SMAW BEADS & FILLET WELDS II
Course Syllabus

Course Number: WELD-0401B
OHLAP Credit: No
OCAS Code: None
Course Length: 70 Hours
Career Cluster: Manufacturing
Career Pathway: Welding and Metal Fabrication
Career Major(s): Combination Welder

Pre-requisite(s):

Course Description: This course covers advanced techniques for SMAW Beads & Fillet Welds in all positions, on carbon steel plate.

Textbooks/Materials:
- Math for Welders, Marion and Nino, GoodHeart-Willcox (2001)

Course Objectives:

A. Review SMAW Beads and Fillet Welds.

1. Review the set up shielded metal arc welding (SMAW) equipment.  
   a. E7024, E6010, or E6011 and E7018 electrodes  
   b. Base/filler metal selection/identification/preparation  
   c. Review appropriate weld procedures  
   d. Filler metal selection  
   e. Proper hand tool selection  
   f. Adjust amperage and polarity  
   g. Base metal preparation  
   h. Parts fit up and preheated as necessary
2. Describe methods of striking an arc.  
3. Properly strike and extinguish an arc.  
4. Describe causes of arc blow and wander.  
5. Make stringer, weave, and overlapping beads.  
6. Make fillet welds in the:  
   a. Vertical (3F) position  
   b. Overhead (4F) position

B. Review Shielded Metal Arc Welding Equipment

1. Flat single pass surfacing welds  
2. Flat multiple pass, multi-directional, surfacing welds

C. Make Fillet Welds in all Positions, on Carbon Steel Plate, and on Pipe in the 2F Position

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1. Multi-pass start/stop points staggered
2. Different techniques for different electrodes

1. Welding Skills, National Center for Construction Education and Research (NCCER)
2. ODCTE Shielded Metal Arc Welder (SMAW) Skill Standards
3. American Welding Society, Entry Level Welder (Level I) Module 4

**Teaching Methods:**
The class will primarily be taught by the lecture and demonstration method and supported by various media materials to address various learning styles. There will be question and answer sessions over material covered in lecture and media presentations. Supervised lab time is provided for students to complete required projects.

**Grading Procedures:**
1. Students are graded on theory and shop practice and performance.
2. Each course must be passed with seventy (70%) percent or better.
3. Grading scale: A=90-100%, B=80-89%, C=70-79%, D=60-69%, F=50-59%.

**Description of Classroom, Laboratories, and Equipment:**
Tulsa Technology Center campuses are owned and operated by Tulsa Technology Center School District No. 18. All programs provide students the opportunity to work with professionally certified instructors in modern, well-equipped facilities.

**Available Certifications/College Credit:**
The student may be eligible to take state, national or industry exam after completion of the program. College credit may be issued from Oklahoma State University-Okmulgee or Tulsa Community College. See program counselor for additional information.

**College Credit Eligibility:**
The student must maintain a grade point average of 2.0 or better.