



Course Outcome Summary

31442313 Welding-Shielded Metal Arc 2 (SMAW)

Course Information:

- Description:** A course of instruction to include the knowledge, skills, and safety required to perform welding operations using Shielded Metal Arc Welding
- Instruction Level:** Technical Diploma
- Total Credits:** 2.00
- Total Hours:** 72.00
- Textbooks:** *Modern Welding*. 11th Edition. Copyright 2013. Althouse, Andrew D., Carl H. Turnquist, William A. Bowditch, and Kevin E. Bowditch. Publisher: Goodheart-Wilcox Co. ISBN-13:978-1-60525-795-2. Required.
- Course Objectives:** The student will weld fillet and groove welds on all joints to guidelines set forth by the American Welding Society (AWS) and the American Society of Mechanical Engineers (ASME). Welding will be done in the vertical and overhead positions.
- Course Goals:**
1. Develop safety skills in his/her work habits and welding procedures when using SMAW equipment.
 2. Develop the skills required to operate equipment and perform welding tasks using the SMAW process.
 3. Learn welding metallurgy, properties, identification of metals.
 4. Learn how metals are created and their applications in industry.
 5. Learn about the effects of heat treatments, pre and post weld treatments.
 6. Demonstrate understanding of subjects discussed in this course via various written exercises
 7. Weld ferrous metals in the Vertical and Overhead position.
- Core Expectations:**
- Demonstrate technical and other occupational skills needed to obtain employment and be successful in the workplace.
 - Demonstrate literacy skills essential to the requirements of the workplace.
 - Demonstrate mathematical skills essential to the requirements of the workplace.
 - Think critically in solving problems and applying knowledge.
 - Demonstrate the ability to use welding shop equipment independently.
 - Demonstrate self-awareness and interpersonal skills needed to be a good citizen and work collaboratively with a diverse range of people.
 - Use information technology effectively.

Supplies Needed: Safety Glasses
Welding Gloves
Cutting Goggles
Welding Helmet
Protective Clothing (Leather-Sateen)

Lab Exercises:

1. Weld a Lap joint in the vertical 3F Down position using E 6010 electrodes.
2. Weld a multi pass stringer T joint in the vertical 3F Up position using E6010 electrodes.
3. Weld a multi pass stringer T joint in the vertical 3F up position using E7018 electrodes.
4. Weld a multi pass weave T joint in the 3F position using E7018 electrodes.
5. Weld a Single V groove open root Butt joint in the 3G position using e 6010 & E7018 electrodes.
6. Weld a closed root V groove Butt joint in the 3G position using E7018 electrodes.
7. Weld a Lap joint in the 4F position using E6010 electrodes.
8. Weld an open root V groove Butt joint in the 4G position using E6010 & E7018 electrodes.
9. Weld a closed root V groove Butt joint in the 4G position using E 7018 electrodes

Student Responsibilities:

1. It is required that each student be in the classroom or shop at the designated time.
2. Each student must have the necessary books, handouts, and welding related equipment to facilitate instruction. Required equipment is: A sateen garment, or leathers, ear plugs, safety glasses, gloves, boots, and non-frayed clothing.
3. It is the student's responsibility to notify the instructor before class when they will be absent, and to arrange if possible time to make up classroom activities. Attendance will influence your grade. Absences will influence the instructor to lower your grade. An absence record of (3) classes, Lecture or lab will lower your grade one letter.
4. It is the student's responsibility to complete shop, and written assignments and tests. Late assignments will be dropped one letter grade depending on how late. It is the student's responsibility to put the date due on each assignment.
5. Grading percentages are based on:
100-95%=A
94-90% =A/B
89-85% = B
84-80% = B/C
79-75% = C
74-70% = D

Shop and classroom grades are combined for the final grade.

SPECIAL NEEDS: Any student that feels he/she has special learning needs or needs special accommodations for test taking, classroom equipment, etc. should contact Kristina Stellpflug (608-785-9875) in the Welcoming Center. Kristina is the Student Disabilities Service Specialist and will arrange for your accommodations.

COUNSELING: If you feel that you are having a problem, whether personal or school related, and you would like help, or just need someone to talk to, contact Richard Kotovich (608-785-9438) or Brent Brigson (608-785-9583) in the Welcoming Center. Richard and Brent are the counselors for our program area. They are there to help.

ATODA: Alcohol and other drug use are prohibited in the shop! Violation of this rule is grounds for removal from the shop and possible drop from the program!!!

INCLEMENT WEATHER: School Closings will be broadcasted on local radio stations.

CONDUCT: There is no reason why we can't enjoy our time in the shop and classroom. However, horseplay, excessive profanity and other socially unacceptable behavior will not be tolerated. Judgement of unacceptable behavior will be at the discretion of the instructor, as will appropriate action against the offending parties. If you have any questions about what is appropriate conduct or concerns about possible actions taken by the instructor, refer to the proper area of the Student Handbook for answers.

Theft of school property will be grounds for immediate drop from the course!!! Tobacco use is prohibited in the building. Smoking is allowed at designated areas outside the school doors. Chewing is also prohibited and any spitting into cans or bottles in the class or shop is forbidden. Offenders will be asked to leave the class or shop and will not be re-admitted with a "chew" in. All Cell type communications must be turned off during class periods and their use is prohibited and will result in dismissal from class. The instructor reserves the right to place students he deems needing more attention in the classroom to preferred seating in the classroom.

Work ethic is an important part of being a valuable employee, and for that reason, it may be considered part of the students grade. Lack of work ethic will include, but will not necessarily be limited to: tardiness, using cell phones during class (classroom or lab), being late or absent without notifying the instructor with a valid reason, not using enough time constructively in the classroom or lab, excessive arguing with the instructor on points that are the instructor's responsibility. Upon being told twice about any combination of the above, the student will be warned that a 3rd time will result in the student being placed on an improvement plan. Any further occurrences may include an impact on his/her grade for the course, and a dean or the equivalent will be notified.

SAFETY GLASSES: All students will read and sign a copy of the District's eye protection policy before entering the first shop/lab class. No student will be allowed to work in the shop without safety glasses!!

INSTRUCTOR REFERENCES: Students who wish to use the instructor as a reference on a job application, scholarship application, etc will first need to fill out a Reference Release Form. Instructor references will include information in these areas only:

- Attendance/Punctuality
- Technical Performance (Grades/Competency Exercises)
- Shop/Classroom Attitude and Behavior