

William D. Ford Career-Technical Center

36455 Marquette
Westland, Michigan 48185
(734) 419-2100

Welding Technology I Syllabus - 2024/2025

Instructors: Mr. Timothy Prichard
Mrs. Tarrah DeBord

Assistant: Mr. Lucas Meiers

Office Phone: (734) 419-2100

Class Phone: (734) 419-2127

School Class Hour

First Shift: 7:25 – 10:05 A.M.

Second Shift: 11:10 – 1:50 P.M.

CIP: 48.0508

PSN: 19063

Course #: V2110, V2110EM Embedded Math

Distance Learning

Google Classroom Code: cflg4vn

Google Meet Link: <https://meet.google.com/oeq-gvxc-ktr>

Academic focus for first-year welding students will be safety, introduction to welding concepts, and completion of welds according to AWS D1.1 Structural Welding Code - Steel.

Prerequisites:

Students must possess the academic credit requirements to be considered a Junior or Senior. Students must also have a strong work ethic and desire to learn a skilled trade. Students must also agree that to be part of the welding class their phone privileges at times will be revoked. Student phones will be turned over immediately upon instructor request and may not have them released back to them until parental contact is made.

Year 1 Goal Statement:

To introduce and encourage students to explore the field of welding. To identify individual interests and aptitudes in order to guide students toward a career in welding. To offer opportunities to students who desire to enhance their mathematical abilities within a trade setting.

Course Description:

Welding I students will be introduced to and study the practical application and theory of multiple arc welding processes, including shielded metal arc, gas metal arc, and gas tungsten arc welding. First-year students will be expected to learn multiple weld joints and positions. Other topics covered will include Occupations in the welding field, health and safety, measurement, blueprint reading, employability, and more. Students can expect to visit local businesses, and college welding programs, and possibly participate in welding competitions.

First Year Student Units of Study/Competencies:

Occupational Orientation (A2, 1st semester)
Safety and Health in Welding (A1, A3, A5, 1st Semester)
Shielded Metal Arc Welding (C1, 1st Semester)
Manual Oxy Acetylene Fuel Gas Cutting (G1, 1st Semester)
Mechanized Oxy Acetylene Fuel Gas Cutting (G1, 1st Semester)
Gas Metal Arc Welding (E1, 1st Semester)
Drawing and Welding Symbols (B1, 2nd Semester)
Gas Tungsten Arc Welding (F1, 2nd Semester)
Flux Cored Arc Welding (D1, 2nd Semester)
Plasma Arc Cutting (G1, 1st Semester)
Air Carbon Arc Cutting (G1, 1st Semester)
Welding Inspection and Testing (A4, A6, B3, 1st Semester)

Embedded Math Opportunity:

This class offers a unique opportunity for students to receive credit for math by enrolling in either a senior math or an algebra II math section. The math section is embedded into the welding curriculum as a regular part of the welding class. This class is taught in the hopes of preparing students for mastery of the technical, academic, and social skills needed for high-paying entry-level employment or continued education within the welding industry. Students will be advised to see counseling staff to request placement into V2110EM courses if they wish to take part in this excellent opportunity.

Year-one students will be expected to:

- Maintain excellent attendance and punctuality
- Treat all people and property with respect
- Work safely and hold others accountable to do the same
- Understand and follow all shop and classroom rules
- Develop a strong work ethic

Welding Credit Issued:

1-1/2 elective welding credit - per semester - unless the student is enrolled in a specific integrated math or a VPAA section; then the welding credit would be 1, and the math or visual arts credit would be 1/2.

Textbook and Materials Used:

- *Welding Skills* by B.J. Moniz and R.T. Miller, Copyright 2015
- *Math for Welders, 6th Edition* by Nino Marion, Copyright 2020
- *Basic Blueprint Reading Skills* by C. Thomas Olivo, Albert V. Payne, Thomas P. Olivo
- Various handouts and videos covering welding related topics including *Miller OpenBook*

Welding Equipment needed for participation in the Welding Program:
Please see the document, "Welding Supply Cost List," for helpful pricing and purchasing locations.

1. **Safety Glasses:** One pair is provided. Expect to replace these regularly. Must be Z87+ compliant. No tinted safety glasses or sunglasses are allowed.
2. **Welding Jacket:** Fire-stop or fire retardant welding jacket / with or without leather sleeves (leather sleeves are better and preferred.)
3. **Welding Helmet:** Passive or Auto-Darkening. Auto-darkening is preferred.
4. **Boots:** Steel or composite safety-toe, full leather boots (6" boot height min.)
5. **Jeans:** Denim jeans without holes or frays.
6. **Welding Gloves:** Multiple styles; expect to replace them regularly.
7. **Welding Cap:** Flame retardant cotton cap.
8. **Pliers:** Vise grips or channel locks
9. **Tape Measure:** Metric/standard measurement units.
10. **OAW Cutting / Welding glasses:** Glasses or goggles; Shade #3 for cutting #5 for welding.
11. Chipping Hammer, Wire Brush, and GMAW Pliers are also recommended.

Total costs can vary depending on where the safety equipment and clothes are purchased. Students will receive a document, the "*Welding Supply Cost List*," with this syllabus. Costs can be expected to start at around \$160 for basic equipment and may increase from there.

Students are required to wear safety equipment in the lab every day to be a part of the class; however, any parents/students who can't get the safety clothes and equipment (PPE) should contact Mr. Prichard or Mrs. DeBord so that we can assist in helping them get everything they need. Student's parents/guardians will be called and told they need to either drop off their child's equipment or pick their child up from the William D. Ford CTC office in the event that their child does not bring their required PPE to participate in laboratory days. The opportunity to participate in our welding program is a privilege and there are many other students that were not so fortunate as to have a seat. Coming to class prepared is a non-negotiable requirement.

Evaluation and Grading of Tests, Quizzes, and Projects:

Grade weights are as follows:

40% - **Welding/ Hands-On Abilities:** Students will be graded on their ability to prepare, fit-up, and weld different types of weld joints in various positions with increasing difficulty.

20% - **Math Assignments:** Including textbook packet assignments, projects, etc.

20% - **Written Assignments:** This includes book work, reviews, writing assignments, definitions, crossword puzzles, etc.

20% - **Written Tests & Quizzes:** Including safety, chapter, and math tests.

Extra credit may also be made available at the instructor's discretion for students who make the right choice to put in the extra effort to go the extra mile.

Grading Scale and Policy:

Pluses and minuses are not factored into grade point averages. (Ex: A+, A, A- are all calculated as 4.0) Therefore, to simplify the grading policy, the scale is as follows:

- **A** = 90 - 100%
- **B** = 80 – 89.99%
- **C** = 70 – 79.99%
- **D** = 60 – 69.99%
- **E** = 0 – 59.99%

Attendance, attitude, social behavior, work ethic, and available extra credit assignments will determine whether a borderline grade will be raised or lowered. Students are expected to carry themselves professionally while treating each other respectfully. Social, academic, and technical skills are all taught in the class to further prepare students for advancement into either college or entry-level work within the welding industry. While this is a welding *class*, this is a *career* training center, and as such, soft skills are also taken into consideration.

This program is designed in such a way as to be a One-Year course. Students desiring to take further welding courses at the William D. Ford Career-Technical Center **MUST** obtain a “C” grade or better in Welding 1 and obtain instructor permission to be eligible for further courses at the William D. Ford Career-Technical Center.

Work-Based Learning (Course Requirement):

Work-Based Learning is a valuable experience in which every student in career and technical education is required to participate. All students will be given opportunities to attend a minimum of one field experience each school year. Those students who do not attend the scheduled experience(s) will be required to find a site at which they will spend a minimum of one class period in a business - related to their program of study. The student will be required to get the teacher’s signed permission, the parent/guardian’s signed permission, fill out a training agreement to be signed by the site supervisor, and provide their own transportation to and from the site. Upon completion of the field experience, the student will turn in a question-and-answer assignment provided by the teacher regarding the experience.

Classroom Accommodations:

As instructors, it is our goal that every student be given the greatest opportunity to succeed in this class. Therefore, accommodations will be made for all students with individual educational plans and special circumstances. Time outside of regular class hours may be made available for students to practice welding skills and/or makeup assignments at the instructor’s discretion.

A permission slip is available for students wishing to take advantage of this opportunity. Additionally, students experiencing physical or emotional issues of any kind, for any reason, will be met with understanding and reasonable accommodations - again, at instructor's discretion.

Program Attendance Policy:

Students must attend class regularly in order to receive credit or to be considered for employment and competitive opportunities. **If a student needs to be absent due to illness or an emergency situation including court, funerals etc., she (he) should contact the office and bring in documentation for all absences. The main office will determine whether an absence is unexcused, excused, documented or undocumented. All make-up work is required to be done within the first week of an absence.** A student will lose credit in the class if they exceed 10 days of absence unless they make arrangements to make up all hours missed over the 10 days and complete course requirements per instructor expectations. Make-up time and assignments must be arranged with the instructor. NO credit will be given unless this requirement is met. **Remember...** We are training students in preparation for entry-level employment. All employers expect excellent attendance and great attitudes. Please help support us in these important areas!

Students must receive prior permission from the instructor for all school-related functions, co-op working arrangements, field trips, competitions, and any class-sponsored experiences.

Certifications that may be earned:

Students looking to earn an AWS Welding certification must meet grade, attendance, and behavior requirements as well as complete all required exams and practical welding projects with proficiency as detailed in AWS QC7 and other various AWS Codebooks (D1.1, D1.2, Etc.).

Thank you very much for all the support you provide for your progeny! We will do our very best to help you prepare your young person for a successful school year and an excellent career.

Mr. Prichard may be contacted by email at: Prichardt@wwcsd.net or phone at (734) 419-2127
Mrs. DeBord may be contacted by email at DebordT@wwcsd.net or phone at (734) 419-2127

Please sign the following page, and return to the instructors.

Students are responsible for fully completing and turning in the following classroom contract before being allowed to participate in any weld-related activities.

Welding Technology Classroom Contract

I have fully read and understand the requirements for my child to participate in the Welding Technology Program at the William D. Ford Career-Technical Center. I will provide all necessary equipment or make arrangements with the instructors. I agree to keep open lines of communication about my child's progress, development, and behavior with the instructors and administration.

Parent Signature:

Parent Name Printed:

Parent Email:

Parent Phone Number:

Preferred Method of Contact: Phone Text Email

I have read, understand, and agree to the requirements for my own participation in the Welding Technology Program at the William D. Ford Career-Technical Center. I understand that this is **not** a "blow-off class," or "an easy A." I will be expected to work safely and diligently, and be respectful at all times. Furthermore, I will follow all the rules of the building, the classroom, and the directions of the instructor without argument.

Student Signature:

Student Name Printed:

Student Phone Number:
