



IMPERIAL VALLEY COLLEGE WELDING TECHNOLOGY

Basic Course Information

Semester	Spring 2018	Instructor's Name	Fred Rivera
Course Title & #	WELD 135 SMAW on Plate	Instructor's Email	fred.rivera@imperial.edu
CRN #	20975	Webpage	
Room	Bldg. 3100 Rooms 3112 & 3120	Office	PT Faculty Office 809, ITEC Office 3101B
Class Dates	Mon - Tue	Office Hours	ITEC M/W/F 8-5pm
Class Days	Mon Lecture/Lab Tue Lecture/Lab	Office Phone #	ITEC Office 760-355-6361
Class Times	Mon. 6:00 - 7:05 - 9:10 Wed. 6:00 - 7:05 - 9:10	Who students should contact if emergency or other absence	Fred Rivera
Unites	3.00		

Course Description

Emphasis is on advances Gas Tungsten Arc Welding (GTAW) on carbon steel, aluminum and stainless. Proper plate cleaning, preparation, and fitting along with heat are emphasized through the course.

Students will be required to demonstrate safe welding equipment setup, plate welding in a 1G, 2G, 3G and 4G; 1F, 2F, 3F, and 4F fixed position. (CSU)

Student Learning Outcomes

1. Describe four major hazards related to GTAW on plate 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 GTAW for welding on plate. (ILO1, ILO2, ILO3).
3. Select the proper filler materials for welding on various alloys as specified on the given Welding Procedure Specification (WPS). International Organization for Standardization (ILO1, ILO2, ILO3).
4. Identify, recognize, and safely apply the essential variables associated with plate welding using the open root/close technique per the given WPS and (ILO1, ILO2, ILO3).
5. Reference the appropriate Welding Codes in accordance with American Welding Society (AWS and/or American Society of Mechanical Engineers (ASME) to determine the acceptance criteria for welding on carbon steel plate, Stainless Steel and Aluminum in above mentioned positions and safety complete one joints per given WPS.

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 GTAW welding equipment while demonstrating safety protocols.
3. Study and comprehend the theory behind GTAW on plate.
4. Demonstrate the ability to prepare plate ends for welding.
5. Demonstrate the ability to weld plate to x ray quality.

Students are made aware of other organizations. The most common is the AWS and its associated codes:

- a). Structural Welding Code Steel (AWS D1.1)
 - b). American Society for Testing Material Structural Steel (A-36 Plate).
 - c). International Organization for Standardization (ISO 128).
 - d). Occupational Safety and Health Administration (OSHA) and the National Institute for Occupational Safety and Health (NIOSH).
 - e). National Electrical Code (Safe installation of electrical wiring and equipment) or National Fire Protection Association (NFPA 70).
 - f). Understand the physical and chemical behavior of metallic/non-metallic elements, their inter- metallic/non-metallic compounds, and their mixtures, which are called alloys.
 - g). Protective Foot Wear: American National Standards Institute (ANSI) Z49.1 g).
 - h). Safety in Welding, Cutting, and Allied Processes (ANSI Z49.1).
 - i). Procedure Qualification Record (PQR) AWS D1.1/D1.1M:2015.
- Further, the following Code of Federal Regulations (CFRs) and National Standards will be briefly discussed during the course of this semester.
- a). CFR 29-Labor Occupational Safety and Health Administration
 - b). CFR 40-Protection of the Environment
 - c). CFR 49-Transportation of Hazardous Materials

Above-mentioned CFRs and or standards are integral parts and or associated with welding technology.

Textbooks & Other Resources or Links

Text Book: Welding Technology Fundamentals 4th Edition, William A Bowditch.

- Welding Principles and Applications, 4th Edition
- William A Bowditch, Kevin E. Bowditch and
- Mark A. Bowditch

Anticipated Class Schedule / Calendar

The following assignments are a tentative, provisional overview of the reading, assignments, tests, or other activity for the duration of the course.

Chapters:

- 1. Safety in the Welding Shop
- 3. The Physics of Welding
- 4. Weld Joints and Positions
- 15. GTAW Equipment and Supplies
- 16. GTAW Equipment Assembly and Adjustment
- 17. GTAW Flat Welding Position
- 18. GTAW Horizontal, Vertical and Overhead Welding Positions
- 32. Welding Pipe and Tube
- 34. Inspecting and Testing Welds
- 35. Welder Certification

Each student shall complete and present to the class a 15 minute Oral Presentation on any of the topics associated with GTAW and its associated safety procedures.

In addition, teaching materials, assignments and presentations will correspond to written examinations, laboratory assignments, class room presentation and Final Examination. Presentations and familiarizations are conducted by reviewing handbooks and publications published by the American Welding Society, American National Standards Institute (ANSI) the Occupational Safety and Health Administration (OSHA).

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.

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.

Required Personal Protective Equipment (PPE):

1. Welding helmet
2. Welding Cap
4. Welding Gloves
5. Leather Work Boots
6. Ear plugs/protection
7. Leather jacket or sleeve
8. Safety glasses
9. Ear plugs
10. Cotton (100%) long sleeve shirt and pants. Avoid wearing synthetic materials, including nylon, rayon, and polyester.

All other equipment, materials, & supplies will contribute to the learning process and success in the course.

For health and safety reasons, students are encourage to purchase their personal protective equipment.

Course Grading Based on Course

The cumulative effort of the student throughout the semester will have as an outcome an earned a grade of A, B, C, D, or F. All assigned activities will be quantifiable based on a designated point value. There will be a total point value per assignment/activity and there will be a total point value for the semester.

- A grade of “A” represents EXCELLENT work.
- A grade of “B” represents GOOD work.
- A grade of “C” represents SATISFACTORY work.
- A grade of “D” represents less than SATISFACTORY work.
- A grade of “F” represents UN SATISFACTORY work.
- Students must be present and take the written final examination to receive a letter grade.

Late assignments will not be accepted. Also, student must be present and complete the Final Examination to receive a passing grade.

Letter Grades

- Letter A - 90% to 100% points accumulated
- Letter B - 80% to 89% points accumulated
- Letter C - 70% to 79% points accumulated
- Letter D - 60% to 69% points accumulated

Note: The ACCEPTABLE/SATISFACTORY criteria for many Certification and Evaluation activities in Industry is seat the 70% rate to designate success with a notation of (Pass-Fail/Accept-Reject).

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.
 - a). Three absences are cause for immediate dismissal
 - b). Three tardiness equals one absence
 - c). Professional conduct is strictly enforced. Horseplay will not be tolerated (Imperial Valley College Standards of Conduct).

Classroom Etiquette

Required Information:

- **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.
- **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.

Academic Honesty

Required Language

- Plagiarism is to take and present 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 correctly 'cite a source', 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, or assisting others in using materials, which are prohibited or inappropriate in the context of the academic assignment in question.
- Anyone caught cheating or 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 School 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) use of a commercial term paper service.

Additional Help – Discretionary Section and Language

- Blackboard support center: <http://bbcrm.edusupportcenter.com/ics/support/default.asp?deptID=8543>
- Learning Labs: There are several 'labs' on campus to assist you through the use of computers, tutors, or a combination. Please consult your college map for the Math Lab, Reading & Writing Lab, and Learning Services (library). Please speak to the instructor about labs unique to your specific program.
- Library Services: There is more to our library than just books. You have access to tutors in the learning 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. If you feel you need to be evaluated for educational accommodations, the DSP&S office is located in Building 2100, telephone 760-355-6313.

Student Counseling and Health Services

- Students have counseling and health services available, provided by the pre-paid StudentHealth Fee. We now also have a fulltime mental health counselor. For information see <http://www.imperial.edu/students/student-health-center/>.
- The IVC Student Health Center is located in the Health Science building in Room 2109, telephone 760-355-6310.

Student Rights and Responsibility

Students have the right to experience a positive learning environment and due process. For further information regarding student rights and responsibilities please refer to the IVC General Catalog available online at http://www.imperial.edu/index.php?option=com_docman&task=doc_download&gid=4516&Itemid=762

Information Literacy

Imperial Valley College is dedicated to help students skillfully discover, evaluate, and use information from all sources. Students can access tutorials at <http://www.imperial.edu/courses-and-programs/divisions/arts-and-letters/library-department/info-lit-tutorials/>

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Don't Drink and Drive - Nothing follows