

# Welding and Fabrication

Diploma (D380)

Technical Requirements ..... 45

**Total Credits .....45**

## Program Description

The Welding and Fabrication program is designed to create a foundation of skills and knowledge, leading to a career in welding and fabrication. Instructors bring a wealth of industry experience and professionalism to the program. The welding lab is state-of-the-art, and the area is spacious, clean and well-ventilated, and features the latest equipment for a superior training environment. At CLC, welding students are prepared with techniques that will elevate their skill set above the average student. CLC students develop skills in welding processes, cutting processes, metallurgy, fabrication, blueprint reading, and math. Upon completion of the program, students will be prepared to take welding certification and job entry tests.

## Program Outcomes

By completing this program, students will achieve the following learning outcomes:

- Apply proper industry safety standards;
- Apply welding and cutting safety procedures;
- Identify proper welding consumables and fluxes for a selected process;
- Perform a variety of welding processes using appropriate equipment and setup procedures and for GMAW, SMAW, GTAW, and OAW;
- Apply principles of basic welding fundamentals, symbols, blueprints and welding metallurgy;
- Design and execute fabrication projects to specifications;
- Read and interpret fabrication blueprints and drawings; and
- Demonstrate effective written and oral communication skills.

## Transfer Opportunities

Some welding courses can be transferred to a variety of the four-year colleges. Because each college has its own requirements, check with an advisor about transferability.

## Career Opportunities

Upon graduation, welding students will be prepared for careers in the construction, pipe line, metal fabrication, manufacturing, repair, and specialty/custom job fields. Jobs that utilize arc welding, gas metal arc welding, flux core, TIG, oxyacetylene cutting, plasma cutting, and general fabrication are examples of the choices available to graduates. The welding and fabrication field is ideal for the person who likes hands on work. Common career titles include production welder, welder fabrication person, metal fabrication person, shop foreman in fabrication, welding shop foreman, welding shop owner or manager, welding supply salesperson, and welding product salesperson.

## Program Course Requirements

CCST 1530	Employment Strategies .....	3 cr
WELD 1100	Introduction to Welding .....	2 cr
WELD 1101	Shielded Metal ARC Welding I.....	2 cr
WELD 1102*	Shielded Metal ARC Welding II.....	3 cr
WELD 1111	Blueprint Reading I.....	2 cr
WELD 1112*	Blueprint Reading II (Welding Symbols).....	2 cr
WELD 1113*	Blueprint Reading III (CAD Systems).....	2 cr
WELD 1115	Gas Tungsten ARC Welding I .....	2 cr
WELD 1116*	Gas Tungsten ARC Welding II .....	3 cr
WELD 1117	Gas Metal ARC Welding I.....	2 cr
WELD 1118*	Gas Metal ARC Welding II.....	3 cr
WELD 1120*	Fabrication Design and Construction .....	4 cr
WELD 1134*	Welding Qualification.....	3 cr
WELD 1140	Welding Trade Knowledge .....	4 cr
WELD 1150*	Advanced Metal Fabrication/CNC Automation .....	4 cr
WELD 1160	Welding Theory .....	4 cr

### GRADUATION REQUIREMENT - 45 CREDITS

*\*Denotes Prerequisites*

## Semester Course Requirements

### Semester One (18 credits)

WELD 1100	Introduction to Welding .....	2 cr
WELD 1101	Shielded Metal ARC Welding I .....	2 cr
WELD 1111	Blueprint Reading I .....	2 cr
WELD 1115	Gas Tungsten ARC Welding I .....	2 cr
WELD 1117	Gas Metal ARC Welding I .....	2 cr
WELD 1140	Welding Trade Knowledge .....	4 cr
WELD 1160	Welding Theory .....	4 cr

### Semester Two (18 credits)

CCST 1530	Employment Strategies .....	3 cr
WELD 1102*	Shielded Metal ARC Welding II .....	3 cr
WELD 1112*	Blueprint Reading II (Welding Symbols) .....	2 cr
WELD 1116*	Gas Tungsten ARC Welding II .....	3 cr
WELD 1118*	Gas Metal ARC Welding II .....	3 cr
WELD 1150*	Advanced Metal Fabrication/CNC Automation.....	4 cr

### Semester Three First Year Summer (9 credits)

WELD 1113*	Blueprint Reading III (CAD Systems).....	2 cr
WELD 1120*	Fabrication Design and Construction .....	4 cr
WELD 1134*	Welding Qualification .....	3 cr

## Course Prerequisites

Some courses may require appropriate test scores or completion of basic math, basic English and/or reading courses with a "C" or better. CLC utilizes a multiple measure approach for placement which may include high school MCA, SAT, ACT scores in addition to high school GPAs. For insurance purposes, internships may require that students be 18 years old.

## Graduation Requirements

In addition to the program requirements, students must meet the following conditions in order to graduate:

1. College Cumulative GPA Requirement: Cumulative grade point average (GPA) of credits attempted and completed at CLC must be at least 2.0;
2. College Technical Core GPA Requirement: Cumulative GPA of credits attempted and completed towards the technical core of the diploma or degree must be at least 2.0;
3. Residency Requirement: students must complete 25% of their credits at Central Lakes College.