

### Basic Course Information

Semester:	<b>FALL 2025</b>	Instructor Name:	<b>Frank Cervantes</b>
Course Title & #:	<b>WELD 125</b>	Email:	<a href="mailto:frank.cervantes@imperial.edu">frank.cervantes@imperial.edu</a>
CRN #:	<b>10793</b>	Webpage (optional):	<b>www.imperial.edu</b>
Classroom:	<b>3120</b>	Office #:	<b>3122</b>
Class Dates:	<b>8/11/25 – 12/06/25</b>	Office Hours:	<b>TUESDAY 5:00 – 6:00 THURSDAY 5:00 – 6:00</b>
Class Days:	<b>TUESDAY AND THURSDAY</b>	Office Phone #:	<b>SECRETARY/DIVISION OFFICE 760-355-6361 SECRETARY/DEAN'S OFFICE 760-355-6217 DIVISION COORDINATOR 760-355-6361</b>
Class Times:	<b>TUESDAY 6:00 – 9:15 PM THURSDAY 6:00 – 9:15 PM</b>	Emergency Contact:	<b>760-427-0999</b>
Units:	<b>3</b>	Class Format:	<b>face to face</b>

### 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 11<sup>th</sup> edition, ALTHHOUSE ,TURQUIST, BOUDICHS ISBN#  
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## 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
<b>A</b>	900-1000
<b>B</b>	800-899
<b>C</b>	700-799
<b>D</b>	600-699
<b>F</b>	0-599

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

Points possible	Assignment/Assessment	Details
<b>80</b>	Class participation	5 points each X 16 assignments
<b>160</b>	Lab exercises	20 points each X 8 assignments
<b>160</b>	Quizzes	20 points each X 8 quizzes
<b>600</b>	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

WEEK	IN CLASS	IN CLASS EXERCISE	ASSIGNMENT
WEEK 1	Syllabus & Introduction	Written essay on goals and expectation of weld 125	
WEEK 2	Chapter 1 safety in the welding shop	REVIEW CHAPTER 1 LAB EXERCISE	CHAPTER 1 QUIZ
WEEK 3	CHAPTER 7 GTAW EQUIPMENT AND SUPPLIES	CHAPTER 7 REVIEW 7.1-7.7 LAB EXERCISE	
WEEK 4	CHAPTER 7 GTAW EQUIPMENT 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	IN CLASS	IN CLASS EXERCISE	ASSIGNMENT
WEEK 7	CHPATER 3 WELDING JOINTS, POSITIONS AND SYMBOLS	CHAPTER 3 REVIEW 3.4-3.4.4 LAB EXERCISE	
WEEK 8	CHPATER 3 WELDING JOINTS, POSITIONS AND SYMBOLS	CHAPTER 3 REVIEW 3.4-3.4.4 LAB EXERCISE	CHAPTER 3 QUIZ
WEEK 9	MID TERM EXAM	EXAM 1- WRITTEN EXAM 2- LAB	EXAM
WEEK 10	CHAPTER 4 WELDING AND CUTTING PROCESSES	CAHPTER 4 REVIEW LABEXRECISE	
WEEK 11	CHAPTER 4 WELDING AND CUTTING PROCESSES	CAHPTER 4 REVIEW LABEXRECISE	CHPATER 4 QUIZ
WEEK 12	CHAPTER 32 THE WELDING SHOP	CHAPTER 32 REVIEW LAB EXERCISE	
WEEK 13	CHAPTER 32 THE WELDING SHOP	CHAPTER 32 REVIEW LAB EXERCISE	CHAPTER 32 QUIZ
WEEK 14	CHAPTER 33 GETTING AND HOLDING A JOB IN THE WELDING INDUSTRY	CHAPTER 33 REVIEW LAB EXERCISE	
WEEK 15	THANKSGIVING BREAK		
WEEK 16	CHAPTER 33 GETTING AND HOLDING A JOB IN THE WELDING INDUSTRY	CHAPTER 33 REVIEW LAB EXERCISE	CHAPTER 33 QUIZ
WEEK 17	FINAL EXAM	EXAM 1- WRITTEN EXAM 2- LAB	EXAM

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



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