IMPERIAL VALLEY COLLEGE

Basic Course Information

Semester:	**FALL 2022**	Instructor Name:	**JUAN REAL**
Course Title & #:	**WELD 125**	Email:	**juan.real@imperial.edu**
CRN #:	**10793**	Webpage (optional):	**www.imperial.edu**
Classroom:	**3120-3111**	Office #:	**3122**
Class Dates:	**8/15/22 – 12/10/22**	Office Hours:	**TUESDAY 5:00 – 6:00** **THURSDAY 5:00 – 6:00** **EMAIL 5:00 TO 5:30** **IN CLASS 3120 5:30 TO 6:00**
Class Days:	**TUESDAY AND THURSDAY**	Office Phone #:	**SECRETARY/DIVISION OFFICE 760-3556361** **SECRETARY/DEAN'S OFFICE 760-355-6217** **DIVISION COORDINATOR 760-355-6361**
Class Times:	**TUESDAY 6:00 – 9:15 PM** **THURSDAY 6:00 – 9:15 PM**	Emergency Contact:	
Units:	3	Class Format:	

Course Description

Emphasis is on advances Gas Tungsten Arc Welding on Carbon Steel, and Stainless , and Aluminum plates, Safety equipment set up , welding symbols, and its application in GTAW process. The student will develop the theory and knowledge base to be able to safely and properly practice welding techniques in GAS TUNGSTENG ARC WELDING on steel A-36, Stainless Steel and aluminum plate. Fundamentals of GTAW Welding Metallurgy Quality Assurance and the proper use of Personal Protective Equipment and the application of all safety rules.

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

WELD 100 with a grade of "C" or better

Student learning Outcome

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

1. Explain the legal responsibilities of Employers, Supervisors, and Welding Personnel with regard to "Right to Know" OSHA regulations.
2. Explain the "Hierarchy of Hazard Control" in a GTAW welding environment to include; Hazard Identification, Hazard Elimination, Administrative Controls, Engineering Controls, and Personal Protective Equipment.

3. Explain and apply GTAW procedures to include; safe and proper set-up of GTAW welding equipment and correct interpretation of applicable WPS's.
4. Complete a written report based on information gathered from a Technical Literature Review of "Gas Tungsten Arc Welding and its Many Uses in Manufacturing."
5. Define the physical and mechanical properties of Steel, Stainless Steel, and Aluminum, and how these are influenced by Gas Tungsten Arc Welding (GTAW)

Course Objectives

Upon satisfactory completion of the course, students will be able to:
1. Understand, recognize, and demonstrate safe practices and proper use of related tools.
2. Understand and apply GTAW terminology and weld/welding symbols.
3. Understand and apply the principles of filler materials science and welding metallurgy.
4. Understand and explain the electrical fundamentals applicable to GTAW welding power sources.
5. Understand and explain the set-up and operation of welding circuits and power sources.
6. Understand and demonstrate the principles of Gas Tungsten Arc Welding (GTAW).
7. Understand and demonstrate the principles of Quality Assurance and Weld Inspection.

Textbooks & Other Resources or Links

Required: Yes

Modern Welding 11th edition, ALTHHOUSE ,TURQUIST, BOUDICHS ISBN# 978-1-60525-795-2 Copyright 2013-2014

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

- Class participation required
- Written and practical test
- Quizzes/exams
- Group and individual projects

Grade	Points
A	900-1000
B	800-899
C	700-799
D	600-699
F	0-599

Grades are posted regularly on **Canvas.** You may earn up to 1,000 points as follows:

Points possible	Assignment/Assessment	Details
80	Class participation	5 points each X 16 assignments
160	Lab exercises	20 points each X 8 assignments
160	Quizzes	20 points each X 8 quizzes
600	Written and Practical Exams	150 points X 4 exams

1. **Attendance:** Required for class participation and lab exercises.
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

Course Policies

Refer to the college catalog for the attendance and academic honesty policies.

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

Activity, Assignment, and/or Topic	**In-Class Exercises**	**Assignment**	WEEK
Syllabus & Introduction	Introduction	Written essay on goals and expectation of weld 125	1
Chapter 1 safety in the welding shop	Chapter 1 exercises and Review LAB ASSIGNMENT	Chapter 1 Quiz	2
Proper safe operation and practices in the work area.	Demonstrations LAB ASSIGNMENT		3
Chapter 4 welding and cutting processes	Chapter 4 exercises and review LAB ASSIGMENT	Chapter 4 Quiz	4
Chapter 7 GTAW Equipment and supplies	Chapter 7 exercises and review LAB ASSIGMENT	Chapter 7 Quiz	5,6

Activity, Assignment, and/or Topic	**In-Class Exercises**	**Assignment**	WEEK
Chapter 8 Gas Tungsten Arc Welding	Chapter 8 exercises and review LAB ASSIGNMENT	Chapter 8 Quiz	7,8
EXAM 1 WRITTEN **EXAM 2 LAB**	 LAB ASSIGNMENT		9
Chapter 3 Welding Joints, Positions, and Symbols	Chapter 3 exercise and review LAB ASSIGMENT	Chapter 3 Quiz	10,11
Chapter 22 Pipe and Tube Welding	Chapter 22 exercise and review LAB ASSIGMENT	Chapter 22 Quiz	12,13
Chapter 30 Inspecting and Testing Welds	Chapter 30 exercise and review LAB ASSIGMENT	Chapter 30 Quiz	14
Chapter 32 The Welding Shop	Chapter 32 exercise and review LAB ASSIGMENT	Chapter 32 Quiz	15
EXAM 3 WRITTEN **EXAM 4 LAB**			16

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