

Basic Course Information

Semester:	Spring 2018	Instructor Name:	Carlos Araiza
Course Title & #:	WEL 135	Email:	Carlos,araiza@imperial.edu
CRN #:	21174 and 20976	Webpage (optional):	
Classroom:	3120	Office #:	3122
Class Dates:	12 Feb 2018- 08 Jun 2018	Office Hours:	0200-0300 pm MTWR
Class Days:	T-R	Office Phone #:	442-231-9622
Class Times:	0600-1015 PM	Emergency Contact:	
Units:	3		

Course Description

This course is designed to be study of SHIELDED METAL ARC WELDING (SMAW) This course is one of the required courses 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 Metals application and selection with the application of Personal Protective Equipment.

Course Prerequisite(s) and/or Corequisite(s)

Welding 100.

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-Demostrated and apply appropriate safety products*
- 2- Audio Visual*
- 3-Demostration*
- 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. Bowdith M 2015 Modern Welding 12th. The Goodheard-Wilcox Company . Inc.ISBN : 978-1605257952.

Course Requirements and Instructional Methods

., Reading and Writing:

Prepare a writing report based on information gathered from a Technical Literature Review of SMAW, and its many uses in Manufacturing and Construction.

Out of class.

Reference the text book { SMAW Equipment chapter 5 and AWS D1.1 Steel Structural Welding Code.} and the list of all components needed to have a complete welding circuit. List the chemical composition of a E-6010 electrode .

List two different types type of electrodes used on SMAW and explain the chemical in their coatings.

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.

Course Grading Based on Course Objectives

- 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
- 3- Absences : 3 absences = automatic drop.
- 4- Grading System
 - A=90%- 100% = Excellent
 - B=80% - 89% = Good
 - C=70%- 79% = Satisfactory
 - D= 60% - 69% = Less than satisfactory
 - F= Failing.

Attendance

[Required Information: The below information is the IVC attendance policy. Use this information in addition to any specific attendance policies you have for your course.]

- 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

[Required Information: Describe your policies regarding classroom conduct. The below is suggested language and may be modified for your course.]

- 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, only students enrolled in the class may attend; children are not allowed.

Online Netiquette

[Required Information for web-enhanced, hybrid and online courses: Describe your policies regarding netiquette. The below is suggested language and may be modified for your course.]

- 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

[Required language.]

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

[Suggested Language.]

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.

- **CANVAS LMS.** Canvas is Imperial Valley College's main Learning Management System. To log onto Canvas, use this link: [Canvas Student Login](#). The Canvas Student Guides Site provides a variety of support available to students 24 hours per day. Additionally, a 24/7 Canvas Support Hotline is available for students to use: 877-893-9853.
- **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)

[Required language.]

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

[Required language.]

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 counseling services are available for currently enrolled students. Services are provided in a confidential, supportive, and culturally sensitive environment. Please contact the IVC Mental Health Counseling Services at 760-355-6310 or in the building 1536 for appointments or more information..

Veteran's Center

[Required language.]

The mission of the IVC Military and Veteran Success Center is to provide a holistic approach to serving military/veteran students on three key areas: 1) Academics, 2) Health and Wellness, and 3) Camaraderie; to serve as a central hub that connects military/veteran students, as well as their families, to campus and community resources. Their goal is to ensure a seamless transition from military to civilian life. The Center is located in Building 600 (Office 624), telephone 760-355-6141.

Extended Opportunity Program and Services (EOPS)

[Required language.]

The Extended Opportunity Program and Services (EOPS) offers services such as priority registration, personal/academic counseling, tutoring, book vouchers, and community referrals to qualifying low-income students. EOPS is composed of a group of professionals ready to assist you with the resolution of both academic and personal issues. Our staff is set up to understand the problems of our culturally diverse population and strives to meet student needs that are as diverse as our student population.

Also under the umbrella of EOPS our CARE (Cooperative Agency Resources for Education) Program for single parents is specifically designed to provide support services and assist with the resolution of issues that are particular to this population. Students that are single parents receiving TANF/Cash Aid assistance may qualify for our CARE program, for additional information on CARE please contact Lourdes Mercado, 760-355- 6448, lourdes.mercado@imperial.edu.

EOPS provides additional support and services that may identify with one of the following experiences:

- Current and former foster youth students that were in the foster care system at any point in their lives
- Students experiencing homelessness
- Formerly incarcerated students

To apply for EOPS and for additional information on EOPS services, please contact Alexis Ayala, 760-355-5713, alexis.ayala@imperial.edu.

Student Equity Program

[Required language.]

- The Student Equity Program strives to improve Imperial Valley College's success outcomes, particularly for students who have been historically underrepresented and underserved. The college identifies strategies to monitor and address equity issues, making efforts to mitigate any disproportionate impact on student success and achievement. Our institutional data provides insight surrounding student populations who historically, are not fully represented. Student

Module 2: Safety and Health of Welders		
1 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	Lab Workbook: Lessons 1A, 1B, 1C, 1D, 5B, 6A, 8A, 9A, 11B, 17A, 23A
2 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, 429–430 Ch. 16: 478–479 Ch. 22: 621 Ch. 32: 825–826, 829–830	Lab Workbook: Lessons 1A, 1B, 1C, 1D, 6A, 8A, 9A, 11B, 17A, 23A
3 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	Lab Workbook: Job 6B-1 Lesson 9A
4 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

5 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	
6 Demonstrates proper use of precautionary labeling and MSDS information.	Text: Ch. 1: 21–22	
7 Demonstrates proper inspection and operation of equipment used for each welding and thermal cutting process used. (This is best done as a part of the process module/unit for each of the required welding or thermal cutting processes.)	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	Lab Workbook: Lessons 1C, 6A, and 7B All welding and cutting jobs
Module 3: Drawing and Welding Symbol Interpretation		
1 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
2 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 Lessons 12C, 12D, and 12E Job 12F-1 Job 16A-1 Job 16B-1 Job 20-1 Job 21-1
3 Fabricate parts from a drawing or sketch.	Text: Ch. 2: 35–43 Ch. 3: 45–55	Lab Workbook: Lesson 2 All Jobs use drawing and AWS weld symbols.

Module 4: Shielded Metal Arc Welding (SMAW)		
1 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
2 Make minor external repairs to SMAW equipment and accessories.	Text: Ch. 5: 131, 134–138	Job 6B-1
3 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
4 Operate SMAW equipment on carbon steel.	Text: Ch. 6: 161–172, 176–186	Lab Workbook: Jobs 6B-2 through 6B-5 All Jobs in Lessons 6C, 6D, and 6E
5 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 6D Job 6D-1 Job 6D-2 Lesson 6E Job 6E-1 Job 6E-2 Job 6E-4 Job 6E-5
6 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 Lesson 6D Job 6D-3 Lesson 6E Job 6E-3 Job 6E-6
7 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

1 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
2 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 require a visual inspection.