



Basic Course Information

Semester:	Winter 2023	Instructor Name:	Frank Cervantes
Course Title & #:	Weld 230 SHIELDED METAL ARC ON PIPE	Email:	frank.cervantes@imperial.edu
CRN #:	15197	Webpage (optional):	none
Classroom:	3100-3120	Office #:	3121
Class Dates:	Jan 3- Feb 3	Office Hours:	By Appointment
Class Days:	MONDAY-FRIDAY	Office Phone #:	760-427-0999 Text Please!
Class Times:	LEC 5:30-6:50 LAB 7:00-10:05	Emergency Contact:	cfrankcrot@gmail.com
Units:	3 units	Class Format:	Face to Face

Course Description

Emphasis is on skill development for SHIELDED METAL ARC WELDING on carbon steel pipe open root with use of E6010 and E7018 electrodes. Proper use of filler metal and welding joint designs are emphasized throughout the course. Proper use of filler metal and welding joints designs are emphasized throughout the course. OFC-A, PAC processes may be used to prepare the coupons with instructor's approval. Recommended prerequisites include WELD 100 and WELD 125.

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

Recommended prerequisites include WELD 100 and WELD 125.

Student Learning Outcomes

Explain a set of three existing hazards in SMAW pipe welding environment and identify applicable standards. Describe and demonstrate preparation of pipe samples for a DESTRUCTIVE BEND TEST to determine accept/reject status for SMAW pipe samples.

1. Describe four major hazards related to SMAW on pipe and potential abatement of these hazards as they pertain to shop safety. (ILO1, ILO2, ILO3)
2. Explain and safely demonstrate multiple beading and application in SMAW for welding on pipe and tube. (ILO1, ILO2, ILO3)
3. Select the proper filler materials for welding on various alloys as specified on the given WPS.
(ILO1, ILO2, ILO3)
4. Identify, recognize, and safely apply the essential variables associated with pipe and tube welding using the open root technique per the given WPS. (ILO1, ILO2, ILO3)

5. Reference the appropriate Welding Codes (AWS, API, and/or ASME) to determine the acceptance criteria for the welding of 4,6,or 8 inch schedule 40 or 80 carbon steel pipe in the 5G position and safely complete one joint per given WPS. (ILO1, ILO2, ILO3, ILO4)

Course Objectives

Upon satisfactory completion of the course, students will be able to:

1. Demonstrate and utilize safety protocols through the course.
2. Initiate the set-up of welding equipment while demonstrating safety protocols.
3. Study and comprehend the theory behind Shielded Metal Arc Welding on pipe.
4. Demonstrate the ability to cut and prepare pipe ends for welding.
5. Demonstrate the ability to weld pipe to x-ray quality.

Textbooks & Other Resources or Link

Required: Yes

Shielded Metal Arc Welding 6 Inch Pipe Uphill

SKU: EW-369 SMAWPU6

Additional resources:

Shielded Metal Arc Welding

SKU: EW-472

Modern Welding 11th edition. G-W Publisher. Technical Guide. Available in the bookstore.

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:

1. Demonstration
2. Discussion

3. Group activity
4. Individual assistance
5. Lab activity
6. Lecture
7. Simulation/case study
8. Audio visual computer assisted instruction

Two hours off independent work done out of class per each hour of lecture or class work, or 3 hours lab, practicum, or the equivalent per unit is expected.

Equipment and Supplies

- ☒ Personal protective Equipment (PPE)
1. Welding helmet
 2. Welding and cutting face shield
 3. Welding Cap
 4. Welding Gloves
 5. Leather Work Boots
 6. Ear plugs/protection
 7. Leather jacket or sleeve

Course Grading Based on Course Objectives

A=100%-90%

B=89%-80%

C=79%-70%

D= 69%-60%

F=59%-0

Course Policies

Attendance:

The instructor as of the first official meeting of that class will drop a student who fails to attend the first meeting of a class or does not complete the first mandatory activity of an online class. Should readmission be desired, the student's status would 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. 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.

IVC Student Resources

IVC wants you to be successful in all aspects of your education. For help, resources, services, and an explanation of policies, visit <http://www.imperial.edu/studentresources> or click the heart icon in Canvas.

Anticipated Class Schedule/Calendar

Date or Week	Activity, Assignment, and/or Topic	Pages/ Due Dates/Tests
Week 1 Jan 3-6	Syllabus & Introduction. SMAW introduction. Safety in Welding. SMAW cross plate practice 6010 all positions.	
Week 2 Jan 9-13	Weld joints and positions, Electrodes and classification, Welding Symbols, Welding current and polarity. Equipment and Supplies SMAW cross plate practice 7018 all positions	
Week 3 Jan 17-20	SMAW on Pipe 2G position. Root pass, hot pass, fill, cover. SMAW on pipe 5G position Root pass, hot pass, fill, cover. Midterm Exam	Mid-Term
Week 4 Jan 23-27	SMAW on Pipe 2G position. Root pass, hot pass, fill, cover. SMAW on pipe 5G position Root pass, hot pass, fill, cover.	
Week 5 Jan 30-Feb3	SMAW on Pipe 2G position. Root pass, hot pass, fill, cover. SMAW on pipe 5G position Root pass, hot pass, fill, cover.	Final Exam

*****Subject to change without prior notice*****