



AGTC 106: AGRICULTURE WELDING

Proposer:**Name:**

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Effective Term:

Fall 2019

Credit Status:

Credit - Degree Applicable

Subject:

AGTC - Agricultural Technology

Course Number:

106

Catalog Title

Agriculture Welding

Catalog Description

A study of the fundamental principles theories and concepts of welding used in agriculture construction, fabrication and repair. All positions, joint types, hard surfacing, cutting, brazing, SMAW, GMAW, and OFW will be studied.

Method of Instruction:

Laboratory
Lecture and/or Discussion

Course Units/Hours:**Course Units Minimum:**

3

Lecture Hours Minimum (week)

3

Lab Hours Minimum (week)

1

Total Contact Hours Minimum (semester)

70

Total Outside Hours Minimum (semester)

105

Total Student Learning Minimum Hours (semester)

175

Repeatability:

No

Open Entry/Exit:

No

Field Trips:

Not Required

Grade Mode:

Standard Letter

TOP Code:

011600 - * Agricultural Power Equipment Technology

SAM Code:

C - Clearly Occupational

Course Content

Methods of Assessment:

Oral presentations
Project
Skill demonstrations

Course Topics:

Course Topics	
1	Safe Operation of Arc and Acetylene Equipment
2	Shielded Metal Arc Welding Equipment and Process
3	Oxy-Fuel Welding Equipment and Process
4	Brazing and Braze Welding
5	Oxy-fuel Cutting Equipment and Process
6	Plasma Arc Cutting Equipment and Process
7	Gas Metal Arc Welding Equipment and Process
8	Metal Surfacing
9	Production of Metals and Metal Properties
10	Cast Welding
11	Production Welding
12	Project Fabrication

Course Objectives:

Course Objectives	
1	Explain the concepts of safe operation of equipment in the shop and apply those concepts of safety.
2	List and demonstrate conceptual understanding of the operation of arc and acetylene welding machines.
3	List and explain basic molecular structure of metals and how this is applied to the weld-ability of metals.
4	Students will be able to explain the concepts of safe operation of apparatuses in the shop and apply those concepts of safety.
5	List and explain concepts and demonstrate the application of cast welding processes.
6	Explain and apply the theory of arc and oxyacetylene burning to appropriate weldments.
7	Explain the concepts of welding as related to oxy welding in various positions.
8	Students will be able to explain the concepts of safe operation of apparatuses in the shop and apply those concepts of safety.
9	Demonstrate proficiency in arc welding in horizontal, vertical and overhead positions.
10	Describe and apply theories and concepts as related to oxy welding in the flat position.
11	Students will be able to explain the concepts of safe operation of apparatuses in the shop and apply those concepts of safety.
12	Define voltage and rampage flow as they relate to Ohms Law and apply these concepts to striking the welding arc.
13	List and explain basic molecular structure of metals and how this is applied to the weldability of metals.
14	List and demonstrate conceptual understanding of the operation of arc and acetylene welding machines.

Course Outcomes:

Course Outcomes	
1	Upon Completion of this course students will be able to explain and apply all safety rules to the operation and work in shop laboratory.
2	Upon completion of this course students will be able to explain and demonstrate the operational parameters of an arc welding apparatus and the OFW apparatus.
3	Upon completion of this course students will be able to describe theories and apply those concepts to both OFW and SMAW in multiple positions.

Assignments:

Assignment Type:	Details
Reading	Students may have to read chapters from a textbook and answer questions.
Lab	Students will have various welding assignments they must complete throughout the semester.
Homework	Students will have to answer questions from technical documents regarding specific pieces of welding equipment and processes.
Writing	Students may write a report on welding process and how to improve their technique.

Textbooks or other support materials

Resource Type:	Details
Books	Metal Fabrication Technology for Agriculture Jeffus, Larry Thomson Cengage Learning 2nd Edition 2011 9781435498570

Transferable to CSU

Yes - Approved

CSU General Education

Transferable to CSU

This course will also be proposed for UC transfer.

No

Other Degree Attributes

Degree Applicable
Not a Basic Skills Course

Banner Title:

Agriculture Welding

Curriculum Committee Approval Date:

03/01/2019

Academic Senate Approval Date:

03/13/2019

District Governing Board Approval Date:

04/08/2019

Course Control Number:

CCC000205410