

# Industrial Maintenance Technology

When production workers encounter problems with the machines they operate, they call industrial machinery installation, repair, and maintenance workers (also called millwrights). Their work is important not only because a defective machine will delay production, but also because a machine that is not properly repaired and maintained may damage the final product or injure the operator. Much of the work begins when machinery arrives at the job site. New equipment must be unloaded, inspected, moved into position, and installed. To lift and move light machinery, industrial maintenance workers use rigging and hoisting devices, such as pulleys and cables. In other cases, they require the assistance of hydraulic lift-truck or crane operators to position the machinery. In order to perform these duties, industrial maintenance workers must know the load-bearing properties of ropes, cables, hoists, and cranes. Industrial maintenance workers need to know how to read blueprints and work with building materials, such as concrete, wood, and steel in case new equipment requires a new foundation. Other duties include assembling machinery, which requires workers to fit bearings, align gears and wheels, attach motors, and connect belts according to the manufacturer's instructions. Industrial maintenance workers use hand- and power-tools, such as cutting torches, welding machines, and soldering guns.

## Skills and Competencies

Students considering a career in the Industrial Maintenance field have a knowledge of mathematics, as it is crucial. Workers have to measure angles, material thickness, and small distances with tools such as squares, calipers, and micrometers. High school courses in mechanical drawing, mathematics, blueprint reading, physics, and electronics are useful. Electronic and computer skills are helpful as machinery becomes more sophisticated. Good physical health and agility are necessary.

## Course Work

This degree includes the following courses as part of the program requirements, and specific major requirements along with general education and graduation requirements.

### Core

- IM105 Applied Technical Mathematics (4 cr.)
- IM110 Industrial Measurement & Fabrication (2 cr.)
- IM115 Basic Electricity for Industrial Tech. (2 cr.)
- IM125 Introduction to OSHA (3 cr.)
- IM147 Rigging and Hoisting (2 cr.)
- IM214 Alignment, Power Transmission and Conveyors (3 cr.)
- IM215 Mechanical Power Transmission Maintenance Systems (3 cr.)
- IM220 Pumps, Piping and Valves (4 cr.)
- IT180 Introduction to Fluid Power (3 cr.)
- MF134 Manufacturing Process (4 cr.)
- WD140 Introduction to Welding (3 cr.)
- WD243 Advanced Arc Welding (2 cr.)
- WD244 Welding Inspection and Assessment (1 cr.)
- WD280 Introduction to Fabrication (3 cr.)

### Other required courses

- EN111 College Composition I (4 cr.)
- General Education Electives (11 cr.)

### Electives (6 cr.)

*Detailed course descriptions can be found at [www.nmu.edu/bulletin](http://www.nmu.edu/bulletin).*

## Career Development

You should begin the resume-building process as soon as you can. The Academic and Career Advisement Center can assist you with career planning, while Career Services will help you fine tune your resume and look for jobs related to your field. In the meantime, the more hands-on experience you have, the better the chances are that you will find a job. Becoming involved in a field-related internship is a way to develop your professional network, enhance your skills and proficiencies, and gain experience. Your academic course work is important as well, so be sure to maintain a high grade point average.

## Additional Considerations

Northern Michigan University offers a one-year Certificate program and an Associate in Applied Science degree which requires 63 credits or approximately four semesters.

This degree will ladder into the industrial technology baccalaureate degree program meaning you can apply the 63 credits toward a 124 credit baccalaureate degree. Having an associate degree may help you find a better job while going back to get the second degree.

## Job Outlook

Industrial Maintenance Technology is expected to grow at an average rate in the coming years, expanding at a 7% pace depending on what career you choose. The median income \$28.55 per hour for industrial machinery mechanics, machinery maintenance workers, and millwrights.

# Potential Careers

NMU's Industrial Maintenance Technology Program prepares students for employment in the following careers:

- Blast Furnace Maintenance
- Chemical Plants
- Electrical Plants
- Fabricated Metal Plants
- Food Processing Plants
- Meat Processing Plants
- Metal Processing Plants
- Mining Operations
- Plastics Material Synthetics Plant
- Textile Mills

# Additional Resources and Information

For Career Planning and Opportunities:  
Academic & Career Advisement Center  
3302.1 C.B. Hedgcock  
906-227-2971  
[www.nmu.edu/acac](http://www.nmu.edu/acac)

Department of Technology and Occupational  
101 Jacobetti Complex  
906-227-2190  
[www.nmu.edu/tos](http://www.nmu.edu/tos)

For Job Search, Resume and Career Information:  
Career Services  
3302.3 C.B. Hedgcock  
906-227-2800  
[www.nmu.edu/careers](http://www.nmu.edu/careers)

For Information about NMU Student Organizations Associated with this Major Contact:  
Center for Student Enrichment  
1206 University Center  
906-227-2439  
[www.nmu.edu/cse](http://www.nmu.edu/cse)

Internet Resource Links:  
[www.careers.org](http://www.careers.org)  
[www.bls.gov](http://www.bls.gov)

For Career Information with National Organizations:  
[www.ntma.org](http://www.ntma.org) -The National Tooling/Machining Association  
[www.pmpa.org](http://www.pmpa.org) -Precision Machined Products Association



**NORTHERN MICHIGAN  
UNIVERSITY**

The Academic & Career Advisement Center  
2022



What to do with  
a major in...

**Industrial Maintenance  
Technology**  
Associate's Degree

