

JAMESTOWN COMMUNITY COLLEGE

State University of New York

INSTITUTIONAL COURSE SYLLABUS

Course Title: Flux Cored Arc Welding

Course Abbreviation and Number: WLD 1380

Credit Hours: 3

Course Type: Lecture/Lab

Course Description: This course provides an introduction to Flux Cored Arc Welding (FCAW), a versatile welding process used in a variety of industries. Students will learn the fundamentals of FCAW, including the operation of equipment, the characteristics of flux-cored wire, and the various shielding gases used in the process. Through hands-on practice, students will develop welding skills on carbon steel and other materials, while emphasizing safety procedures, quality control, and the identification of common weld defects. The course will also explore the advantages and limitations of FCAW in different welding applications, preparing students for entry-level positions in the welding industry. Upon successful completion, students will have a strong foundation in FCAW and will be able to perform basic welding tasks with confidence.

No prerequisites.

Student Learning Outcomes:

Students who demonstrate understanding can:

- 1.) Explain the principles of Flux Cored Arc Welding, including the role of shielding gas, flux, and filler metals in the welding process.
- 2.) Properly set up and adjust FCAW equipment, including power sources, wire feeders, and shielding gas systems, for a variety of welding applications.
- 3.) Perform fillet and groove welds in the flat, horizontal, vertical, and overhead positions using FCAW techniques, meeting industry standards.
- 4.) Inspect and assess welds for quality based on visual and destructive testing criteria, identifying common defects and their causes.

Topics Covered:

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| 1.) Flux Cored Arc Welding (FCAW) Equipment, Setup, and Operation | - Smoke Extraction |
| - Wire Feed Speed | - Positioning of the welder |
| - Voltage | |
| - Machine Setup | 3.) Welding Fillet Weld Positions |
| - Electrode Selection | - 1F |
| - Visual Inspection | - 2F |
| - Shielding Gas Selection | - 3F |
| - FCAW Applications | - 4F |
| - FCAW Advantages | |
| - FCAW Disadvantages | 4.) Welding Groove Weld Positions |
| | - 1G |
| 2.) FCAW Welding of Plate | - 2G |
| - Effects of current too high or too low | - 3G |
| - Proper stick out | - 4G |
| - Gun angle | |
| - Electrode manipulation | |

Information for Students

- Expectations of Students
 - [Civility Statement](#)
 - [Student Responsibility Statement](#)
 - [Academic Integrity Statement](#)
- [Accessibility Services](#)

Students who require accommodations to complete the requirements and expectations of this course because of a disability must make their accommodation requests to the Accessibility Services Coordinator.

- [Get Help: JCC & Community Resources](#)
- [Emergency Closing Procedures](#)
- Course grade is determined by the instructor based on a combination of factors, including but not limited to, homework, quizzes, exams, projects, and participation. Final course grade can be translated into a grade point value according to the following:

A=4.0	B+=3.5	B=3	C+=2.5	C=2	D+=1.5	D=1	F=0
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- Veterans and active duty military personnel with special circumstances (e.g., upcoming deployments, drill requirements, VA appointments) are welcome and encouraged to communicate these to the instructor.

Effective Date: Spring 2026