



## IMPERIAL VALLEY COLLEGE WELDING TECHNOLOGY

### Basic Course Information

Semester	Spring 2016	Instructor's Name	Fred Rivera
Course Title & #	Welding Technology	Instructor's Email	Imperialedu\fred.rivera
CRN #	20863	Webpage (optional)	
Room	3100 – 3120	Office (PT Faculty:809)	
Class Dates	M T W	Office Hours (n/a for PT Faculty)	
Class Days	MW Room 3100 T Room 3120	Office Phone # (PT may use dept. number)	
Class Times	0600-0910	Who students should contact if emergency or other absence	Fred Rivera
Units	5.00		

### Course Description

The student will be exposed to a complete basic study of welding technology up to include Health and Safety, Personal Protective Equipment, Fire Protection and Electrical Safety.

The student practices techniques for skill development in shielded metal arc welding (SMAW), gas tungsten arc welding (GTAW), flux cored arc welding (FCAW), soldering/brazing welding (S/BW), and oxygen-acetylene (OXY-ACE) welding and cutting processes.

In addition, American Welding Society, Code of Federal Regulations (CFRs), specifications and welding standards will be discussed during the course of this semester.

## Student Learning Outcomes

Set up a SMAW equipment or any of the following GTAW, FCAW, GMAW or OXYACE process in a safe manner and in accordance with the most complete and influential safety document available today entitled Safety in Welding, Cutting, and Allied Processes ANSI Z49.1. Further, the American Welding Society publishes this document, with outlines the procedures and practices that will keep you and others safe from the many potential dangers of welding, cutting, and related processes.

### Institutional Learning Outcomes

Student success at Imperial Valley College will include improvement of the following skills/abilities/knowledge:

**Communication Skills**

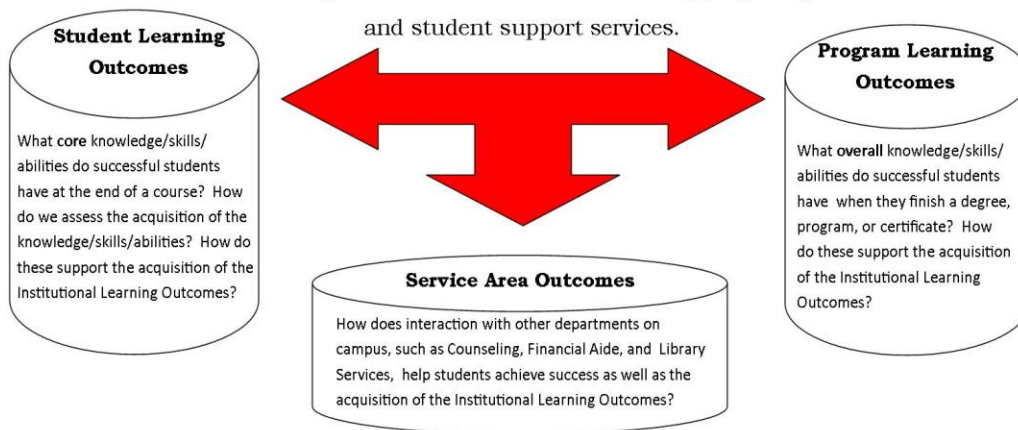
**Critical Thinking Skills**

**Information Literacy**

**Personal Responsibility**

**Global Awareness**

These guide our assessments for courses, programs, and student support services.



## Course Objectives

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

- a). AWS D1.1 Structural Welding Code Steel
- b). AWS D1.2 Structural Welding Code Aluminum
- c). AWS D1.3 Structural Welding Code Sheet Metal
- d). AWS D1.4 Structural Welding Code Reinforcing Steel
- e). AWS D1.5 Bridge Welding Code
- f). American National Standards Institute (ANSI) Z49.1 Protective Foot Wear
- g). ANSI Z89 Safety Glasses

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 - Workbook**

- Welding Principles and Applications, 4<sup>th</sup> Edition
- William A Bowditch, Kevin E. Bowditch and

- Mark A. Bowditch

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), Oxyfuel Gas Welding, Cutting and Heating Safety, and Safety in Welding, Cutting and Allied Processes (ANSI) Z49.1

### **Course Requirements and Instructional Methods**

The student must be able to understand and demonstrate the basic techniques in SMAW, GTAW and OXY-ACE, FCAW, S&BW processes. Also, students must be able to demonstrate proper use and identification of fire extinguisher classification, burns/electrical hazards, respiratory protection, AWS Standards, Health and Safety, and fire Protection.

In addition, students must take personal responsibility for their own safety and the safety of others.

The teacher will discuss, explain in detail and demonstrate each welding technique and process.

Students are encouraged to ask questions and/or seek assistance during classroom or welding presentations, or at any time during the sessions. In the event the student does not comprehend and has a legitimate questions associated with the test book, students are encourage to contact the teacher 24/7.

Students must display team building attitude, interest and goodwill at all times.

**Required special personal protective equipment**

- a). Safety boots
- b). All-leather gauntlet-type gloves
- c). Safety glasses
- d). Ear plugs
- e). Safety welding cap
- f). Cotton (100%) long sleeve shirt and pants. Avoid wearing synthetic materials, including nylon, rayon, and polyester.
- g). All other equipment, materials, and supplies will be contribute to the learning process and success in the course.
- h). For health and safety reasons, students are encourage to purchase their personal protective equipment (e. g. welding jacket and welding helmet).

## Course Grading Based on Course Objectives

This course is designed to be an essential part of the course sequence in the programs of; Welding Technology.

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). A grade of “A” represents EXCELLENT work.
- b). A grade of “B” represents GOOD work.
- c). A grade of “C” represents SATISFACTORY work.
- d). A grade of “D” represents less than satisfactory work.
- e). A grade of “F” represents un-satisfactory work.
- f). 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**

- a). Letter A - 90% to 100% points accumulated

- b). Letter B - 80% to 89% points accumulated
- c). Letter C - 70% to 79% points accumulated
- d). Letter D - 60% to 69% points accumulated

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

## Attendance

### Required Language

- 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 is cause for immediate dismissal
- b). Three tardiness equals to 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. **Consider:** specifics for your class/program.
- 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)**

##### **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. 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

### Required Language:

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

### Required Language:

- 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](http://www.imperial.edu/index.php?option=com_docman&task=doc_download&gid=4516&Itemid=762)

## Information Literacy

### Required Language:

- 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/>

## 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. The student may find this table format useful for this purpose.

- Chapters      1. Safety in the Welding Shop
- 2. Welding and Cutting Processes
- 4. Weld Joints and Positions

- 5. SMAW Equipment and Supplies
- 6. SMAW Equipment Assembly and Adjustments
- 7. SMAW Electrodes
- 8. SMAW Flat, Horizontal, Vertical and Overhead Welding Positions
- 11. GMAW Equipment and Supplies
- 12. GMAW Equipment Assembly and Adjustment
- 15. GTAW Equipment and Supplies
- 16. GTAW Equipment Assembly and Adjustment
- 20. Oxyfuel Gas Cutting and Welding Equipment and Supplies
- 25. Brazing and Soldering Welding
- 33. Welding Symbols

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**Don't Drink and Drive - Nothing follows**