

WELDING TECHNOLOGY (WELD), CERTIFICATE

Overview

At Dunwoody College of Technology, the Welding Technology certificate provides students with entry-level skills and theoretical knowledge to perform the various welding, cutting and fabrication processes required in a 21st century manufacturing facility. Graduates from this program are prepared to enter the industry as welders, fabricators, fitters and inspectors. The course of study includes: print reading; weld symbols; measurement and materials; job planning and layout; and metallurgy. Welding techniques instructed include oxygen-fuel welding and cutting; shielded metal arc welding (SMAW-stick); gas metal arc welding (GMAW-MIG); gas tungsten arc welding (GTAW-TIG) and various fabrication processes. The program's curriculum is closely aligned with standards set forth by American Welding Society (AWS). Students may choose to utilize these credits to continue on for an AAS Degree in Welding & Metal Fabrication. Arts & Sciences curriculum supports the technical coursework by enhancing the students' communication, mathematics and critical thinking skills.

Credits earned in the Welding Technology certificate directly transfer into Dunwoody's Welding & Metal Fabrication (WMET) (<https://catalog.dunwoody.edu/catalog-student-handbook/academic-programs/robotics-manufacturing/welding-metal-fabrication-wmet-aas>) associate's degree program.

Credential Earned: Certificate

Length of Program: 1 year (2 semesters)

Classes Offered: Day

Available Starts: Fall Semester; Spring Semester

Program Outcomes

- Demonstrate required industry safety standards.
- Interpret welding blueprints and symbols.
- Fabricate weldments using multiple processes and positions.
- Analyze weldments for quality.

Degree Requirements

Code	Title	Credits
General Requirements		
ARTS1350	Structural Drawing	3
Communications		3
Technical Requirements		
WELD1110	Introduction to Welding Lab	5
WELD1120	Introduction to Welding Theory	4
WELD1130	Welding Math, Prints & Symbols	4
WELD1210	Advanced Welding Lab	5
WELD1221	Advanced Welding Theory & Applications	8
Total Credits		32

Sample Academic Plan

The following sample academic plan demonstrates how a student's schedule might look on a semester-by-semester basis, including elective courses. Your actual degree plan may differ from this sequence,

depending on whether you start in the fall or spring semester, what transfer credits you may have (if any), and which Arts & Sciences courses and electives you take and when you take them.

The sample academic plan is for informational purposes only. To determine your academic plan, please meet with an academic advisor.

Course	Title	Credits
First Year		
Fall		
WELD1110	Introduction to Welding Lab	5
WELD1120	Introduction to Welding Theory	4
WELD1130	Welding Math, Prints & Symbols	4
ARTS1350	Structural Drawing	3
Credits		16
Total Credits		16

Course	Title	Credits
First Year		
Spring		
WELD1210	Advanced Welding Lab	5
WELD1221	Advanced Welding Theory & Applications	8
Communications		3
Credits		16
Total Credits		16

Courses

Descriptions

WELD1110 | Introduction to Welding Lab | Laboratory (5 Credits)

Perform welding of standard joint designs on various thicknesses of steel plate. Practice oxyacetylene welding and cutting (OAW), stick welding (SMAW), and wire feed welding (GMAW). Introduction to tungsten inert gas (TIG) welding. Demonstrate shop safety, setup and troubleshooting of welding equipment and applications.

Prerequisite(s): TTEN1210, TTEN1220, And TTEN1230

Corequisite(s): WELD1120 WELD1130

WELD1120 | Introduction to Welding Theory | Lecture (4 Credits)

Identification, recognition and calculations associated with weld joint designs and weld materials. Examine various weld processes: oxyacetylene welding and cutting (OAW), stick welding (SMAW), wire feed welding (GMAW). Introduction to tungsten inert gas (TIG) welding. Examine shop safety, setup and troubleshooting of welding equipment and applications.

Prerequisite(s): TTEN1210, TTEN1220, And TTEN1230

Corequisite(s): WELD1110 WELD1130

WELD1130 | Welding Math, Prints & Symbols | Lecture (4 Credits)

Principles of weld print reading, measuring systems, decimal/fraction conversions, dimensioning, layout, orthographic views, technical math, and section views.

Prerequisite(s): TTEN1210, TTEN1220, And TTEN1230

Corequisite(s): WELD1110 WELD1120

WELD1210 | Advanced Welding Lab | Laboratory (5 Credits)

Practice welding of steel plate and aluminum alloys using stick welding (SMAW), wire feed welding (GMAW) and tungsten inert gas (TIG) welding. Demonstrate shop safety, grinding, finishing, and cutting practices in a final fabrication project.

Prerequisite(s): WELD1110

Corequisite(s): WELD1221

WELD1221 | Advanced Welding Theory & Applications | Lecture (8 Credits)

Identification, recognition, and calculations associated with weld joint designs and assemblies using various welding and metallurgic processes. Other topics include: material selection, layout, fixturing, weldment inspection and lean manufacturing. Culminates in a designed and fabricated project.

Prerequisite(s): WELD1120

Corequisite(s): WELD1210

ARTS1350 | Structural Drawing | Lecture (3 Credits)

Basic drawing concepts and techniques are studied through demonstrations, discussions, critiques, slide lectures, and the use of a sketchbook. Working from observation and using line, tone and the rules of linear perspective to solve spatial, compositional and color/light problems and form a 3-dimensional illusion of space as it relates to human constructs.

General Education: Humanities