

Welding Technology Programs

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The Welding Technology program offers several options: two career pathway certificates, a three-term Welding certificate, and the six-term Welding Fabrication AAS degree. The Arc Welding certificate and the MIG Welding certificate focus on two specialized types of welding; the Welding certificate combines training with classes in the background knowledge needed by workers in welding occupations. You practice and develop your welding skills in the laboratory and may take an examination for certification in plate welding. The Welding Fabrication degree program is for those who want to acquire the technical knowledge and skills required for workers in welding, fabrication, and related occupations.

Welding fabrication technicians are skilled in the use of oxyacetylene welding and cutting equipment, manual arc, tungsten inert gas (TIG), and metallic inert gas (MIG) processes and have a working knowledge of shop blueprints and welding symbols, jig fabrication, and assembly processes.

The certificate programs have been designed to be completed in one year or less and the degree program in two years if you attend full time. However, there are entry-level expectations for skill levels in reading, writing, and mathematics. The length of time you take to complete the program will depend on your skills in these areas. To assess the time you will need to complete the program, please meet with the program chair.

Program outcomes

Students completing the Arc Welding certificate or the MIG Welding certificate should be able to:

- Set up and operate shielded metal arc welding (SMAW) equipment or the gas metal arc welding (GMAW) equipment used in the welding/metal fabrication industry
- Perform basic layout and fabrication skills to produce welded metal parts and products
- Read and interpret engineering drawings to American Welding Society standards

In addition to the Arc or MIG Welding certificate outcomes, students completing the Welding certificate should be able to:

- Set up and operate manual and semi-automatic welding and cutting equipment used in the metal fabrication industry
- Use welding process and procedure applications
- Apply basic metallurgy knowledge to fabrication processes
- Perform as a team member and practice skills that reflect professional and ethical behavior in the workplace

In addition to the certificate outcomes, students completing the degree should be able to:

- Perform basic set-ups and operations for manual and computer numeric controlled machining equipment
- Design and carry out planning procedures for welding purposes
- Select and use tools and equipment to manufacture, measure, and inspect parts in a welding environment.

Getting started

The first step to entering these programs is to take part in an assessment process, which includes taking the college's free placement test and meeting with Advising and Counseling Services staff. You may need to complete program entry requirements. Then your advisor will help you develop an individualized program of study, which may include one or more of the following:

MTH020	Basic Mathematics.....	4
RD090	College Textbook Reading.....	3

If you have questions about the requirements, contact the Welding department at 503.399.6059 or e-mail mike.pintler@chemeketa.edu.

For admission to the program, an application is required. This is a separate step from the testing and assessment steps. Applications are available at <http://www.chemeketa.edu/programs/welding/documents/WeldingTechApp2015.pdf>.

Enrollment in these programs is limited, and there is an early deadline for applications. All applicants must attend the Welding Technology Orientation as a requirement for acceptance into the program. We recommend that you contact Advising and Counseling Services at 503.399.5120, or the Welding Technology program chair at 503.399.6059 for details if you are considering the Welding certificate or the Welding Fabrication degree programs.

Welding Fabrication AAS

Arc Welding Certificate of Completion

This program combines hands-on training in the use of SMAW welding equipment with the associated coursework needed for success in the field. The program assists students in meeting the entry-level qualifications of the welding industry and prepares them to take the American Society of Welding's D1.1 Structural Welding Code Performance Qualification examination. This certificate is wholly-contained within the



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Welding Fabrication AAS degree program and may serve as the first step in a career pathway toward the degree.

In addition to tuition, estimated costs for students who complete the entire program listed below are books, \$200; class fees, \$869; universal fee, \$266; equipment and supplies, \$500; certification test, \$400 (optional). Contact the Financial Aid Office at 503.399.5018 to find out if you qualify for help with these costs.

You may earn a certificate of completion by successfully completing the required 19 credit hours with a grade of "C" or better in all courses.

Course	Title	Credit Hours
Term 1		
WLD151	Basic Arc Welding	5
WLD156	Blueprint Reading and Sketching.....	4
Term 2		
WLD152	Intermediate Arc Welding	5
WLD157	Introduction to Layout and Fabrication.....	2
Term 3		
WLD153	Advanced Arc Welding	3

Welding Fabrication AAS

MIG Welding Certificate of Completion

This program combines hands-on training in the use of GMAW welding equipment with the associated coursework to develop the skill sets needed for success in the field. The program assists students in meeting the entry-level qualifications of the welding industry and prepares them to take the American Society of Welding's D1.1 Structural Welding Code Performance Qualification examination. This certificate is wholly-contained within the Welding Fabrication AAS degree program and may serve as the first step in a career pathway toward the degree.

In addition to tuition, estimated costs for students who complete the entire program listed below are books, \$150; class fees, \$564; universal fee, \$168; equipment and supplies, \$550; certification test, \$400 (optional). Contact the Financial Aid Office at 503.399.5018 to find out if you qualify for help with these costs.

You may earn a certificate of completion by successfully completing the required 12 credit hours with a grade of "C" or better in all courses.

Course	Title	Credit Hours
Term 1		
WLD156	Blueprint Reading and Sketching.....	4
Term 2		
WLD157	Introduction to Layout and Fabrication.....	2
WLD161	Basic Gas Metal Arc Welding (MIG)	3
Term 3		
WLD163	Advanced Gas Metal Arc Welding (MIG)	3

Welding Fabrication AAS

Welding Certificate of Completion

This program prepares you for a variety of positions in job specialty production and maintenance shops. Graduates may

find work as MIG welders, arc welders, oxyacetylene welders, semiautomatic welding equipment operators, and TIG welders.

In addition to tuition, estimated costs for students who complete the entire program listed below are books, \$402; class fees, \$1,316; universal fee, \$700; equipment and supplies, \$750; certification test, \$400 (optional). Contact the Financial Aid Office at 503.399.5018 to find out if you qualify for help with these costs.

You may earn a certificate of completion by successfully completing the required 50 credit hours with a grade of "C" or better in all courses.

Course	Title	Credit Hours
Term 1		
MTH052	Introduction to Algebra and Geometry+ (or higher).....	3
WLD151	Basic Arc Welding	5
WLD156	Blueprint Reading and Sketching.....	4
WLD161	Basic Gas Metal Arc Welding (MIG)	3
WLD170	Oxyacetylene Processes.....	3
Term 2		
PSY101	Psychology of Human Relations+ (or higher)	4
WLD152	Intermediate Arc Welding	5
WLD157	Introduction to Layout and Fabrication.....	2
WLD162	Intermediate Gas Metal Arc Welding (MIG).....	3
WLD173	Basic Gas Tungsten Arc Welding (TIG).....	4
WR088	Introduction to Technical Writing 1+ (or higher) ...	3
Term 3		
WLD153	Advanced Arc Welding	3
WLD155	Fabrication Procedures.....	3
WLD163	Advanced Gas Metal Arc Welding (MIG)	3
WLD180	Metallurgy for Welders.....	2

+Meets related instruction requirement, see page 50. For subject areas, see page 56.

Welding Fabrication Associate of Applied Science Degree

As a graduate of the Welding Fabrication program, you may qualify for positions in business and industry such as machinery fabrication, structural fabrication, welding fitting and layout, automatic and semiautomatic welding, automatic flame cutter operation, millwright welding, plant maintenance, and quality control and development.

The program offers you a background in manufacturing materials, processes, and systems, including shear and press brake operation, blueprint reading, and shop drawing and layout. The curriculum includes written and oral communications and general education classes and emphasizes related scientific, mathematical, and general mechanical principles.

At the end of the third term you may take a plate certification test. The fee for this test is determined by the number of students involved and the type of test.

In addition to tuition, estimated costs for students who complete the entire program listed below are books, \$909; class fees, \$2,093; universal fee, \$1,358; equipment and supplies, \$750; certification test, \$400 (optional). Contact the Financial Aid Office at 503.399.5018 to find out if you qualify for help with these costs.

You may earn an associate of applied science degree by successfully completing the required 97 credit hours with a grade of "C" or better in all courses.

Course	Title	Credit Hours
Term 1		
MTH052	Introduction to Algebra and Geometry+ (or higher).....	3
WLD151	Basic Arc Welding	5
WLD156	Blueprint Reading and Sketching.....	4
WLD161	Basic Gas Metal Arc Welding (MIG)	3
WLD170	Oxyacetylene Processes.....	3
Term 2		
WLD152	Intermediate Arc Welding	5
WLD157	Introduction to Layout and Fabrication.....	2
WLD162	Intermediate Gas Metal Arc Welding (MIG).....	3
WLD173	Basic Gas Tungsten Arc Welding (TIG).....	4
WR088	Introduction to Technical Writing 1+ (or higher) ...	3
Term 3		
PSY101	Psychology of Human Relations+ (or higher)	4
WLD153	Advanced Arc Welding	3
WLD155	Fabrication Procedures.....	3
WLD163	Advanced Gas Metal Arc Welding (MIG)	3
WLD180	Metallurgy for Welders.....	2
Term 4		
CAM110	Benchwork and Manual Fundamentals	4
CAM111	Industrial Safety Seminar	1
DRF130	CAD 1	3
MTH053	Introduction to Trigonometry with Geometry (or higher).....	3
WLD250	Fabrication Practices 1	3
Term 5		
CAM120	Manual Milling Processes	4
DRF210	Parametric Design with SolidWorks	3
GS104	General Science: Physics (or higher)	4
WLD251	Fabrication Practices 2	3
WR089	Introduction to Technical Writing 2	3
Term 6		
CAM062	Practical Applications 2	2
CAM121	Manual Lathe Processes	4
WLD258	Weld Shop Problems.....	7
WLD273	Advanced TIG Welding.....	3

+Meets related instruction requirement, see page 50. For subject areas, see page 56.