

Industrial Maintenance Technician

64-credit Technical Diploma

About the Program

Prepare for a career as an Industrial Maintenance Technician by gaining hands-on experience in welding, hydraulics, electricity, mechanical fundamentals, and machine alignment. While progressing through the program, students will also build skills in electronics, computerized equipment maintenance and preventative/predictive maintenance.

Maintenance technicians are in demand in all types of industries, and pay rates are often among the highest of all the trades. Successful graduation from the Industrial Maintenance Technician program will satisfy State of Wisconsin requirements for Maintenance/Millwright apprentice-related instruction.

Potential Job Titles

- Field Service Technician
- Industrial Maintenance Technician
- Maintenance Mechanic
- Maintenance Repair Mechanic
- Press Mechanic

Credit Transfer

Credits earned in the Industrial Maintenance Technician program may be transferable to institutions offering baccalaureate degrees. Visit www.wctc.edu/transfer for specific information. Since the details of credit transfers change from time to time, be sure to contact the intended college or university to verify credit transferability.

Admission Process

- Fill out a WCTC application
- Send \$30 non-refundable application fee
- Send high school transcript or GED/HSED
- Send any previous college transcripts
- Complete Skills Assessment test (COMPASS)
- Begin pursuing Financial Aid options
- Select high school courses may qualify the student for advance standing in this program

For more information, call 262.691.5200.

Required Courses		Credits
First Semester		
414-386	Industrial Electricity I	2
420-330	Industrial Blueprint Reading I	2
462-326	Machine Tool Alignment	4
462-350	Maintenance Fundamentals	4
462-390	IMT Computer Applications	1
809-321	Basic Applied Economics	1
809-345	Basic Workplace Psychology	1
Total semester credits		15
Second Semester		
414-389	Industrial Electricity II	2
462-302	IMT Co-op I	1
462-330	Machine Tool Assessment	4
462-351	Mechanical Power Transmission	4
612-110	Industrial Hydraulic Systems	2
804-304	Industrial Math I	2+
806-382	Applied Science	1
Total semester credits		16
Summer Term		
462-303	IMT Co-op II	1
Total term credits		1
Third Semester		
414-395	Industrial Electronics I	2
442-303	Related Welding I	2
462-361	IMT Alignment Applications	4
462-362	IMT System Troubleshooting	4
612-115	Industrial Pneumatic Systems	2
804-305	Industrial Math II	2+
Total semester credits		16
Fourth Semester		
414-396	Computer Equipment Maintenance	2
419-300	Fluid Power Maintenance	2
442-305	Related Welding II	2
462-363	IMT Equip Installation	4
462-364	IMT Predictive Maintenance	4
801-311	Communication in the Workplace	2+
Total semester credits		16
+ Proficiency exam available		
<i>Curriculum is current as of catalog printing. The most current curriculum requirements for graduation will be provided upon admission to program, or review at www.wctc.edu.</i>		

Industrial Maintenance Technician Required Courses			
414-386 Industrial Electricity I	2	462-326 Machine Tool Alignment	4
Discuss topics such as the atomic nature of electricity, stressing units, basic definitions and symbols, series and parallel circuits, magnetism, inductance, capacitance, generators, motors, and basic alternating current circuits.		Become familiar with the operation and alignment of the machine tools used in the maintenance field. Complete maintenance projects used in the maintenance field that meet dimensional and aesthetic requirements.	
414-389 Industrial Electricity II	2	462-330 Machine Tool Assessment	4
Explore the selection, application, troubleshooting, and maintenance of electrical control devices and circuitry. Focus on line/ladder logic diagrams, motor starters, time delay logic, AC power systems, control devices, reduced voltage starter circuits, accelerating and decelerating circuits, and reversing circuits for single, three-phase, and DC motors. Prerequisites: 414-386 Industrial Electricity I		Learn about and use alignment tools and techniques through discussion and lab. This course builds on skills developed in Machine Tool Alignment and Operation. Machine wear assessment is stressed using industry standards. Prerequisites: 462-326 Machine Tool Alignment	
414-395 Industrial Electronics I	2	462-350 Maintenance Fundamentals	4
Become familiar with electronic devices, basic digital logic, microprocessors, and programmable controllers. After gaining a background in electrical theory and electro-mechanical motor controls, discuss solid-state motor-controlled devices with an emphasis on microprocessors and programmable controllers. Prerequisites: 414-389 Industrial Electricity II		Build upon competencies learned in Machine Tool Alignment and Operation while using various alignment tools. Apply fundamentals to simulated and actual applications.	
414-396 Computer Equipment Maintenance	2	462-351 Mechanical Power Transmission	4
Gain a basic understanding of CNC and robotic theory of operation and learn to apply that theory to troubleshoot, maintain, and repair this equipment. Become competent in using manufacturer's maintenance manuals to set up and troubleshoot the machines. Prerequisites: 414-395 Industrial Electronics I		Gain hands-on experience working with mechanical power transmissions, v-belt drives, flat belts, gears, chain drives, couplings, packings, seals, and bearings. Prerequisites: 462-350 Maintenance Fundamentals	
419-300 Fluid Power Maintenance	2	462-361 IMT Alignment Applications	4
Become familiar with common maintenance activities that are necessary for industrial and mobile systems controlled by hydraulics. Take an in-depth look at the principles of circuit evaluation and component operation, construction, maintenance, and testing. Prerequisites: 612-110 Industrial Hydraulic Systems or 612- 115 Industrial Pneumatic Systems		Use the latest technology to develop machine tool alignment techniques. Projects in the shop will enhance classroom instruction. Prerequisites: 462-351 Mechanical Power Transmission	
420-330 Industrial Blueprint Reading I	2	462-362 IMT System Troubleshooting	4
Learn universally applicable techniques for interpreting all mechanical and industrial drawings through the study of drawing standards, abbreviations, basic rules for dimensioning, and various types of sectional views. Become familiar with geometric dimensioning and tolerancing.		Develop troubleshooting techniques and the ability to assess machine tool problems. Increase skills in diagnosing and repairing problems. Prerequisites: 462-361 IMT Alignment Applications (or concurrent)	
442-303 Related Welding I	2	462-363 IMT Equip Installation	4
Become skilled in various welding processes, including elementary oxyacetylene weld, brazing and cutting, and arc (stick) electrode in the flat and vertical down positions.		Become acquainted with the machine tool handling and installation techniques used in the maintenance industry. Prerequisites: 462-362 IMT System Troubleshooting	
442-305 Related Welding II	2	462-364 IMT Predictive Maintenance	4
Explore out-of-position welding in the oxyacetylene and shielded metal arc (stick) processes. Machine tool operators will become familiar with the basic GMA and GTA techniques necessary to repair dies and fixtures, while the industrial maintenance mechanic will develop more skills in the arc and gas processes. Prerequisites: 442-303 Related Welding I		Become familiar with preventive and predictive maintenance technologies using oil analysis, thermography, vibration analysis, ultra-sonics, and computer maintenance management systems. Prerequisites: 462-361 IMT Alignment Applications	
462-302 IMT Co-Op I	1	462-390 IMT Computer Applications	1
Secure related employment whenever possible. Clarify life, career, and education goals. Refine resumes and letters of application, practice interview techniques, and engage in actual job interviews students arrange. Take part in discussions with guests and employers. Prerequisites: 462-326 Machine Tool Alignment and 462-350 Maintenance Fundamentals		Study computer concepts and use computers for testing and other industrial maintenance applications.	
462-303 IMT Co-Op II	1	612-110 Industrial Hydraulic Systems	2
Secure related employment whenever possible. Further clarify and refine goals, resumes, interviewing techniques and engage in discussions with guests and employers. Prerequisites: 462-302 IMT Co-Op I		Study hydraulics as applied in modern industrial settings, including hydraulic components and their operational functions. Review the basic principles of liquid flow and their relationship to daily applications.	
		612-115 Industrial Pneumatic Systems	2
		Explore pneumatics as applied in modern industrial settings. Review the basic gas laws and principles as they relate to day-to-day applications, and study pneumatic components and their operational functions.	
		801-311 Communication in the Workplace	2
		Expand level of awareness and skill in interpersonal communications, both oral and written, while focusing on securing and maintaining a job. Develop competencies in the area of listening, sending, and employability skills.	
		804-304 Industrial Math I	2
		Explore the topics of applied arithmetic and algebra during this individualized course. Study concepts related to measurement, fractions, decimals, percents, ratio and proportion, signed numbers, formula substitution, solutions to equations, tapers and gears.	
		804-305 Industrial Math II	2
		Examine topics in geometry and trigonometry that are related to the metalworking trades. Practice applying geometric theorems and solving both right and oblique triangle problems. Prerequisites: 804-304 Industrial Math I	
		806-382 Applied Science	1
		Examine the principles related to mechanical, fluid, electrical, and thermal systems while in a laboratory setting. Focus on the measurement and application of force, rate, work, and resistance within each system.	
		809-321 Basic Applied Economics	1
		Understand business operations by studying topics such as the appreciation of profit and loss, return on investment, business expenses, daily operations, and other vital elements. This course is for students in vocational occupational programs.	
		809-345 Basic Workplace Psychology	1
		Develop the skills needed for building positive relationships with others by taking part in unique workplace scenarios and exploring psychological concepts.	