IMPERIAL VALLEY COLLEGE

Basic Course Information

Semester:	**SPRING 2023**	Instructor Name:	**JUAN REAL**
Course Title & #:	**WELD 225**	Email:	juan.real@imperial.edu
CRN #:	**20906**	Webpage (optional):	**WWW.IMPERIAL.EDU**
Classroom:	**3120-3111**	Office #:	**3122**
Class Dates:	**FEB 13 – JUN 9**	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 – 9:10 PM THURSDAY 6:00 – 9:10 PM	Emergency Contact:	
Units:	3	Class Format:	

Course Description

Emphasis is on advances Gas Tungsten Arc Welding on Carbon Steel, and Stainless purged pipe. 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 carbon steel, Stainless Steel. 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 125 with a grade of "C" or better.

Student Learning Outcomes

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 and demonstrate pipe joint preparation and lay-out per established WPS's.
3. Complete a written report based on information gathered from a Technical Literature Review of "Gas Tungsten Arc Welding on Pipe and the API and ASME Section IX welding codes as they are applied in the Construction Industry."
4. Identify, recognize, and safely apply the essential variables associated with pipe and tube welding using the open root technique per the given WPS.

5. Explain three major details and procedures that are common to GTAW as prescribed in the AWS, ASME, and API Pipe Welding Codes.

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

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.

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.

Other Course Information

- Personal protective Equipment (PPE) 1. Welding helmet

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

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

Week	IN CLASS	IN-CLASS EXCERCISES	ASSIGNMENT
Week 1	SYLLABUS & INTRODUCTION	INTRODUCTION	START REVIEW OF CHAPTER 1 SAFETY IN THE WELDING SHOP (HOMEWORK)

Week	IN CLASS	IN-CLASS EXCERCISES	ASSIGNMENT
		WRITTEN ESSAY ON GOALS AND EXPECTATIONS OF WELD 225	
Week 2	CHAPTER 1 SAFETY IN THE WELDING SHOP	REVIEW CHAPTER 1 LAB EXERCISE	CHAPTER 1 QUIZ
Week 3	CHAPTER 7 GTAW EQUIPTMENT AND SUPPLIES	CHAPTER 7 REVIEW 7.1 -7.7 LAB EXERCISE	
Week 4	CHAPTER 7 GTAW EQUIPTMENT AND SUPPLIES	CHAPTER 7 REVIEW 7.1 – 7.7 LAB EXERCISE	CHAPTER 7 QUIZ
Week 5	CHAPTER 8 GAS TUNGSTEN ARC WELDING	CHAPTER 8 REVIEW 8.1 – 8.16 LAB EXERCISE	
Week 6	CHAPTER 8 GAS TUNGSTEN ARC WELDING	CHAPTER 8 REVIEW 8.1 – 8.16 LAB EXERCISE	CHAPTER 8 QUIZ
Week 7	CHAPTER 22 PIPE AND TUBE WELDING	CHAPTER 22 REVIEW 22.1 – 22.13	
Week 8	CHAPTER 22 PIPE AND TUBE WELDING	CHAPTER 22 REVIEW 22.1 – 22.13	CHAPTER 22 EXAM
Week 9	EXAM	EXAM 1 WRITTEN EXAM 2 LAB	EXAM
Week 10	CHAPTER 4 OXYFUEL CUTTING PROCESS, PIPE CUTTING PROCESS	CHAPTER 4 REVIEW 4.3.3 -4.3.6 WORK SHEETS LAB EXERCISE	
Week 11	CHAPTER 4 OXYFUEL CUTTING PROCESS, PIPE CUTTING PROCESS	CHAPTER 4 REVIEW 4.3.3 -4.3.6 WORK SHEETS LAB EXERCISE	CHAPTER 4 QUIZ
Week 12	CHPATER 13 OXY GAS CUTTING EQUIPTMENT AND SUPPLIES	CHPATER 13 REVIEW OXY GAS CUTTING EQUIPTMENT AND SUPPLIES LAB EXERCISE	
Week 13	CHPATER 13 OXY GAS CUTTING EQUIPTMENT AND SUPPLIES	CHPATER 13 REVIEW OXY GAS CUTTING EQUIPTMENT AND SUPPLIES LAB EXERCISE	CHPATER 13 QUIZ
Week 14	CHPATER 14 OXY FUEL GAS CUTTING CUTTING PIPE AND TUBING	CHPATER 14 REVIEW OXY FUEL GAS CUTTING CUTTING PIPE AND TUBING	

Week	IN CLASS	IN-CLASS EXCERCISES	ASSIGNMENT
		WORKSHEET / LAB EXERCISE	
Week 15	CHPATER 14 OXY FUEL GAS CUTTING CUTTING PIPE AND TUBING	CHPATER 14 REVIEW OXY FUEL GAS CUTTING CUTTING PIPE AND TUBING WORKSHEET / LAB EXERCISE	CHAPTER 14 QUIZ
Week 16	CHAPTER 3 WELDING POSITIONS, WELDING PIPE POSITIONS	CHPATER 3 REVIEW 3.4 – 3.4.4 WORK SHEETS LAB EXERCISE	CHAPTER 3 QUIZ
Week 17	FINAL EXAM	EXAM 1WRITTEN EXAM 2 LAB	

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