## GMAW/FCAW EQUIPMENT & SET-UP
### Course Syllabus

<table>
<thead>
<tr>
<th>Course Number:</th>
<th>WELD-0761</th>
<th>OHLAP Credit:</th>
<th>No</th>
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<tbody>
<tr>
<td>OCAS Code:</td>
<td>None</td>
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<tr>
<td>Course Length:</td>
<td>15 Hours</td>
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<td>Career Cluster:</td>
<td>Manufacturing</td>
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<td>Career Pathway:</td>
<td>Welding and Metal Fabrication</td>
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<tr>
<td>Career Major(s):</td>
<td>Combination Welder, Welding Fabricator</td>
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### Pre-requisite(s):
This course is an introduction to safety procedures for GMAW and FCAW equipment and explains the filler metals and shielding gases used to perform GMAW and FCAW. It also covers equipment setup and operations.

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

### Course Objectives:

**A. Demonstrate an understanding of GMAW/FCAW Equipment Safety.**
1. Explain gas metal arc welding (GMAW) and flux cored arc welding (FCAW) safety.  
2. Performs safety inspections of GMAW equipment and accessories.  
3. Performs safety inspections of FCAW equipment and accessories.

**B. Explain the characteristics of welding current and power sources.**

**C. Identify and explain the use of welding current and FCAW equipment:**
1. Spray transfer  
2. Globular  
3. Short circuiting  
4. Pulse

**D. Identify and explain the use of GMAW and FCAW shielding gases and filler metals.**

**E. Set up GMAW and FCAW Equipment and Identify Tools for Weld Cleaning.**
1. Demonstrate the ability to make minor external repairs to GMAW equipment and accessories.  
2. Sets up for GMAW-S operations on carbon steel.  
3. Operates GMAW-S equipment on carbon steel.  
4. Sets up for GMAW (spray) operations on carbon steel.  
5. Operates GMAW (spray) equipment on carbon steel.  
7. Sets up for FCAW-G/GM operations on carbon steel.
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9. Sets up for FCAW-S operations on carbon steel.  
10. Operates FCAW-S equipment on carbon steel.

1  Welding Skills, National Center for Construction Education and Research (NCCER)  
2  Level I, Entry Level Welder, Module 5 & 6, American Welding Society (AWS)

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.