

Discipline: Agriculture	Sub-discipline: Mechanized Agriculture
General Course Title: Agriculture Welding	Min. Units: 3 Semester
Proposed Suffix: L	
<p>Course Description:</p> <p>This course emphasizes the development of minimum skill standards in welding. The SMAW (shielded metal arc welding), OFW (oxy-fuel welding) and OFC (oxy-fuel cutting) processes are covered as prescribed in the AWS QC 10 specifications. The qualification and certification standards for entry level welders as established by The American Welding Society will be covered. Laboratory required.</p>	
Required Prerequisites or Co-Requisites ¹	
Advisories/Recommended Preparation ²	
<p>Course Objectives: <i>At the conclusion of this course, the student should be able to:</i></p> <ul style="list-style-type: none"> • Become aware of welding shop safe practices and perform housekeeping duties • Follow verbal and written instructions • Perform safety inspections of equipment and accessories • Make minor external repairs to equipment and accessories • Set up and operate shielded metal arc welders • Set up and operate oxy-fuel gas cutting and heating operations • Perform cutting operations on plain mild steel • Perform brazing operations on mild steel and cast iron in flat and horizontal positions • Demonstrate ability to communicate and work cooperatively with others • Make fillet welds in all positions on mild steel (flat, vertical, overhead, and horizontal) with E 6013, E 6011, and E 7018 electrodes 	
<p>Course Content:</p> <ol style="list-style-type: none"> 1. Shielded metal arc welding operations using E 6013/6011 and E 7018 electrodes <ol style="list-style-type: none"> a. E 6013/6011 and E 7018 flat b. Puddle control c. Bead evaluation d. Multi pass and directional surface welds 2. Fillet welds on plain mild steel in all positions using E 6043/6011 and E 7018 electrodes <ol style="list-style-type: none"> a. E 7018 flat b. E 6013/6011 flat c. E 6013/6011 vertical and horizontal d. E 7018 vertical and horizontal e. E 6011 overhead 3. Welder performance qualification testing <ol style="list-style-type: none"> a. E 6013/6011 b. E 7018 2 & 3 G <p>Agriculture Welding (Content Continued)</p>	

¹ Prerequisite or co-requisite course need to be validated at the CCC level in accordance with Title 5 regulations; co-requisites for CCCs are the linked courses that must be taken at the same time as the primary or target course.

² Advisories or recommended preparation will not require validation but are recommendations to be considered by the student prior to enrolling.

4. Manual oxy-fuel gas welding and cutting process
 - a. Set up oxy-fuel gas welding and cutting equipment for mild steel
 - b. Perform manual oxyfuel gas cutting by making straight cuts on mild steel
 - c. Make shape cuts on mild steel
 - d. Make bevel cuts on mild steel
 - e. Use weld washing techniques to remove weld metal using the oxy-fuel cutting
- f. How to braze mild steel and cast iron

Laboratory Activities: Individual Laboratory Activities are designed to support course objectives.

Methods of Evaluation: Lecture Comprehensive Quizzes and Exams Written Critical Thinking Scenarios Problem Analysis and Solution Research and Term Papers	Methods of Evaluation: Laboratory Laboratory Skill Validation by Observation Laboratory Reports Diagnostics and Problem Solving Laboratory Skill Practicum Certification Exams
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Typical Textbooks, Manuals, or Other Support Materials
Welding Principles and Practices, Jeffers.

Statewide Articulation: CPSLO-IME 142, CSUF-MEAG 50, CSUC-AGET 125, UCD-ABT 16, other universities as lower division elective.

FDRG Lead Signature: _____ Date: _____

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