

# Industrial Maintenance Mechanic

## Technical Diploma

Designed for individuals seeking entry-level employment in manufacturing. This certificate provides opportunities for students to develop the foundational academic, employability, and technical skills needed in the modern manufacturing setting.

## Program Outline

| TERM 1     |  |         |
|------------|--|---------|
| Course #   | Course Title   | Credits |
| 3180130400 | Applied Communications Writing<br>Focuses on writing skills related to employment. Students write and edit letters, resumes, memos, and brief reports.   | 2.00    |
| 1046210300 | Hydraulic Components and Schematics<br>Students will learn how to operate the Basic Hydraulic Trainer and draw the schematic symbols in a circuit.   | 1.00    |
| 1046210500 | Fixed Displacement Pumps<br>Students will learn about Pascal's law and the relationship between pressure, force and area.  | 1.00    |
| 1046210700 | Hydraulic Pressure Valves<br>Students will identify different hydraulic valves and use them in an application.   | 1.00    |
| 1046211500 | Basic Electrical Circuits<br>Students will learn how to measure voltage, current and resistance in an electrical circuit.  | 1.00    |
| 1046211700 | Inductance and Capacitance<br>Students will learn how to define and calculate inductance and capacitance in an electrical circuit.   | 1.00    |
| 1046211900 | Analyze Transformers<br>Students will learn how to size a transformer and how to identify the step up and step down transformers.  | 1.00    |
| 3240431700 | Automotive HVAC Systems<br>Student will perform general A/C diagnosis and repair. This is part of the Maintenance and Light Repair Certification ASE G1.   | 1.00    |
| 3240435800 | HVAC Controls<br>Student will perform diagnosis of HVAC control systems. This is part of the ASE A7 Certification.   | 1.00    |
| 3240435600 | HVAC System Service<br>Student will perform refrigerant recovery, recycling, and handling procedures. Student will perform A/C system component replacement and diagnosis. This is part of the ASE A7 Certification. | 1.00    |
| 3240439600 | Automotive Diesel Operation<br>Student will learn diesel engine and fuel system operation and diagnosis.   | 1.00    |

| Course #      | Course Title   | Credits |
|---------------|--|---------|
| 3144210500    | <b>Welding Fundamentals</b><br>Welding Fundamentals is designed to introduce students to basic techniques in a wide variety of welding and cutting processes. Learners will assess welds for quality as they make fillet and groove welds in all position on steel while experiencing a range of welding processes including Gas Metal Arc Welding, Shielded Metal Arc Welding, and Flux Core Arc Welding, as well as cutting processes such as OFC and PAC. | 3.00    |
| 3146212000    | <b>Relay Logic used in Hydraulics</b><br>Students will analyze the use of electricity to control a hydraulic system. Students will learn relay component identification using ladder logic. Using the ladder logic and relay logic, students will connect circuits on a trainer to operate a circuit.  | 1.00    |
| <b>TERM 2</b> |  |         |
| Course #      | Course Title   | Credits |
| 1010312600    | <b>MS Excel Beginning</b><br>This course will cover creating a worksheet and chart; application of formulas, functions, and formatting; and working with large worksheets, charting, and what-if analysis using Microsoft Excel.   | 1.00    |
| 1010311500    | <b>MS Word Beginning</b><br>This course will cover creating a flyer, research paper, and business letter using Microsoft Word.   | 1.00    |
| 3180410100    | <b>Math Skills</b><br>Develops skills in using mathematics principles, essential to the technical service and production workplace, through applied learning contexts. Content includes whole numbers, fractions, percent, graphs, and fundamentals of algebra. Corequisite: 1044210300 Print Reading.   | 1.00    |
| 1046212100    | <b>Mechanical Drive Systems</b><br>Students will learn how to install a drive and properly align a shaft.  | 1.00    |
| 1046212400    | <b>Belt and Chain Drives</b><br>Students will learn how to properly install and adjust drive components.   | 1.00    |
| 1046212700    | <b>Lubrication and Sealing Shafts</b><br>Students will learn about proper lubricants and seals for an application.   | 1.00    |
| 1046212900    | <b>Common Bearings in Advanced Gear Drives</b><br>Students will learn about several bearing styles and common use in a gear drive application.   | 1.00    |
| 1046218000    | <b>Design and PLC Program</b><br>Students will learn about the main components of a PLC and how to write a program.  | 1.00    |
| 1046218200    | <b>PLC Troubleshooting Processes</b><br>Students will learn how to troubleshoot a faulty PLC program.  | 1.00    |
| 1062012300    | <b>Three Phase Electric Motor Control</b><br>Students will learn about safety, 3 phase power transformation and manual control of three phase motor control systems.   | 1.00    |
| 1062012500    | <b>Investigate Troubleshooting Methods</b><br>Students will learn about the types and methods of troubleshooting for 3 phase motor control systems.  | 1.00    |

| Course #   | Course Title  | Credits |
|------------|---|---------|
| 1062012700 | Troubleshooting Common Motor Circuits<br>Students will examine the function and troubleshooting of reversing, automatic and timer controlled industrial motor control systems.  | 1.00    |
| 3146230100 | Industrial Mechanical Capstone<br>Students will work on a final project to demonstrate a culmination of competencies learned throughout the program.  | 1.00    |
| 1044910000 | Industrial Safety Fundamentals<br>Introduces general safety for a manufacturing environment while raising the awareness of the worker to the hazards around them, and how to best protect themselves while working safely. Students will earn an OSHA 30 card and confined space certificate upon completion. | 2.00    |

**Total Credits: 31.00**

Talk with a Success Coach about the program outline. Together, you will determine if credits you've already earned satisfy any requirements, discuss possible alternative courses, and choose the best classes if you're thinking of transferring.

## At A Glance

### How You'll Learn

### 2024 Start Dates

|            |            |
|------------|------------|
| January 8  | June 3     |
| February 5 | July 1     |
| March 4    | August 26  |
| May 6      | October 21 |

[VIEW FULL ACADEMIC CALENDAR](#)

### Program Tuition\*

**\$6,947**

## Books & Supplies\*

\$861

\*Total cost for degree completion is estimated by current course requirements, books, and supplies. Tuition and fees are set by the Wisconsin Technical College System and subject to change.

Financial Aid Eligible

► [Potential Indirect Costs](#)

## Important Note:

Credit hours and financial aid hours will not always align. Please work with your Success Coach.

## What You'll Learn

- Practice industry recognized safety practices and guidelines, including the use of personal protective equipment in an industrial operating environment.
- Prepare and maintain documentation of work orders, repair work completed, and safety procedures implemented.
- Install, maintain, troubleshoot and repair industrial machinery and manufacturing equipment, using appropriate tools, materials, and methods.

## Your Potential Careers

- Industrial Machinery Mechanic
- Machinery Maintenance Worker
- Maintenance Mechanic
- Master Mechanic

## Median Annual Salary

|          |          |          |
|----------|----------|----------|
| \$41,906 | \$47,156 | \$43,422 |
| Local    | State    | National |

EMS1 2022.1

## Get Started

Your application can be submitted online, it takes just a few minutes to complete.

[APPLY NOW](#)