an industrywide accepted certification recognizing individuals who demonstrate mastery of the core competencies of manufacturing production through successful completion of the certification assessments. The CPT certification program will increase the level of performance of production workers and help both individuals in finding higher-wage jobs and employers in increasing the company's productivity and competitiveness.

Contact hours: 88

Not financial aid eligible.

ZINM-1079 Fluid Power for Maintenance Technicians 1 3.2 CEUs

This course addresses the practical application of fluid power principles used in the installation, maintenance and troubleshooting of industrial hydraulic and pneumatic systems and equipment.

Contact hours: 32

Not financial aid eligible.

ZINM-1080 Fluid Power for Maintenance Technicians 2 4 CEUs

Second part of course addresses the practical application of fluid power principles used in the installation, maintenance and troubleshooting of industrial hydraulic and pneumatic systems and equipment.

Contact hours: 40

Not financial aid eligible.

ZINM-1082 Industrial Maintenance Certificate Training Program 31 CEUs

The Industrial Maintenance Certification Program prepares individuals for a career in the high-demand industrial maintenance field. Taking a systems approach integrating electrical, mechanical, and IT, the program helps meet the demand for industrial maintenance technicians in Northeast Ohio's advanced manufacturing sector. The marriage of these three fields - better known as mechatronic systems - plays an ever-increasing role in manufacturing; from your car to your household appliances, from public transportation systems to electric power generators - in short, almost every aspect of daily life.

Contact hours: 310

Not financial aid eligible.

ZINM-1083 Electricity I - Direct Current 1.4 CEUs

Basic Electricity class for Direct Current theory and applications. This is a non-credit class developed for MRP corporation.

Contact hours: 14

Not financial aid eligible.

ZINM-1086 Basics of Process Control and Instrumentation 4.8 CEUs

Concepts of electronics circuitry, devices and instruments including purpose, function and operations of diodes, transistors, silicon controlled rectifiers (SCR) DIAC, TRIAC, FET and other solid state devices in electronic circuits. Special attention is paid to industrial devices that contain these devices.

Contact hours: 48

Not financial aid eligible.

ZINM-1090 Troubleshooting for Maintenance 9.6 CEUs

Use pneumatic and electrical diagnostic tools to troubleshoot simple and advanced pneumatic and hydraulic trainers in common failure modes.

Explore advanced pneumatic and hydraulic operations. Troubleshoot simple PLC wiring and pneumatics on a running program. Introduce mechanical concepts such as alignment, and rigging. Review 5-whys and do practical troubleshooting on plant equipment.

Contact hours: 96

Not financial aid eligible.

ZINM-1097 Industrial Machine Tool Fundamentals – Theory and Operation 6.4 CEUs

This course introduces machining operations as they relate to Industrial Maintenance. Topics include machine shop safety, job planning/setups, cutting speeds and feed rates, measuring tools and general print reading. Students will apply this learning with hands-on operation of a lathe, drilling machine, milling machine, grinders and layout instruments.

Contact hours: 64

Not financial aid eligible.

**ZINM-1101 3G Welding
4 CEUs**

In this weeklong course, you'll learn the skills necessary to perform a 3G 1" plate certification test using the Shielded Metal Arc Welding process. Get familiar with different stick electrodes, including E6010 1/8", E7018 3/32" and E7018 1/8". Perform your test on the last day of class and receive certification if your weldment is deemed serviceable.

*Contact hours: 40
Not financial aid eligible.*

**ZINM-1102 6G Welding
4 CEUs**

In this weeklong course, you'll learn the skills necessary to perform a 6G schedule 80 pipe certification test using the Shielded Metal Arc Welding (SMAW or Stick welding) process. Get familiar with different stick electrodes, including E6010 1/8", E7018 3/32" and E7018 1/8". Perform your test on the last day of class and receive certification if your weldment is deemed serviceable.

*Contact hours: 40
Not financial aid eligible.*

**ZINM-1103 Fillet Welding
2.4 CEUs**

In this three-day course, you'll learn the skills necessary to perform a fillet weld using various welding processes and positions. Get familiar with different stick electrodes including E6010 1/8", E7018 3/32" and/or E7018 1/8".

*Contact hours: 24
Not financial aid eligible.*

**ZINM-1104 Customized Hydraulics Training for Zoresco Equipment Company
1.9 CEUs**

In this course, students will learn the fundamentals of hydraulics and fluid power with an emphasis on the laws and principles of fluid power transmission, units of pressure and flow, materials and sizing, pressure losses through piping and compliance with OSHA safety standards for installing, maintaining and repairing hydraulic pneumatic systems. Extensive guided instruction and practice are provided.

*Contact hours: 19
Not financial aid eligible.*

**ZINM-1105 Customized Electronics Training for Zoresco Equipment Company
1.9 CEUs**

Students will learn the fundamentals of electricity with an emphasis on resistance, direct current voltage, electrical quantities and units of measurements.

*Contact hours: 19
Not financial aid eligible.*

**ZINM-1106 3G Welding Test/Appointment Only
2.4 CEUs**

This course is for test/appointment purposes only. It is reserved for students who did not pass their initial 3G welding certification test. This course requires department/program manager approval before enrolling.

*Contact hours: 24
Not financial aid eligible.*

**ZINM-1107 AWS Welding Certification Exam
0 Contact Hours**

Available by appointment only. This course is available for retake of STICK, MIG or TIG American Welding Society certifications.

*Contact hours: 2
Not financial aid eligible.*

**ZINM-1109 6G Welding Test/Appointment Only
2.4 CEUs**

This course is for test/appointment purposes only. It is reserved for students who did not pass their initial 6G welding certification test. This course requires department/program manager approval before enrolling.

*Contact hours: 24
Not financial aid eligible.*

**ZINM-1110 Advanced 6G Welding
8 CEUs**

In this Advanced 6G welding course, students will learn the skills to perform a 6G schedule 80 pipe certification test using the shielded metal arc welding process (SMAW or stick welding). This course will further advance students' welding skills to pipe. The student will learn the techniques required of a certified pipe welder. Students will become familiar with different stick electrodes, including E6010 1/8", E7018 3/32" and E7018 1/8". Students will be given the opportunity to perform their 6G schedule 80 pipe certification test during class. Lab practice is geared toward certification to ASME IX, Boiler & Pressure Vessel Code in the 6G position on carbon steel. Once practice and a weldment test piece are completed, the weldment will be tested at an internal or external source. Students will be awarded a certification if their weldments are deemed serviceable. This course is intended for an individual with previous SMAW welding experience who wants to advance their skills into learning. It is highly recommended that students have prior experience in beveled plate (3G or similar) welding prior to attending this course. Note: This is a noncredit course.

*Contact hours: 80
Not financial aid eligible.*

**ZINM-2023 Oatey Mold Technology/Plastics Injection Molding
12.9 CEUs**

Oatey Contract Training
*Contact hours: 129
Not financial aid eligible.*