

Welding Technology

The Welding Technology Associates program develops welders for the manufacturing industry. It also prepares students for positions in fabrication facilities such as ore processing plants, paper mills, wood processing plants and marine vessels.

The program produces students who are excited and ready to use the skills that they gained from the courses into the workforce. Within the program students will get hands-on application of shielded metal arc welding, gas tungsten arc welding, and gas metal arc welding. Students will learn the necessary skills to succeed in this profession such as the safe use of equipment and tools, blueprint reading, precision measurement, steel identification, and fabrication techniques. Students also learn basic joining and severing processes used in metal fabrication industries and knowledge of proper setup and maintenance of welding equipment. Emphasis is placed on SMAW, GMAW, and GS-FCAW welding. They also have the opportunity to perform tests that conform to the parameters of the American Welding Society plate tests and earn the student qualification papers.

In this profession you can expect to weld components in flat, vertical, or overhead positions, operate safety equipment, and use safe work habits. Professionals layout, position, align, and secure parts and configurations prior to assembly using straightedges, combination squares, calipers, and rulers. They examine workpieces for defects and measure workpieces with straightedges or templates to ensure conformance with specifications, and must be able to recognize, set up, and operate hand and power tools common to the welding trade, such as shielded metal arc and gas metal arc welding equipment.

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.

General Electives (15 cr.)

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

Technical Core (43 cr.)

- IM105 Applied Technical Mathematics (4 cr.)
- IM110 Industrial Measurement and Print Reading (2 cr.)
- IM115 Basic Electricity for Industrial Technicians (2 cr.)
- IM125 Introduction to OSHA (3 cr.)
- WD140 Introduction to Welding (3 cr.)
- WD180 Multi-Positional Welding (3 cr.)
- WD220 Introduction to Robotic Welding (2 cr.)
- WD243 Advanced Multi-Positional Welding (2 cr.)
- WD244 Welding Inspection and Assessment (1 cr.)
- WD251 Introduction to Pipe Welding (2 cr.)
- WD252 Advanced Pipe Welding I (3 cr.)
- WD253 Introduction to Gas Tungsten Arc Welding (2 cr.)
- WD254 Advanced Gas Tungsten Arc Welding (3 cr.)
- WD255 Advanced Pipe Welding II (3 cr.)
- WD270 Weld Testing and Certification (2 cr.)
- WD280 Introduction to Fabrication (3 cr.)
- WD281 Advanced Fabrication (3 cr.)

Electives (2 cr.)

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.

Skills and Competencies

The Associate of Applied Science (A.A.S.) degree in Welding Technology is designed to prepare graduates for a career as a welding technician in the fabrication, construction, and manufacturing industries. The program includes hands-on application of shielded metal arc welding (SMAW), gas tungsten arc welding (GTAW), and gas metal arc welding (GMAW). The students will also be exposed to inspection procedures, safety skills, and basic robotic programming and welding skills.

Job Outlook

The projected job growth for a career with Welding Technology Associates is to increase 8 percent by 2029. The median range for a career with this degree is \$20/hour. This does vary due to the wide range of careers that can be pursued from this degree.

There is currently a shortage of skilled welders in all industry areas such as paper mills, wood processing plants, marine vessel fabrication facilities, and micro-brewing and distilling equipment fabrication. Plus, a shortage of 400,000 welders is predicted in the next four years.

Additional Considerations

Northern Michigan University offers a one-year Certificate program and an Associate in Welding Technology degree which requires 60 credits or approximately four semesters.

Potential Careers

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

- Welder
- Maintenance Technician
- Tig Welder
- Fabricator
- Welding Inspector
- Pipe Welder
- Maintenance Mechanic
- Quality Control Inspector
- Shop Foeman

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

Department of Technology and Occupational
101 Jacobetti Complex
906-227-2190
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

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

Internet Resource Links:
www.careers.org
www.bls.gov



**NORTHERN MICHIGAN
UNIVERSITY**

The Academic & Career Advisement Center
2022



What to do with
a major in...

Welding Technology
Associates of Applied Science

