

MESABI RANGE COMMUNITY & TECHNICAL COLLEGE

Course Outline

Course Title: Shielded Metal Arc Welding-pipe
Semester Course Prefix and Number: Weld 2241
Old Quarter Course Prefix and Number: Weld 2241

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

Number of Credits: 5 **Number of Lecture Credits:**
Semester(s) Offered: Fall **Number of Lab Credits:** 5 **Number of Lab Hours:** 10
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 afford the student the opportunity to become proficient welding pipe to AWS D1.1 and API 1104 codes using the Shielded Metal Arc process.

Prerequisites and/or recommended entry skills/knowledge:

Course Prerequisite(s): A 2.0 average or better in Weld 1222 and Weld 1223, or consent of instructor
Reading Prerequisite:
Composition Prerequisite:
Mathematics Prerequisite:

Career Programs and Transfer Majors Accessing this Course:

Any career program utilizing welding: IT degree, IT Management, Welding Management, Non Destructive Testing.

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.)

- | | |
|--|--|
| 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, AMSE 9 and API 1104 codes.

Student Assessment Methods:

Visual and destructive testing of welded materials.

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 Tools and Safety Equipment" list.

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

Course Outline Revision History:

Last revised May 2005. Credits changed from 3 lab credits to 5 lab credits.

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