MINNESOTA WEST COMMUNITY & TECHNICAL COLLEGE
COURSE OUTLINE

Faculty is required to have the outline submitted to the Academic Affairs Office. The course outline is the form used for approval of new courses by the Academic Affairs and Standards Council.

DEPT.  WELD                           COURSE NUMBER: WELD 1320

NUMBER OF CREDITS:  4 Credits   (0/4)

COURSE TITLE: Intermediate Gas Tungsten Arc

CATALOG DESCRIPTION: Perform gas tungsten arc welding (GTAW) in the horizontal, vertical, and overhead positions. Weld a variety of joint designs using different types of metals of different thicknesses used in industry.

AUDIENCE: Secondary and post-secondary students interested in welding.

FULFILLS MN TRANSFER CURRICULUM AREA(S) *(Leave blank if not applicable)*
Area: N/A by meeting the following competencies:
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PREREQUISITES OR NECESSARY ENTRY SKILLS/KNOWLEDGE:

LENGTH OF COURSE:  1 Semester

THIS COURSE IS USUALLY OFFERED:
Every other year ☐   fall ☑   spring ☑   summer ☐   undetermined ☐

Four goals are emphasized in course at Minnesota West Community & Technical College:

1) ACADEMIC CONTENT: The academic objectives of this course are:
   a. Reading for understanding, standards and codes for welding
   b. Evaluating welds for compliance with standards and codes

2) THINKING SKILLS: This course will help students improve the effectiveness of their thinking skills through:
   a. Completing Homework
   b. Participating in Classroom discussions
   c. Taking open and closed book tests and quizzes
   d. Critical thinking

3) COMMUNICATIONS SKILLS: This course will help students improve their oral and written communication skills through:
   a. Participating in class discussions and reports
   b. Participating in assignments. Worksheets, and reports
4) HUMAN DIVERSITY: This course will help students recognize, understand, and appreciate human diversity through:
   a. Working with students of other cultures
   b. Working with students of another gender

TOPICS TO BE COVERED:
   Gas tungsten arc welding process
   Attributes of a quality tungsten electrode
   Precautions that must be taken to limit tungsten erosion
   Types of tungsten electrodes and how they are used
   Care for the tungsten electrode
   Advantages and disadvantages of water cooled and air cooled torches
   Reading a flowmeter
   Three types of welding current used in GTA processes
   Advantages and disadvantages of the shielding gasses
   Problems of incorrect gas flow
   Welding carbon steel, stainless steel, and aluminum

LIST OF EXPECTED COURSE OUTCOMES:
The student will:
   Prepare job cards, reports or records
   Follow written and verbal instructions to complete work assignments
   Perform safety inspections of GTAW equipment and accessories
   Make minor repairs and adjustments to GTAW equipment
   Set up and operate GTAW equipment on carbon steel
   Set up and operate GTAW equipment on stainless steel
   Set up and operate GTAW equipment on aluminum

LEARNING/TEACHING TECHNIQUES used in the course are:

☐ Collaborative Learning  ☑ Problem Solving
☐ Student Presentations  ☐ Interactive Lectures
☐ Creative Projects  ☐ Individual Coaching
☐ Lecture  ☐ Films/Videos/Slides
☐ Demonstrations  ☐ Other (describe below)
☐ Lab

ASSIGNMENTS AND ASSESSMENTS FOR THIS CLASS INCLUDE:

☐ Reading  ☑ Tests  ☑ Individual Projects
☐ Oral Presentations  ☐ Worksheets  ☐ Collaborative Projects
☐ Textbook Problems  ☐ Papers  ☐ Portfolio
☐ Group Problems  ☐ Term Paper
☐ Other (describe below)

EXPECTED STUDENT LEARNING OUTCOMES:
Students will have a technical understanding of the GTAW process. Students will be able to demonstrate safe and proper use of GTAW equipment and components. Students will perform quality welds in all positions.

**Veteran Services:** Minnesota West is dedicated to assisting veterans and eligible family members in achieving their educational goals efficiently. Active duty and reserve/guard military members should advise their instructor of all regularly scheduled military appointments and duties that conflict with scheduled course requirements. Instructors will make every effort to work with the student to identify adjusted timelines. If you are a veteran, please contact the Minnesota West Veterans Service Office.

The information in this course outline is subject to revision.

To receive reasonable accommodations for a documented disability, please contact the campus Student Services Advisor or campus Disability Coordinator as arrangements must be made in advance. In addition, students are encouraged to notify their instructor.

This document is available in alternative formats to individuals with disabilities by contacting the Student Services Advisor or by calling 800-658-2330 or via your preferred Telecommunications Relay Service.

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