Machine Maintenance Certificate (MMC)

Machine Maintenance Certificate (MMC)

This training program is designed to provide the knowledge and hands-on experience necessary for an entry-level mechanical maintenance technician in industry.

For more information call the Workforce Development Center at (513) 569-1643 or toll-free (888) 569-1709.

Machine Maintenance Certificate (MMCC)

MMC 105	Shop Math	1
MMC 110	MSSC Certified Production Technician Training	6
MMC 120	Pneumatic Systems 1	2.5
MMC 130	Hydraulic Systems 1	2.5
MMC 140	Mechanical Drive Systems	2.5
MMC 150	Bearings, Seals, and Lubrication	1.5
Total Credits		**16**

Courses

MMC 100 Introduction to Mechanical Systems
1 Credit. 1 Lecture Hour. 0 Lab Hour.
A course on mechanical systems found in a manufacturing facility. Topics include: mechanical power transmissions, bearings and shafts, lubrication, pumps and compressors, fluid power, and piping systems.
Prerequisites: None

MMC 105 Shop Math
1 Credit. 1 Lecture Hour. 0 Lab Hour.
A course that reviews basic mathematical skills used in the maintenance trades. Topics include: decimals, fractions, percents, ratios, proportions, roots, and powers; basic algebra; and basic trigonometry.
Prerequisites: None

MMC 110 MSSC Certified Production Technician Training
6 Credits. 6 Lecture Hours. 0 Lab Hour.
A course that addresses core competencies for production workers as defined by the Manufacturing Skills Standards Council. Students who complete the course successfully earn the MSSC Certified Production Technician credential.
Prerequisites: Admitted to MSSC Training Program
Instructor Consent Required

MMC 111 MSSC Certified Logistics Associate Trai
2 Credits. 2 Lecture Hours. 0 Lab Hour.
A course that addresses core competencies for production workers whose job activities involve basic areas of logistics, as defined by the Manufacturing Skills Standards Council. Students who complete the course successfully earn the MSSC Certified Logistics Associate credential.
Prerequisites: Admitted to MSSC Training Program
Instructor Consent Required

MMC 112 MSSC Certified Logistics Technician Tra
2 Credits. 2 Lecture Hours. 0 Lab Hour.
A course that addresses core competencies for production workers whose job activities involve advanced areas of logistics, as defined by the Manufacturing Skills Standards Council. Students who complete the course successfully earn the MSSC Certified Logistics Technician credential.
Prerequisites: MMC 111
Instructor Consent Required

MMC 115 Print Reading and Measurement Tools
1.5 Credit. 1 Lecture Hour. 0.5 Lab Hour.
A course on reading and understanding mechanical prints and using precision mechanical measuring tools.
Prerequisites: None

MMC 117 Tools, Machines, and Fabrication
2.5 Credits. 2 Lecture Hours. 1 Lab Hour.
A course on the application and operation of hand tools, power tools, machine tools and other tools used in fabrication.
Prerequisites: None

MMC 118 Industrial Piping Systems
1 Credit. 1 Lecture Hour. 0 Lab Hour.
A course on types and applications of industrial pipe systems. Topics include: sizing, identifying, and installing piping, fittings, and valves; and using systems including iron pipe, steel tubing, hydraulic hose, plastic pipe, and copper tubing.
Prerequisites: None

MMC 120 Pneumatic Systems 1
2.5 Credits. 2 Lecture Hours. 1 Lab Hour.
A course on fundamental principles and techniques of pneumatics. Topics include: maintenance, field repairs, and troubleshooting of pneumatic systems.
Prerequisites: None

MMC 125 Pneumatic Systems 2
2.5 Credits. 2 Lecture Hours. 1 Lab Hour.
A continuation of MMC 120 that provides additional understanding and practice in maintenance, field repairs, and troubleshooting of pneumatic systems.
Prerequisites: MMC 120

MMC 127 Rigging and Lifting
1 Credit. 1 Lecture Hour. 0 Lab Hour.
A course on fundamental skills and applications for rigging, stressing inspection and safety. Topics include: industrial knots, rigging calculations, hand signals, gear selection, overhead crane operation, and lift operation.
Prerequisites: None

MMC 130 Hydraulic Systems 1
2.5 Credits. 2 Lecture Hours. 1 Lab Hour.
A course on fundamental principles and techniques of industrial hydraulics. Topics include: fluid conductors, seals, basic hydraulic symbols, construction, and operation and use of hydraulic pumps.
Prerequisites: None

MMC 135 Hydraulic Systems 2
2.5 Credits. 2 Lecture Hours. 1 Lab Hour.
A continuation of MMC 130. Topics include: construction, operation, pressure controls, directional controls, flow controls, actuators, cartridge valves, stack valves, accumulators, heat exchangers, flow meters, and gauges.
Prerequisites: MMC 130

MMC 140 Mechanical Drive Systems
2.5 Credits. 2 Lecture Hours. 1 Lab Hour.
A course on fundamentals of mechanical transmission systems used in industrial applications. Topics include: operation, installation, performance analysis, and design of basic mechanical transmission systems; and using chains, v-belts, spur gears, bearings, and couplings.
Prerequisites: None

MMC 145 Preventive Maintenance for Mechanical Systems
2.5 Credits. 2 Lecture Hours. 1 Lab Hour.
A course on concepts and methods for preventive maintenance, emphasizing vibration measurement and monitoring. Topics include: vibration analysis; tests, measurements, and adjustments; and parts replacement performed to prevent faults from occurring.
Prerequisites: None

MMC 147 Machine Leveling and Alignment
1 Credit. 1 Lecture Hour. 0 Lab Hour.
A course on industrial equipment leveling and alignment procedures. Topics include: alignment instruments and tools, shaft runout, softfoot, piping strain, foundations, and anchor systems.
Prerequisites: None

MMC 150 Bearings, Seals, and Lubrication
1.5 Credit. 1 Lecture Hour. 1 Lab Hour.
A course on how to operate, install, analyze, troubleshoot, and select bearings, seals, and lubrication for mechanical systems.
Prerequisites: None

MMC 160 Industrial Pump Maintenance
1.5 Credit. 1 Lecture Hour. 1 Lab Hour.
A course on fundamentals of selecting, installing, and troubleshooting industrial centrifugal pumps. Topics include: pump operation, pressure/flow characteristics, performance and efficiency, cavitation, seals, sizing, and maintenance.
Prerequisites: None

MMC 170 Jet Engine Teardown
1.5 Credit. 1 Lecture Hour. 1 Lab Hour.
Jet Engine Teardown School (JETS) covers commercial jet design, components, and operating principles. Students tear down a commercial jet engine and fire up a working commercial jet engine.
Prerequisites: None

MMC 180 Machining Processes
1.5 Credit. 1 Lecture Hour. 1 Lab Hour.
A course on interpreting engineering part drawings, determining the sequence of machining operations, selecting tooling, and preparing plans for machining and inspection to confirm that parts meet the requirements of the drawings.
Prerequisites: None