Course Outline

Course Title: Shielded Metal Arc Welding-Structural
Submitted By: D. Mroz
Semester Course Prefix and Number: Weld 2244
Old Quarter Course Prefix and Number: Weld 2244

Number of Credits: 2
Semester(s) Offered: Fall
Number of Lecture Credits: 2
Number of Lab Credits: 2
Number of Lab Hours: 4
Class Size: 24
Number of Studio/Demonstration/Internship Credits:

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
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.)
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 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:**

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**Distribution:** Original – Instructional Services

**Copies:** Transfer Specialist, Originating Faculty Member, Records

**Revised:** March 2010