

# INDUSTRIAL MAINTENANCE

The Industrial Maintenance Technology program prepares students for entry-level employment and/or potential further study in the fields of Industrial Technology / Industrial Maintenance. Students completing courses in the area will acquire skills in the area of electricity, motor controls and programmable motor drives, programmable logic controllers, hydraulics/pneumatics, industrial mechanics and various welding methods.



## WHAT YOU WILL LEARN

- Industrial Mechanics • Machining • Electricity & Troubleshooting Electrical Circuits •
- Blueprint Reading • Welding • Fabrication • Hydraulics/Pneumatics • Refrigeration & Boilers •
- Designing Electrical Circuits • Reading & Interpreting Schematics •
- Programmable Logic Controllers • Variable Frequency Drives

## WHERE DO YOU SEE YOURSELF?

- Industrial Maintenance Technician • Industrial Machine Operator • Industrial Electrician •
- Hospital Engineer • Corrections Facilities Maintenance • Food Service Technician •

## PAY RANGE

Average salary for entry-level is between \$20-26 per hour.

After 3-5 years of experience, salary can increase to between \$30-40 per hour.

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# DEGREE & CERTIFICATES OFFERED

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Associate of Science in Industrial Maintenance Technology - 60 units  
Certificate of Achievement in Industrial Maintenance Technology - 30 units

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## CLASSES YOU WILL TAKE

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### **ITEC 110 Electricity and Electronic**

This course covers alternating and direct currents, including circuit basics, construction, and testing of industrial electrical circuits and applications for relays, transformers, and relay ladder logic. Fundamentals of industrial electronics and solid-state devices will be studied, in addition to magnetism, DC and AC motors, and their applications. Other topics will be digital electronics, standards, and codes.

### **ITEC 111 Manufacturing Processes**

This course studies industrial machining to include the lathe and milling machines. Other topics will be Gas Metal Arc Welding (GMAW), Shielded Metal Arc Welding (SMAW), and Gas Tungsten Arc Welding (GTAW). Industrial safety and preventative maintenance are studied.

### **ITEC 112 Welding Principles 1**

Topics will be GMAW, SMAW, and GTAW welding. Industrial safety and preventative maintenance are studied. Practical applications will be in creating projects in steel and stainless using all three modes of welding. Students will become competent in all three modes.

### **ITEC 120 Programmable Logic Controllers**

This is a course in industrial computers and Programmable Logic Controllers. The student will be able to use a personal computer to identify parts of a PLC, to program and troubleshoot the PLC upon completion of this course.

### **ITEC 213 Industrial Mechanics**

This course is designed to instruct the students in the design, repair and specifications of the industrial mechanical equipment. Topics to be studied will be mechanical power transmission equipment, gear reducers, chains and belts, pumps, compressors and motors. The student will learn to repair equipment according to new equipment manufacturer's standards.

### **ITEC 222 Automated Controls**

This course offers theory and application of solid state devices used to control industrial machinery. The devices include power supplies, smart relays, variable frequency drive motor controllers, DC motor controllers, sensors and discrete and analog input and output modules. Programming of the common proprietary languages will be covered as well as troubleshooting and repair of the devices.

### **ITEC 223 Welding Principles 2**

This course offers instruction in the practice and theory of SMAW welding. This course also offers practice and theory in gas and plasma arc cutting. The student will be able to make welds in mild steel and stainless steel.

### **ITEC 224 Hydraulics and Pneumatics**

This course offers instruction in fluid power as used in an industrial environment. The course covers theory of fluid power, system design, troubleshooting and repair of both hydraulic and pneumatic systems. A hands-on lab provides job-ready experience and skills for students.

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