



## **Welding & Metal Fabrication Program**

### **Industry Description**

Welding is the most common way to permanently join metal parts. Heat is applied to the pieces that are being joined; melting and fusing them together which forms a permanent bond. The welding field is so diverse that it touches just about every career choice that is available today.

A Career choice in welding offers a vast array of options for employment and continuing personal development. Welding has a direct impact on everything we see, touch or use in our daily lives. Welding plays a key role in industry production lines, laboratories, research and development, national defense, sales & service, NASCAR and Drag racing, custom motorcycle building, artwork, sculptures, pipelines, power plants, refineries, construction of all kinds and maintenance & repair to mention just a few areas. Actually, the diversification of the welding industry impacts virtually every industry around the globe. From the depth of the world's oceans to the far-reaching corners of outer space, there is a welding position in this industry for every hard working, ambitious, smart individual that is ready and willing to constantly improve him or herself while always striving for excellence.

### **Wages /Outlook/Advancement**

Wage information is available from the Minnesota Department of Education and the [Minnesota Department of Employment and Economic Development](#)

Welders and solderers can advance to more skilled jobs with additional training and experience. For example, they may become technicians, supervisors, inspectors, or instructors. Some experienced welders and solderers open their own repair shops.

### **Program Description**

The Welding Technology Program consists of technical courses, specifically designed to develop exceptional welding skills utilizing the major welding processes that are vital to industry. Although no prior knowledge or experience is necessary to succeed in this program, prospective students should have a high school diploma or GED, good physical health and stamina, good hand-eye coordination and manual dexterity. Helpful high school classes include general math, drafting, welding, machine shop, and construction/carpentry. Students should be able to lift a 60-pound spool of wire and a 50-pound box of welding rods and should be able to pass an industrial physical examination (requirements may vary). This program not only provides students with a thorough background in welding and related theory, but also prepares students with the knowledge and skills needed to pass the American Society of Mechanical Engineers, the American Petroleum Institute and the American Welding Society's welding code certification examinations.

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(Program plans are subject to change. Please contact the program chair for the most current information.)

**IMPORTANT ACCUPLACER Test Requirement:** ACCUPLACER testing in math, reading and writing. Any needed developmental courses must be completed before receiving a diploma or an A.A.S. award.

## **Program Essentials**

### **Length of Program**

Welding Associate of Applied Science	67 credits
Basic Welding Certificate	17 credits
Advanced Welding Certificate	17 credits
Fabricator Certificate	15 credits
Pipe Welder Certificate	13 credits

### **Start Dates**

Fall Semester	August
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### **Program Contact**

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For information on how to apply or to schedule a campus tour, please contact the Admissions Office by phone at (763) 576-4850

E-mail [info@anokatech.edu](mailto:info@anokatech.edu)

## **Basic Welding Certificate**

### **17 Credits**

The first semester is designed for individuals who want quick access into the welding careers.

<b>Technical Education</b>	<b>17 Credits</b>
WELD 1004 Oxy-Fuel Applications	1
WELD 1006 Oxy-Fuel Processes	1
WELD 1002 Math for Welders	1
WELD 1008 Blueprint Reading I	2
WELD 1012 Processes & Power Sources I	3
WELD 1014 Gas Tungsten Arc Welding I	3
WELD 1016 Gas Metal Arc Welding I	3
WELD 1018 Shielded Metal Arc Welding I	3

## **Advanced Welding Certificate**

### **17 Credits**

The second semester is designed for individuals who possess basic welding skills and want to further their knowledge and proficiency. By mastering the more advanced welding disciplines, these individuals will expand their ability to choose more rewarding career opportunities.

<b><u>Technical Education</u></b>		<b><u>17 Credits</u></b>
WELD 1022	Blueprint Reading II	3
WELD 1024	Metals Theory I	2
WELD 1026	Processes & Power Sources II	3
WELD 1028	Gas Tungsten Arc Welding	3
WELD 1034	Gas Metal Arc Welding II	3
WELD 1036	Shielded Metal Arc Welding II	3

## **Fabricator Welding Certificate**

### **15 Credits**

The third semester offers individuals the opportunity to develop skills necessary for construction, manufacturing, building and fabrication of real weldments. These people generally have good welding ability, but desire the skills for actual applications.

<b><u>Technical Education</u></b>		<b><u>15 Credits</u></b>
WELD 1205	Fabrication Project I	5
WELD 1209	Basic Pipe Welding	5
WELD 1211	Fabrication Project II	5

## **Pipe Welder Certificate**

### **13 Credits**

The Fourth Semester is designed for those individuals that want the highest skill level. These individuals will have the skill required to master manual pipe welding, the most demanding manual welding discipline. Individuals that successfully complete this course will possess the skills required to obtain the highest paying jobs in welding.

<b><u>Technical Education</u></b>		<b><u>13 Credits</u></b>
WELD 1229	GMAW 5G & 6G Pipe	3
WELD 1235	GTAW 5G & 6G Pipe	5
WELD 1244	SMAW 5G & 6G Pipe	5

**Welding**  
**Associate of Applied Science Degree**  
**67 Credits**

The Associate of Applied Science degree is designed for individuals who prefer a well-rounded welding background. This option offers a balance of general education courses and welding disciplines to provide students with opportunity to capitalize on a broad based welding education.

**General Education: 18 Credits of MN Transfer Curriculum**

Eighteen general education credits are required of MN Transfer Curriculum courses. *One course must be MATH 1500 – Mathematical Ideas (3) credits.* The balance of general education courses must be taken from three or more additional MN Transfer Curriculum goal areas. Refer to the ATC website for a list of the MN Transfer Curriculum courses and their goal areas:

[http://www.anokatech.edu/current\\_students/transfer/](http://www.anokatech.edu/current_students/transfer/)

<b><u>Technical Education</u></b>	<b><u>50 Credits</u></b>
Complete the technical education courses as noted for the Basic Welding Certificate	17
Complete the technical education courses as noted for the Advanced Welding Certificate	17
Complete the technical education courses as noted for the Fabricator Certificate	15