

# MESABI RANGE COMMUNITY & TECHNICAL COLLEGE

## Course Outline

**Course Title:** Shielded Metal Arc Welding-Structural  
**Semester Course Prefix and Number:** Weld 2244  
**Old Quarter Course Prefix and Number:** Weld 2244

**Submitted By:** D. Mroz  
**Approval Date:**  
**Revision Date:** 3/18/10

**Number of Credits:** 2      **Number of Lecture Credits:**  
**Semester(s) Offered:** Fall      **Number of Lab Credits:** 2      **Number of Lab Hours:** 4  
**Class Size:** 24      **Number of Studio/Demonstration/Internship Credits:**  
Negotiated by AASC on:  
(date)

### Course Purpose Code:

- 0 – Developmental Courses
- 1 – Non-transferable
- 2 – Technical course related to career programs
- 3 – College course which has the primary goal of applying certain concepts (e.g. vocal ensemble)
- 4 – Other college course not considered a part of MNTC (e.g. computer science, health, physical education)
- 5 – Course which is intended to fulfill the Minnesota Transfer Curriculum (MNTC) requirements or intended for transfer.
- 9 – Continuing Education/Customized Training specialized credit course (not occurring in 0-5)

### Catalog Description:

The purpose of this course is to acquire the skills necessary to weld Low-Hydrogen electrodes in all positions to the profiles and acceptance criteria of AWS D1.1-Structural and AWS D1.5-Bridge.

### Prerequisites and/or recommended entry skills/knowledge:

Course Prerequisite(s): A 2.0 average or better in Weld 1223, or the consent of instructor.  
Reading Prerequisite:  
Composition Prerequisite:  
Mathematics Prerequisite:

### Career Programs and Transfer Majors Accessing this Course:

### Minnesota Transfer Curriculum Goal(s) partially met by this course if applicable:

(Notes: No more than two goals may be met by any one course. Curriculum Committee review and the Chief Academic Officer's approval are required.)

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|--|--|
| 0. <input checked="" type="checkbox"/> None                                | 6. <input type="checkbox"/> The Humanities and Fine Arts     |
| 1. <input type="checkbox"/> Communications                                 | 7. <input type="checkbox"/> Human Diversity                  |
| 2. <input type="checkbox"/> Critical Thinking                              | 8. <input type="checkbox"/> Global Perspectives              |
| 3. <input type="checkbox"/> Natural Sciences                               | 9. <input type="checkbox"/> Ethical and Civic Responsibility |
| 4. <input type="checkbox"/> Mathematical/Logical Reasoning                 | 10. <input type="checkbox"/> People and the Environment      |
| 5. <input type="checkbox"/> History and the Social and Behavioral Sciences |  |

**Learning Outcomes:** (including any relevant competencies listed in the Minnesota Transfer Curriculum)

Upon completion of this course, the student will be able to:

- Identify filler metals by their AWS classifications
- Show understanding of base metals and filler metals by choosing the correct filler metal for certain basic applications
- Understand and describe electrical concepts applicable to procedures used.
- Demonstrate knowledge of welding accessories
- Demonstrate knowledge of welding safety equipment and clothing
- Understand and use basic welding terminology
- Describe general weld joint configurations
- Demonstrate the ability to prepare joints by manual and semi-automatic processes.
- Demonstrate rod angles & rod manipulation techniques
- Understand problems encountered during the welding process
- Demonstrate the ability to resolve problems encountered during the welding process
- Be able to recognize problems with and make minor repairs to welding equipment
- Understand acceptance criteria for AWS D1.1 and D1.5 code.

**Student Assessment Methods:**

Visual and destructive testing of welded materials. Evaluated lab assignments.

**Use of Instructional Technology:** (includes software, interactive video and other instructional technologies):

**Additional Special Information:** (special fees, directives on hazardous materials, etc.)

The student will supply all materials from the "Required Tool and Safety Equipment" list.

**Transfer Information:** (Please list colleges/majors that accept this course in transfer.)

**Course Outline Revision History:**

Last revised May 2005. This is a new class which uses the former course prefix and number Weld 2244 Template Development I.

**Approvals:**

Body	Representative Signatures	Date
Curriculum Committee		
Faculty Association		
Academic Affairs Standards Committee		
Chief Academic Officer		

**Distribution:** Original – Instructional Services  
**Copies:** Transfer Specialist, Originating Faculty Member, Records  
**Revised:** March 2010