Minnesota
Articulated College Credit (ACC) Agreement
www.CTEcreditMn.com

Articulated College Credit Agreement

Through Articulated College Credit (ACC), specific college curriculum learning outcomes and assessments are embedded in participating high school career and technical education (CTE) programs as specified in this agreement. Relevant knowledge, skills, and standards are taught by qualified CTE high school instructor(s) in one or more high school course. ACC is awarded if the student meets the college equivalency standards and later enrolls in the college(s) listed below requiring the course in a specific program.

Agreement Name: **Math for Welders**
Agreement Reviewed/Revised: **2023 – 2024**

These credits are valid for students in grades 10-12 for 5 years from the completion of this course.

College(s)	College Course(s)	College Programs	Articulated College Credit
Anoka Technical College	WELD 1002 – Math for Welders	Welding (A.A.S. –66 cr.) Welding Technology (Diploma – 34 cr.) Basic Welding (Cert. – 17 cr.)	1 credit of 1 total credit
St. Cloud Technical & Community College	WELD 1529 – Print Reading & Math Applications	Welding/Fabrication (Diploma – 37 cr.)	2 credits of 2 total credits

Course Description:

The Welding profession requires a good working knowledge of blueprint and math concepts using whole numbers, fractions, decimals and the metric system in conjunction with blueprints. To accurately layout and fabricate parts the welder will need basic knowledge of blueprint lines, dimensions, notes, and welding symbols. In many instances the welder will be required to calculate the weight and cost of material to fabricate a tank then calculate the capacity, which may be needed in cubic feet, gallons or liters. Written and Fundamental tests will be done in accordance with the American Welding Society (AWS) SENSE curriculum and code books.

Curriculum Learning Outcomes

100% of the curriculum learning outcomes will be covered in the high school course(s) by qualified CTE high school instructor(s).

Upon completion of this course, students will be able to:

- Interprets basic elements of a drawing or sketch.
- Interprets welding symbol information.
- Prepares an applicable bill of materials.
- Performs conversions of standard inch and metric measurements.
- Solve the common welding/fabrication workplace problems involving perimeter, area, surface area and volume
- Calculate weight and cost of welding consumables and materials

Curriculum Topics

- Weld Prints
- Construction Object Representation
- Print Reviews
- Welding Symbols
- Joint Design
- Fasteners and Structural Steel
- Computing Geometric Measure and Shapes
- Fillet Welds
- Angular Development and Measurement Groove Welds
- Bends, Stretch outs
- Economical Layout
- Understanding Mathematics with Blue Prints.

Students will demonstrate safe working habits and exhibit classroom and lab work habits consistent with occupational standards.

Assessments

A written test is available at www.ctecreditmn.com . tests with **80% or better** accuracy.

Textbooks

- Title: Printreading for Welders Edition: 4th edition, American Technical Publishers, Inc
- Title: Practical Problems in Mathematics for Welders Edition: 5th edition, Delmar, Cengage Learning

Recommended Industry-Recognized Certification or Comprehensive Assessment – High School & College

Certification/ Assessment	Vendor	Other Information
None at this time		