

MESABI RANGE COMMUNITY & TECHNICAL COLLEGE

Course Outline

Course Title: Properties Of Welding I
Semester Course Prefix and Number: WELD 2240
Old Quarter Course Prefix and Number:

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

Number of Credits: 1
Semester(s) Offered: Fall
Class Size: 24
Negotiated by AASC on: (date)
Number of Lecture Credits: 1
Number of Lab Credits:
Number of Studio/Demonstration/Internship Credits:

Course Purpose Code:

- 0 - Developmental Courses
1 - Non-transferable (marked with x)
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 continue the students' understanding of the Shielded Metal Arc Welding processes as applied to pipe and stainless steel welding. It will also expand the students' knowledge in the metallurgy of carbon and stainless steels. In addition, this course will also cover the AWS Standards (AWS D1.1, D1.6, API 1104) pertaining to plate, pipe and stainless steel certification.

Prerequisites and/or recommended entry skills/knowledge:

Course Prerequisite(s): A 2.0 average or better in Weld 1253, 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. x None
1. Communications
2. Critical Thinking
3. Natural Sciences
4. Mathematical/Logical Reasoning
5. History and the Social and Behavioral Sciences
6. The Humanities and Fine Arts
7. Human Diversity
8. Global Perspectives
9. Ethical and Civic Responsibility
10. People and the Environment

**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 an understanding and application of gasses in welding procedures.
- 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
- Describe rod angles & rod manipulation techniques
- Understand the Heat Affected Zone and accompanying characteristics
- Understand problems encountered during the welding process
- Discuss applicable techniques to resolve problems encountered during the welding process
- Be able to recognize problems with and make minor repairs to welding equipment
- Familiarization with codes and standards used for acceptance criteria.

**Student Assessment Methods:**

Students will be assessed by class participation, quizzes and exams.

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

The instructors will use texts, overheads, videos, or appropriate updated *D1.1 Structural Welding Code – Steel, D1.6 Stainless Steel, API 1104* code books

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

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

**Course Outline Revision History:**

Last revised May 2005. Course title changed from Intro to Welding Processes 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  
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