

Advanced Welding
Diploma | 65 credits

Campus: Mesabi Range, Eveleth

FIRST YEAR		CREDITS	HOURS LEC/LAB
FALL SEMESTER 2024 – 16 Credits			
WELD 1221	Introduction to Shielded Metal Arc Welding (SMAW)	1	1/0
WELD 1222	Basic Shielded Metal Arc Welding (SMAW) Skills	2	0/4
WELD 1223	Shielded Metal Arc Welding (SMAW) Low Hydrogen Skills	2	0/4
WELD 1224	Shielded Metal Arc Welding (SMAW) Alloyed Metal Skills	2	0/4
WELD 1231	Introduction to Thermal Cutting Processes	1	1/0
WELD 1232	Flame Joining Processes	1	0/2
WELD 1233	Cutting and Gouging Processes	4	0/8
WELD 1234	Metal Prep Equipment, Operation, and Safety	1	.5/1
WELD 1255	Welding Mathematics	1	1/0
GENS 1170	Introduction to Computer Applications	1	0/1
SPRING SEMESTER 2025 – 17 Credits			
WELD 1241	Blueprint Reading	1	1/0
WELD 1261	Gas Metal Arc Welding (GMAW) 1	1	.5/1
WELD 1262	Gas Metal Arc Welding (GMAW) 2	2	0/4
WELD 1271	Gas Tungsten Arc Welding (GTAW) 1	3	1/4
WELD 1272	Gas Tungsten Arc Welding (GTAW) 2	2	0/4
WELD 1281	Flux Core Arc Welding (FCAW) 1	2	0/4
WELD 1282	Flux Core Arc Welding (FCAW) 2	2	0/4
WELD 2257	Rigging for Welders	1	.5/1
COMM 1400	Communication for Career Success	3	3/0
SECOND YEAR			
FALL SEMESTER 2025 – 15 Credits			
WELD 2240	Properties of Welding 1	1	1/0
WELD 2242	Advanced Blueprint Reading	1	1/0
WELD 2244	Shielded Metal Arc Welding (SMAW) – Structural	2	0/4
WELD 2245	Gas Tungsten Arc Welding (GTAW) – Pipe and Tube	3	0/6
WELD 2252	Gas Tungsten Arc Welding (GTAW) 3	3	0/6
WELD 2265	Computed Numerically Controlled (CNC) Programming and Cutting	3	2.5/1
WELD 2275	Stainless Steel Welding	2	0/4
SPRING SEMESTER 2026 – 17 Credits			
WELD 1251	Assigned Projects	1	0/2
WELD 2241	Shielded Metal Arc Welding (SMAW) – Pipe	5	0/10
WELD 2243	Flux Core Arc Welding (FCAW) 3	4	0/8
WELD 2251	Gas Metal Arc Welding (GMAW) 3	4	0/8
WELD 2253	Template Development	2	2/0
PDEV 1130	Employment Strategies	1	1/0

PROGRAM DESCRIPTION

Advanced Welding is a 65 credit, 4 semester diploma program which includes the Entry Level Welding Diploma (Semesters 1 and 2) and an additional two semester (3 and 4) of advanced work.

PROGRAM LEARNING OUTCOMES

1. Build skills toward industry standards.
2. Build skills toward American Welding Society certifications.
3. Work as an effective and dependable team member as well as independently.
4. Demonstrate safe work habits that reflect concern and care for self, others, and the environment.
5. Develop the skills necessary to secure employment.

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2024-25 PROGRAM PLANNER

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ACCREDITATION

The [American Welding Society \(AWS\)](#) was founded in 1919, as a nonprofit organization with a global mission to advance the science, technology and application of welding and allied joining and cutting processes, including brazing, soldering and thermal spraying. AWS strives to move the industry forward in both thought and action, as well as inspire new generations to see the exciting career opportunities available today.

PROGRAM NOTES

- The typical Welding Technology Program student applicant has had some experience with welding and cutting. However, students that have never welded before have successfully completed this program and have gone on to become certified welders.
- [Differential tuition is assessed for the WELD courses.](#)

EMPLOYMENT OPPORTUNITIES

Successful graduates have gone to work at USX MinnTac, Virginia, MN; ArcelorMittal Minorca Mine, Virginia, MN; L & M Radiator, Hibbing, MN; Electric Power Door, Hibbing, MN; Furin & Shea, Hibbing, MN; Terex, Grand Rapids, MN; Serco Loaders, Two Harbors Machine, Two Harbors, MN; Stanley/LaBounty, Two Harbors, MN; Savage Trailers, Angora, MN; Boilermakers Local Union; Millwrights Local Union, Virginia, MN; Ironworkers Local Union, Minneapolis, MN; and many places in the Minneapolis/St. Paul Metro Area and the surrounding suburbs. Some have gone out-of-state, and a few have even gone overseas.

Positions include welder, fitter, welder helper, weld shop supervisor, welder/lead-man, welding apprentice trainer, boilermaker, pipefitter, welding robot operator, sheet metal worker, millwright/welder, quality assurance manager, welding inspector, plant superintendent, welding business owner and more.

PROGRAM FACULTY

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