**Course Title:** Basic Welding Skills  
**Semester Course Prefix and Number:** WELD 1220  
**Old Quarter Course Prefix and Number:**  

<table>
<thead>
<tr>
<th>Number of Credits:</th>
<th>2</th>
<th>Number of Lecture Credits:</th>
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<th>Number of Lab Credits:</th>
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<th>Number of Lab Hours:</th>
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<th>Number of Studio/Demonstration/Internship Credits:</th>
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<td><strong>Semester(s) Offered:</strong></td>
<td></td>
<td><strong>Class Size:</strong></td>
<td>24</td>
<td><strong>Negotiated by AASC on:</strong></td>
<td>(6/18/18)</td>
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**Course Purpose Code:**
- 0 – Developmental Courses
- 1 – Non-transferable
- **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.
- 6 – Continuing Education/Customized Training specialized credit course (not occurring in 0-5)

**Catalog Description:**
The purpose of this course is to build skills in welding mild steel using E6010 and/or E6011 electrodes with the Shielded Metal Arc Welding Process and GMAW Process. The student will become familiar with SMAW and GMAW principles and techniques, practical safety standards, and filler metals and how to apply them according to AWS D1.1 Code in 1F, 2F, 3F, 4F, 1G, 2G, 3G, & 4G positions. Students will be evaluated on their performance in an industrial environment.

**Prerequisites and/or recommended entry skills/knowledge:**
- Course Prerequisite(s): 
- 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. AASC 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:
- Understand the purpose, advantages and limitations of E6010 & E7018 electrodes
- Demonstrate the proper set up and usage of SMAW equipment for E6010/E7018 electrode welding
- Demonstrate all applicable safety practices
- Describe, define and understand Butt, Lap, Tee, Corner, & Edge joint configurations with open and closed root without backing strip
- Demonstrate understanding of AWS D1.1 Structural Welding Code-Steel by properly completing the following welds with E6010 and/or E7018 electrodes and GMAW on mild steel plate:
  1. 1G – Butt joint with backing strip
  2. 2G – Butt joint with backing strip
  3. 3G – Butt joint with backing strip
  4. 4G – Butt joint with backing strip
  5. 1F – Lap, Tee & outside corner
  6. 2F – Lap, Tee & outside corner
  7. 3F – Lap, Tee & outside corner
  8. 4F – Lap, Tee & outside corner
  (All welds are to be inspected by instructor according to AWS D1.1, Table 6.1)
- Demonstrate proper rod manipulation techniques
- Demonstrate single pass and multiple pass welding techniques
- Exhibit safe housekeeping procedures in the lab
- Exhibit professionalism

Student Assessment Methods: May include:
Observation of practical skills, Visual Testing to AWS D1.1 Code; Destructive testing of completed welds

Use of Instructional Technology: (includes software, interactive video and other instructional technologies):
May use videos and Weld Lab CD-ROM

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

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

Affiliated Mesabi Range College Courses and Programs:

Approvals:

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<tr>
<th>Body</th>
<th>Representative Signatures</th>
<th>Date</th>
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<tr>
<td>Faculty Association</td>
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<td>Academic Affairs Standards Committee</td>
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<td>Chief Academic Officer</td>
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Distribution: Original – Instructional Services
Copies: Transfer Specialist, Originating Faculty Member, Records
Revised: December 2012