NICOLET COLLEGE

Welding/Maintenance & Fabrication

Technical Diploma

This industry recognized credential provides the skills necessary to entry-level employment in the field. All competencies apply to the welding technical diploma degree.

Program Outline

TERM 1

Course #	Course Title	Credits
1044210300	Print Reading Students will develop print interpretation skills needed in metal fabrication. Learners study orthographic projection, dimensioning, and bill of materials. Learners apply concepts in hands-on activities, practicing basic layout skills and safe operation of saws, shears and drills. Corequisites: 3180410100 Math Skills, 3180410200 Geometry Skills.	3.00
1044215700	Thermal Cutting Develops skill in thermal cutting and gouging processes. Learners practice manual and machine oxy-fuel cutting, plasma cutting and gouging and air carbon arc gouging. Prerequisite: 1044217200 Safety in Manufacturing (B or better).	2.00
1044215800	Shielded Metal Arc Welding on Carbon Steel Develop skills in shielded metal arc welding. Learners use 6010 and 7018 "stick" electrodes to complete fillet and groove welds in all positions. Weld quality is assessed per AWS D1.1 Structural Steel Code. Prerequisite: 1044217200 Safety in Manufacturing (B or better).	2.00
1044215900	Gas Metal Arc Welding on Carbon Steel Develop skills in gas metal arc welding. Learners use the “mig” process in all positions on carbon steel. Required welds include fillet and groove welds with short circuit, spray and pulsed spray transfer. Weld quality is assessed per AWS D1.1 Structural Steel Code. Prerequisite: 1044217200 Safety in Manufacturing (C or better).	3.00
1044216300	Weld Inspection and Testing Emphasizes measurement of weld defects and assessment of weld quality conformance to common welding codes. Learners conduct etch tests, bend tests and break tests on welds. The process of procedure and welder qualification is explored through group activities.	1.00
1044217200	Safety in Manufacturing Prepares learners for safe operation of work site equipment. Procedures regarding welding machines, band saws, shears, drill presses, punches, grinders, oxy fuel equipment and an array of hand tools are practiced. Crane and forklift operation are introduced.	1.00
3144210100	Weld Symbols This course provides a comprehensive introduction to weld symbols used in welding, fabrication, manufacturing, and engineering drawings. Students will learn how to read, interpret, and apply standard welding symbols in accordance with industry codes and drafting practices. Topics include reference lines, arrow and other side symbols, fillet and groove weld symbols, supplementary symbols, finish symbols, dimensions, weld locations, and welding notes. Through practical exercises and drawing interpretation, participants will develop the skills needed to accurately communicate welding requirements, inspect weld specifications, and ensure quality and consistency in fabrication projects.	1.00

Course #	Course Title	Credits
3180410100	Math Skills Develops skills in using mathematics principles, essential to the technical service and production workplace, through applied learning contexts. Content includes whole numbers, fractions, percent, graphs, and fundamentals of algebra. Corequisite: 1044210300 Print Reading.	1.00
3180410200	Geometry Skills Develops skills in using mathematics principles, essential to the technical service and production workplace, through applied learning contexts. Content includes geometry and trigonometry, and tools and techniques for precision measurement. Corequisite: 1044210300 Print Reading.	1.00

Total Credits: 15.00

Talk with a Success Coach about the program outline. Together, you will determine if credits you've already earned satisfy any requirements, discuss possible alternative courses, and choose the best classes if you're thinking of transferring.

At A Glance

How You'll Learn

Next Academic Start Dates

11
JAN

Spring 2027 Term Starts

15
MAR

Additional Spring 2027 Start for Select Courses

VIEW FULL CALENDAR

What is Competency-Based Education?

Competency-Based Education (CBE) is learning at your own pace by mastering competencies through demonstration. Once all competencies for a program have been assessed and mastered, students will earn a certificate, diploma, or degree.

LEARN MORE ABOUT CBE

Program Tuition*

$3,858

Books & Supplies*

$387

*Total cost for degree completion is estimated by current course requirements, books, and supplies. Tuition and fees are set by the Wisconsin Technical College System and subject to change.

▸ **Potential Indirect Costs**

Student Equipment

Students are required to purchase welding kits through the college bookstore or obtain the minimum tools and equipment listed to be able to successfully complete coursework and performance assessments in the welding lab.

- Safety glasses
- Welders gloves MIG and TIG
- Chipping hammer
- Welding beanie
- 8-way welder pliers
- Soapstone holder
- Triple flint spark lighter
- Tape measure
- Weld fillet gauge
- Mag tool
- Material handling gloves
- Backhand pad
- Tool bag
- Welder pencils
- Auto darkening helmet
- Lens cover
- Welding jacket

What You'll Learn

- Demonstrate industry-recognized safety practices
- Interpret welding drawings
- Produce gas metal arc welds (GMAW)
- Produce shielded metal arc welds (SMAW)
- Perform cutting operations

Your Potential Careers

- Welder
- Cutter
- Solderer
- Brazer

Median Annual Salary

Local	State	National
$41,739	$46,044	$43,508

EMSI 2022.1

Get Started

Your application can be submitted online, it takes just a few minutes to complete.

APPLY NOW