DAKOTA COUNTY TECHNICAL COLLEGE

DCTC.EDU

WELDING SAFETY AND THEORY I — WELD 1101

A. **Course Description**

- **Credits:** 3.00
- **Lecture Hours/Week:** 3.00
- **Lab Hours/Week:** 0.00
- **OJT Hours/Week:** 0
- **Prerequisites:** None
- **Corequisites:** None
- **MnTC Goals:** None

This course will give the student a basic introduction to welding and cover basic safety for the welding trade. Theory for Shielded Metal, Gas Metal, Flux Cored, and Gas Tungsten Arc Welding Processes. Theory for Oxygen Fuel, Plasma Arc, and Carbon Arc Cutting/Gouging processes. Also covered is visual inspection and quality standards. Prerequisites: None

B. **Course Effective Dates:** 8/27/12 – Present

C. **Outline of Major Content Areas**

As noted on course syllabus

D. **Learning Outcomes**

1. Define five basic metal joints in the four main welding positions within the industry.
2. Demonstrate proper setup and adjustment of welding and gas cylinder equipment.
3. Explain the four GMAW modes of transfer using proper machine settings.
4. Identify FCAW modes of transfer using proper machine settings.
5. Identify GTAW modes of transfer using DCEP and DCEN current.
6. Identify SMAW mode of transfer using proper machine settings.
7. Identify basic safety standards needed in the welding industry.
8. Identify components of welding equipment and perform basic maintenance.
9. Identify electrode types for SMAW, GMAW, FCAW, and GTAW processes.
10. List equipment for various thickness ranges.
11. Read and calculate proper voltage, polarity, and amperage for input and output ratings.
12. Read fillet weld gauges to measure fillet welds.
13. Recognize metal, slag, and coating hazards.
14. Summarize how to cut multiple thicknesses of metal using various processes.

E. **Minnesota Transfer Curriculum Goal Area(s) and Competencies**

F. **Learner Outcomes Assessment**

As noted on course syllabus

G. **Special Information**

None noted