

Basic Course Information

Semester:	SPRING 2022	Instructor Name:	Carlos Araiza Ainza
Course Title & #:	Weld 135	Email:	Carlos.araiza@imperial.edu
CRN #:	20804	Webpage (optional):	
Classroom:	3120	Office #:	3122
Class Dates:	FEB 14 TO JUN 10	Office Hours:	1.00-2.00 PM
Class Days:	T, TH	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:	6:00 PM TO 10: 00 PM	Emergency Contact:	442-231-9622
Units:	4 units		

Course Description

This course is design to be study of SHIELDED METAL ARC WELDING (SMAW) This course is one of the required course in the Welding Technology Program. The student will develop the theory and knowledge base to be able to safety and properly practice welding techniques in Shielded Metal Arc Welding on structural steel A- 36 plate. To support and enhance the understanding and application of SMAW. Welding symbols. Electrical Fundamentals, Welding Metallurgy, Filler Metal application and selection with the application of Personal Protective Equipment.

Student Learning Outcomes

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

Discuss and explain the regulation governing welding related hazards such as : Industrial noise ,Electrical exposure ,and radiation exposure.(ILO1,ILO2,ILO3)

Set up and operated equipment and components used in SMAW using 3/32 E6010 Electrode ,E7018 Electrode in 1F,2F,3F,4F and 1G,2G,3G,4G position with the correct welding and current settings for a given WPS.

1.-Explain the legal responsibilities of Employers, Supervisors. And Welding Personnel with regard to Right to Know OSHA regulations .(ILO1 ,ILO2.)

2- Explain what welding parameters of AWS D1,1 are influenced by the application of the code in Alaska in t.he Winter as compared to the application of the code in Brazil in the Summer (ILO1, ILO2 , ILO3,)

Course Objectives

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

1-Demonstrated and apply appropriate safety products

2- Audio Visual

3-Demonstration

4-Discussion

5-Group Activity

6-Individual Assistance.

7- Lab activity

8- Lecture

9- Simulation

Textbooks & Other Resources or Links

Althouse, A. Turnquist C Bowditch, K. Browdith M 2015 Modern 12th. The Goodheard- Wilcox Company Inc. ISBN: 978-1605257952

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 fame 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 tolls as will facilitate student learning activities
- If available secure a locker if so desired and provide a lock (contents must be removed at tend 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

Course Grading Based on Course Objectives

Evaluation:

- Class participation required
- Written and practical test
- Quizzes/exams
- Group and individual projects
- Assignments (written reports, class/lab excises and homework)

1. **Attendance:** first day of class, regular attendance and withdrawal after exceeding the number of class hours per week.
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)

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 that satisfactory

F= Less than 60% of points= Failing

Competences:

- 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
Module 2: Safety and Health of Welders		
Demonstrates proper use and inspection of personal protection equipment (PPE).	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
Demonstrates proper safe operation practices in work area.	Text: Ch. 1: 14-15, 18-19, 25-33 Ch. 5: 146 Ch. 10: 311-312 Ch. 12: 392-395 Ch. 14: 410-415, 4298-430	Lessons 1A, 1B, 1C,1D, 6A, 8A, 9A, 11B, 17A, 23A

	Ch. 16: 478-479 Ch. 22: 621 Ch. 32: 825-826, 829-830	
Demonstrates proper use and inspection of ventilation equipment	Text: Ch. 1: 19-21, 23-24, 27 Ch. 6: 161, 187 Ch. 7: 226 Ch. 22: 621 Ch. 32: 817	Job 6B-1 Lesson 9A
Demonstrates proper Hot Zone operation	Text: Ch. 1: 24-26 Ch. 5: 229 Ch. 6: 160-161 Ch. 12: 393-395 Ch. 14: 419 Ch. 22: 621	Lab Workbook: Lessons 1A, 1B, 1C, 1D, 6A, 8A, 11B
Demonstrates proper work actions for working in confined spaces.	Text: Ch. 1: 20-21, 24 Ch. 7: 226 Ch. 8: 264 Ch. 14: 430 Ch. 22: 621	
Demonstrates proper use of precautionary labeling and MSDS information	Text: Ch. 1: 27, 31-33 Ch. 5: 131, 134 Ch. 6 159-160 Ch. 8: 236-250 Ch. 9: 274-290 Ch. 10: 310-311 Ch. 12: 364-372 Ch. 23: 624-626	Lessons 1C, 6A and 7B all welding cutting jobs
Demonstrate proper inspection and operation of equipment used for each welding and thermal cutting process used	Text Ch. 1: 27, 31-33 Ch. 5: 131, 134 Ch. 6 159-160 Ch. 8: 236-250 Ch. 9: 274-290 Ch. 10: 310-311 Ch. 12: 364-372 Ch. 23: 624-626	Lessons 1C, 6A and 7B all welding cutting jobs
Module 3: Drawings and Welding Symbol Interpretation		
Interpret basic elements of a drawing or sketch.	Text: Ch. 2: 35-43	Lab Workbook: Lesson 2 All jobs in lessons 6C, 6D and 6E

		Jobs 9D-2 through 9D-7
Interpret welding symbol information.	Text: CH. 3: 55-67	Lab workbook: Lesson 3B Jobs 6E-1 through 6E-4 All jobs in lesson 8C All jobs in lesson 9D Jobs 9E-2 through 9E-6 All jobs in lesson 12C, 12D and 12E Job 12F-1 Job 16A-1 Job 20-1 Job21-1
Fabricate parts from a drawing or sketch.	Text: Ch. 2: 35-36 Ch. 3: 45-55	Lab workbook: Lesson 2 All jobs use drawing and AWS weld symbols.
Module 4: Shielded Metal Arc Welding (SMAW)		
Perform safety inspections of SMAW equipment and accessories.	Text: Ch. 1: 31-33 Ch. 5: 131,134 Ch. 6: 159-160	Lab workbook: Lesson 1C Lesson 6A Job 6B-1
Make minor external repairs to SMAW equipment and accessories.	Text: Ch. 5: 131, 134-138	Job 6B-1
Set up for (SMAW) operations on carbon steel.	Text: Ch. 6: 158-159, 161-165 Ch. 20: 561	Lab workbook: Job 6B-1 All jobs in lessons 6C, 6D and 6E
Operate SMAW equipment on carbon steel	Text: Ch. 6: 161-172, 176-186	Lab workbook: Jobs 6B-2 through 6B-5 All jobs in lesson 6C, 6D and 6E
Make fillet welds in all positions on carbon steel	Text: Ch. 6: 173-174, 177-180	Lab workbook: Lesson 6C Job 6C-2 Job 6C-3 Lesson 6E Job 6E-1 Job 6E-2 Job 6E-4 Job 6E-5

Make groove welds in all positions on carbon steel	Text: Ch. 6: 173, 180-185	Lab workbook: Lesson 6C Job 6C-1 Job 6C-4 Job 6D-3 Lesson 6E Job 6E-3 Job 6E-6
Passes SMAW welder performance qualification test (2G and 3G, uphill, limited thickness test plates) on carbon steel.	Ch. 31: 797-799	
Module 9: Welding Inspection and Testing		
Examine cut surfaces and edges of prepared base metal parts	Text: Ch. 6: 173 -176 Ch. 30: 772-773, 783	Lab Workbook: Job 10-1 Job 10-2 Job 14-1 Job 23B-2 Job 30-3
Examine tacks, root passes, intermediate layers, and completed welds.	Text: Ch. 6: 173 -176 Ch. 12: 391-392 Ch. 14: Fig 14-19 Ch. 30: 771-791	Lab Workbook: All weld performance jobs in the lab workbook required a visual inspection.