

SYLLABUS
PART I
EDISON COMMUNITY COLLEGE
WLD 101S MANUAL SHIELDED METAL ARC WELDING
3 CREDIT HOURS

COURSE DESCRIPTION

Offers a thorough technical presentation of arc welding, welding safety, arc welding power sources, electrode classifications and selection. Develop the skills necessary to make quality shielded metal arc welds in the vertical position on mild steel from 3/16 inch to ½ inch plate, single and multiple pass, using mild steel, low hydrogen, and iron powder electrodes, with DC welding current.

COURSE GOALS

The student will:

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| 1. Produce quality multi-pass fillet and square groove welds in the vertical position using E6010, E6011, and E7018 electrodes. |
| 2. Develop skills to perform in accordance with Welder, Arc (DOT 810.384-014), Production Line Welder (DOT 819.684-010), Tack Welder (DOT 810.684-010), and the arc welding portion of Combination Welder (DOT 819.384-010). |

CORE VALUES

The Core Values are a set of principles which guide in creating educational programs and environments at Edison. They include communication, ethics, critical thinking, human diversity, inquiry/respect for learning, and interpersonal skills/teamwork. The goals, objectives, and activities in this course will introduce/reinforce these Core Values whenever appropriate.

TOPIC OUTLINE

1. Definitions of Welding Terms
2. Welding Positions
3. Weld Nomenclature
4. Shielded Metal Arc Welding Basic, Course Overview
5. Introduction to Shielded Metal Arc Welding
6. Safety & Health of Welders
7. The Five Essentials
8. Striking & Controlling the Arc
9. Pad of Beads, Flat Position & Crater Filling
10. Fillet Weld, Lap Joint, Horizontal Position
11. Pads of Beads, Flat Position (E6010)
12. The Welder's Role In Quality Control
13. Three-Bead Fillet Weld, T-Joint, Horizontal Position
14. Fillet Weld, T-Joint, Horizontal Position, Destructive Test
15. Pad of Beads, Horizontal Position (E6010)
16. Square-Groove Weld, Butt Joint, Horizontal Position
17. Square-Groove Weld, Butt Joint, Horizontal Position, Destructive Test
18. Electrode Selection
19. Fillet Weld, Lap Joint, Vertical Position, Up
20. Fillet Weld, T-Joint, Vertical Position, Up
21. Three-Bead Fillet Weld, T-Joint Vertical Position Up, with 2 Weave Beads
22. Square-Groove Weld, Butt Joint, Vertical Position, Up

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- 23. Square-Groove Weld, Butt Joint, Vertical Position, Up, Destructive Test
- 24. Power Sources
- 25. Distortion Control
- 26. The Low Hydrogen Electrode and Its Uses
- 27. AWS QC10 3G Qualification Test
- 28. AWS QC10 Destructive Test

NOTES

This class is held at the Hobart Institute of Welding Technology in Troy, Ohio, during the day or at the Upper Valley Joint Vocational School in Piqua, Ohio, at night.

Students who take this class at the Hobart Institute of Welding Technology will receive an additional 2 credit hours applicable to the Technical Elective. All other students must take a 3 credit hour Technical Elective.

Students who have the necessary skills and have passed the AWS QC10 3G Qualification Test may apply for credit for this course.