

Basic Course Information

Semester:	Winter 2022	Instructor Name:	Carlos Araiza Ainza
Course Title & #:	Weld 115 FCAW	Email:	Carlos.araiza@imperial.edu
CRN #:	15194	Webpage (optional):	www.imperial.edu
Classroom:	3100-3111	Office #:	3122
Class Dates:	Jan 3rd -Feb 3rd 2022	Office Hours:	1-2pm M- W
Class Days:	Monday - Friday	Office Phone #:	760-355-6319 Secretary/Division Office 760-355-6361 Secretary/Dean's Office 760-355-6217 Division Coordinator 760-355-6361
Class Times:	08:00-09:20 AM 09:25-12:30 PM	Emergency Contact:	442-231-9622
Units:	3 units		

Course Description

Complete study course in Flux Core Arc Welding process and safety. The course is created to prepare the students for entry welding performance test in manufacturing, fabrication, structural, and shipyard industries. Student will practice welding to build skills in FCAW process. Safety, equipment setup, trouble-shooting, and proper use of measuring tools will be complementing this course. (CSU) Safety and PPE (Proper Personal Equipment) is enforced through the course. (CSU)

Student Learning Outcomes

Upon course completion, the successful student will have acquired new skills, knowledge, and/or attitudes as demonstrated by being able to:

1. 1 discuss three welding hazards specifically associated with the FCAW process and list potential abatement action for these hazards. (ILO1, ILO2, ILO3)
2. List the two most common shielding methods used in FCAW and define the advantages and disadvantages of the various shielding methods. (ILO1, ILO2)
3. Set up the equipment used in FCAW, set up all parameters associated with welding ¼ and 3/8 inch steel plate, and safety demonstrate the adjustment of essential variables per given WPS. (ILO1, ILO2, ILO3)
4. Fabricate various assigned weld joints safely demonstrating and using the forehand and backhand welding techniques per the given WPS. (ILO1, ILO2, ILO3)

Explain the relationship between a Welding Code, a Welding Standard, a Procedure Qualification Record (PQR) and a Welding Procedure Specification (WPS0). (ILO1, ILO4)

Course Objectives

Course Goals:

- 1.1 Develop understanding of safe practices associated with the set up and use of FCAW welding equipment it relates to welding of steel plate.
- 1.2 Develop understanding of safe practices associated with use of related equipment for cutting, grinding and preparation of material for plate welding.
- 1.3 Develop skills in the use of FCAW (Flux Core Arc Welding) equipment for application in the welding of steel plate.

Textbooks & Other Resources or Links

Modern Welding : C W ISBN: 978-1-63126- 328-6 2017-2018

Hobart Institute of Welding Technology Flux Core Basics; Technical Guide and Lab Manual.

ISBN # 978-1-936058-15-0

As provides or required, all students and faculty will bring, make use of at each class such (PPE) personal protective equipment as to provide personal protection for the work being performed. All students will secure use of as provided or required an OSHA/ANSI approved:

- Welding helmet or OFC/W welding and cutting face shield as instructed
- A pair of OSHA/ANSI approved clear safety glasses with side shields
- A pair of welding gloves
- A pair of over the ankle leather work boots
- A welding jacket with leather sleeves or other flame resisting material
- A welding cap
- A pair of ear/hearing protection type ear plugs or other OSHA/ANSI approved hearing protection
- Wear a denim type all cotton pant and sleeved shirt in good repair and tuck in the shirt tail for safety reasons
- Such other personal safety equipment, materials, and supplies as needed and keep in a well maintained condition to contribute to the learning process and success in the course

Additionally:

- A pair of pliers for handling hot metal and other such tools as will facilitate student learning activities
- If available secure a locker if so desired and provide a lock (contents must be removed at end of semester or lock will be removed and contents disposed of)
- A three ring binder, paper and such writing tools as needed
- Purchase the required book available in the IVC Book Store
- Follow all other IVC policies and guidelines etc....

Course Requirements and Instructional Methods

Out of Class Assignments: The Department of Education policy states that one (1) credit hour is the amount of student work that reasonably approximates not less than one hour of class time and two (2) hours of out-of-class time per week over the span of a semester. WASC has adopted a similar requirement.

Methods of instruction for learning:

- Lecture
- Institutional Technology Presentations
- Group and Individual Discussions
- Demonstration
- Outside Assignments

Learning activities

- Individual and group learning activities
- Individual and group discussions
- Individual and group oral presentations
- Individual and group classroom/lab demonstrations
- Other, as the instructor may determine appropriate in and out of class learning assignments, use of computer technology, writing assignments and library research assignments

Covid-19 General Guidelines.

Students are expected to follow IVC's Covid-19 guidelines and protocols regarding exposure and prevention. Faced Masks will be required at all times during the entire semester and social distancing of students in class and during lab will be required.

Course Grading Based on Course Objectives

Evaluation:

- Class participation required = 25points
- Quizzes = 25points
- Final Exam = 25points
- Lab Assignments = 25points

Total Possible Points = 100points

- A= 90%-100% of points= Excellent
- B= 80%-89% of points= Good
- C= 70%-79% of points= Satisfactory
- D= 60%-69% of points= Pass, less than satisfactory
- F= Less than 60% of points= Failing

1. **Attendance:** first day of class, regular attendance and withdrawal after exceeding the number of class hours per week.
Students that are absent on the first day of class will automatically be dropped from the class.
Students that are absent more than three classes during the semester will be dropped.
2. **Tardiness:** three times equals one absence (I.V.C. Gen. Catalog pg. 24) 09-10
3. **Absences:** 3 absences= automatic drop (I.V.C. Gen catalog pg.24) 09-10
4. **Student Conduct:** (I.V.C. Gen. catalog pg. 22) 2009-10
5. **Grading System** (I.V.C. Gen catalog pg.17)

Competencies:

- Develop understanding of qualification and certification under the requirements of the A.W.S (American Welding Society) D.1 Structural Welding Code and other applicable welding standards.
- Demonstrate safe work practices as they relate to use of equipment for materials preparation, performance of welding applications and participation in the classroom and laboratory environment.
- Demonstrate understanding of methods used to select equipment, consumable, qualify weld procedures, certification of welders and the methods used to test and evaluate results of such test for open v-groove welds.
- Demonstrate understanding of the correct weld techniques necessary to complete weld under the AWS (American Welding Society) D.1 Structural Welding Code and other applicable welding standards.

Attendance

- A student who fails to attend the first meeting of a class or does not complete the first mandatory activity of an online class will be dropped by the instructor as of the first official meeting of that class. Should readmission be desired, the student's status will be the same as that of any other student who desires to add a class. It is the student's responsibility to drop or officially withdraw from the class. See [General Catalog](#) for details.
- Regular attendance in all classes is expected of all students. A student whose continuous, unexcused absences exceed the number of hours the class is scheduled to meet per week may be dropped. For

online courses, students who fail to complete required activities for two consecutive weeks may be considered to have excessive absences and may be dropped.

- Absences attributed to the representation of the college at officially approved events (conferences, contests, and field trips) will be counted as ‘excused’ absences.

Classroom Etiquette

- Electronic Devices: Cell phones and electronic devices must be turned off and put away during class, unless otherwise directed by the instructor.
- Food and Drink are prohibited in all classrooms. Water bottles with lids/caps are the only exception. Additional restrictions will apply in labs. Please comply as directed by the instructor.
- Disruptive Students: Students who disrupt or interfere with a class may be sent out of the room and told to meet with the Campus Disciplinary Officer before returning to continue with coursework. Disciplinary procedures will be followed as outlined in the [General Catalog](#).
- Children in the classroom: Due to college rules and state laws, no one who is not enrolled in the class may attend, including children.

Online Netiquette

- What is netiquette? Netiquette is internet manners, online etiquette, and digital etiquette all rolled into one word. Basically, netiquette is a set of rules for behaving properly online.
- Students are to comply with the following rules of netiquette: (1) identify yourself, (2) include a subject line, (3) avoid sarcasm, (4) respect others’ opinions and privacy, (5) acknowledge and return messages promptly, (6) copy with caution, (7) do not spam or junk mail, (8) be concise, (9) use appropriate language, (10) use appropriate emoticons (emotional icons) to help convey meaning, and (11) use appropriate intensifiers to help convey meaning [do not use ALL CAPS or multiple exclamation marks (!!!!)].

Academic Honesty

Academic honesty in the advancement of knowledge requires that all students and instructors respect the integrity of one another’s work and recognize the important of acknowledging and safeguarding intellectual property.

There are many different forms of academic dishonesty. The following kinds of honesty violations and their definitions are not meant to be exhaustive. Rather, they are intended to serve as examples of unacceptable academic conduct.

- Plagiarism is taking and presenting as one’s own the writings or ideas of others, without citing the source. You should understand the concept of plagiarism and keep it in mind when taking exams and preparing written materials. If you do not understand how to “cite a source” correctly, you must ask for help.
- Cheating is defined as fraud, deceit, or dishonesty in an academic assignment, or using or attempting to use materials, or assisting others in using materials that are prohibited or inappropriate in the context of the academic assignment in question.

Anyone caught cheating or plagiarizing will receive a zero (0) on the exam or assignment, and the instructor may report the incident to the Campus Disciplinary Officer, who may place related documentation in a file. Repeated acts of cheating may result in an F in the course and/or disciplinary action. Please refer to the [General Catalog](#) for more information on academic dishonesty or other

misconduct. Acts of cheating include, but are not limited to, the following: (a) plagiarism; (b) copying or attempting to copy from others during an examination or on an assignment; (c) communicating test information with another person during an examination; (d) allowing others to do an assignment or portion of an assignment; (e) using a commercial term paper service.

Additional Student Services

Imperial Valley College offers various services in support of student success. The following are some of the services available for students. Please speak to your instructor about additional services which may be available.

- [Blackboard Support Site](#). The Blackboard Support Site provides a variety of support channels available to students 24 hours per day.
- [Learning Services](#). There are several learning labs on campus to assist students through the use of computers and tutors. Please consult your [Campus Map](#) for the [Math Lab](#); [Reading, Writing & Language Labs](#); and the [Study Skills Center](#).
- [Library Services](#). There is more to our library than just books. You have access to tutors in the [Study Skills Center](#), study rooms for small groups, and online access to a wealth of resources.

Disabled Student Programs and Services (DSPS)

Any student with a documented disability who may need educational accommodations should notify the instructor or the [Disabled Student Programs and Services](#) (DSP&S) office as soon as possible. The DSP&S office is located in Building 2100, telephone 760-355-6313. Please contact them if you feel you need to be evaluated for educational accommodations.

Student Counseling and Health Services

Students have counseling and health services available, provided by the pre-paid Student Health Fee.

- [Student Health Center](#). A Student Health Nurse is available on campus. In addition, Pioneers Memorial Healthcare District provide basic health services for students, such as first aid and care for minor illnesses. Contact the IVC [Student Health Center](#) at 760-355-6128 in Room 1536 for more information.
- [Mental Health Counseling Services](#). Short-term individual, couples, family, and group therapy are provided to currently enrolled students. Contact the IVC [Mental Health Counseling Services](#) at 760-355-6196 in Room 2109 for more information.

Student Rights and Responsibilities

Students have the right to experience a positive learning environment and to due process of law. For more information regarding student rights and responsibilities, please refer to the IVC [General Catalog](#).

Information Literacy

Imperial Valley College is dedicated to helping students skillfully discover, evaluate, and use information from all sources. The IVC [Library Department](#) provides numerous [Information Literacy Tutorials](#) to assist students in this endeavor.

Anticipated Class Schedule/Calendar

Date or Week	Activity, Assignment, and/or Topic	Pages/ Due Dates/Tests
Week 1 Jan3-5	Module 2: Safety and Health of Welders	
	Demonstrates proper use and inspection of personal protection equipment (PPE). Demonstrates proper safe operation practices in work area. Demonstrates proper use and inspection of ventilation equipment Demonstrates proper Hot Zone operation Demonstrates proper work actions for working in confined spaces. Demonstrates proper use of precautionary labeling and MSDS information	Text: Ch. 1:14, 16-17, 20-21, 25, 27, 30-33 Ch. 5: 147-150 Ch. 6: 160-161, 186, 228-229 Ch. 7: 228 Ch. 8: 249, 252, 264 Ch. 9: 302 Ch. 10: 311-312 Ch. 11: 349-350 Ch. 12: 392 Ch. 14: 419 Ch. 16: 478-479 Ch. 18: 526 Ch. 22: 621 Lessons 1A, 1B, 1C, 1D, 5B, 6A, 8A, 9A, 11B, 17A, 23A
Week 2	Module 3: Drawings and Welding Symbol Interpretation Interpret basic elements of a drawing or sketch. Interpret welding symbol information. Fabricate parts from a drawing or sketch.	Text: CH. 3: 55-67
Week 3	Module 4: Shielded Metal Arc Welding (SMAW) Perform safety inspections of SMAW equipment and accessories. Set up for (SMAW) operations on carbon steel. Operate SMAW equipment on carbon steel Make fillet welds in all positions on carbon steel Make groove welds in all positions on carbon steel Passes SMAW welder performance qualification test (2G and 3G, uphill, limited thickness test	Lab Workbook: Lesson 2 All jobs in lessons 6C, 6D and 6E Jobs 9D-2 through 9D-7

