WELD 171.3 Course Outline as of Summer 2018

CATALOG INFORMATION

Dept and Nbr: WELD 171.3 Title: FLUX CORE ARC WELDING
Full Title: Flux Core Arc Welding (FCAW)
Last Reviewed: 3/31/2014

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	2.00	Lecture Scheduled	1.00	17.5	Lecture Scheduled	17.50
Minimum	2.00	Lab Scheduled	3.00	6	Lab Scheduled	52.50
		Contact DHR	0		Contact DHR	0
		Contact Total	4.00		Contact Total	70.00
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 35.00 Total Student Learning Hours: 105.00

Title 5 Category:	AA Degree Applicable
Grading:	Grade Only
Repeatability:	00 - Two Repeats if Grade was D, F, NC, or NP
Also Listed As:	
Formerly:	

Catalog Description:
All position welding utilizing Flux Core Arc Welding (FCAW) and Air Arc cutting. Welding certification testing included.

Prerequisites/Corequisites:
Course Completion of WELD 70

Recommended Preparation:
Eligibility for ENGL 100 or ESL 100

Limits on Enrollment:

Schedule of Classes Information:
Description: All position welding utilizing Flux Core Arc Welding (FCAW) and Air Arc cutting. Welding certification testing included. (Grade Only)
Prerequisites/Corequisites: Course Completion of WELD 70
Recommended: Eligibility for ENGL 100 or ESL 100
Limits on Enrollment:
Transfer Credit:
Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	**Area**	Effective:	Inactive:
CSU GE:	**Transfer Area**	Effective:	Inactive:
IGETC:	**Transfer Area**	Effective:	Inactive:

CSU Transfer:	Effective:	Inactive:
UC Transfer:	Effective:	Inactive:

CID:

Certificate/Major Applicable:
Certificate Applicable Course

COURSE CONTENT

Student Learning Outcomes:
At the conclusion of this course, the student should be able to:
1. Demonstrate safe use of the tools and equipment in a welding shop.
2. Flux Core Arc Welding (FCAW) from flat, horizontal, vertical and overhead positions.
3. Demonstrate competent hand-eye coordination necessary to control molten metal and produce aesthetically pleasing appearance and strength with ferrous metals.

Objectives:
Upon completion of the course, students will be able to:
1. Demonstrate the ability to carry out safe welding practices.
2. Identify the five basic types of welding joints.
3. Set up and place in operation Flux Core Arc Welding equipment.
4. Demonstrate air arc principles.
5. Identify filler metals by American Welding Society (A.W.S) specifications.
6. Demonstrate welding in flat, horizontal, overhead and vertical positions.
7. Prepare plates for certification test in accordance with A.W.S. D. 1.1 structure code.
8. Demonstrate ability to weld in all positions with Flux Core Arc Welding equipment.
9. Demonstrate metal surfacing techniques.

Topics and Scope:

I. Flux Core Arc Welding
   - A. Inner shield
   - B. Dual shield
   - C. Power sources
   - D. Wire feeders
   - E. Guns
   - F. Wires and gases

II. Air Arc Cutting
   - A. Arc cutting safety
   - B. Equipment
   - C. Carbon electrodes

D. Machine settings

III. Metal Surfacing
- A. Wear problems
- B. Material selection
- C. Process selection
- D. Metal spraying
- E. Case hardening

IV. Certification Testing

Assignment:

1. Weekly reading assignments, 10-15 pages per week.
2. Homework problems, including safety handouts.
3. Welding skills assignments and certification tests.
4. Quizzes, Midterm, final exam.

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

None, This is a degree applicable course but assessment tools based on writing are not included because skill demonstrations are more appropriate for this course.	Writing 0 - 0%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Homework problems	Problem solving 10 - 20%

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

Welding skills assignments and certification tests.	Skill Demonstrations 50 - 60%

Exams: All forms of formal testing, other than skill performance exams.

Quizzes, Midterm, final exam	Exams 10 - 20%

Other: Includes any assessment tools that do not logically fit into the above categories.

Participation	Other Category 0 - 10%

Representative Textbooks and Materials:
Welding Skills, Processes and Practices for Entry Level Welders. Delmar Centage Learning, 2009

Instructor prepared materials