

COURSE PLAN

FIRST: BASIC INFORMATION

College					
College	: Al-Karak University College				
Department	: Mechanical Engineering				
Course					
Course Title	: GAS Welding 2				
Course Code	: 020209225				
Credit Hours	: 2 (0 Theoretical, 2 Practical)				
Prerequisite	: 020209126				
Instructor					
Name	: Dr Khaleel Abushgair				
Office No.	:				
Tel (Ext)	:				
E-mail	: abushgair@bau.edu.jo				
Office Hours	:				
Class Times	The building	today	Start time	End time	Hall number
Text Book					
Title	:				

References

1. Modern Welding; last Edition Althouse/Turnquist/Bowditch/Bowditch
Goodheart-Wilcox Co., Inc.
2. Welding Technology American Technical Society Chicago last edition,
3. J. W Giachino W. weeks G.s Johnson 2. Modern Welding, by A.D Althouse C.H Turnquist and W.A. Bowditch, South Holland Illinois, last edition

SECOND: PROFESSIONAL INFORMATION

COURSE DESCRIPTION

This course covers the advance and proficiently of oxy-fuel gas welding, oxyacetylene gas welding, description and operating procedures of oxy-Acetylene welding and cutting equipment's. , description and safe operating procedures of oxy-acetylene regulators, maintenance of oxy acetylene welding and cutting blow pipes, types of oxy-acetylene flames and their uses, gas welding parameters, selection of nozzle size and oxy acetylene gas pressure to cut different thickness of metals and gas welding filler rods and fluxes and welding techniques, reclamation by welding principles, selection of nozzle size, filler metals and fluxes.

COURSE OBJECTIVES

The main objectives of this course are to enable the student to do the follows;

- Explain the processes and safety issues involved in usage of the various gas welding processes, advanced operating skills of oxy-fuel welding and cutting.
- Explain and describe safe operating procedures of oxy-acetylene regulators, oxy acetylene welding and cutting method.
- Develop manipulative proficiency in the use of oxyfuel metal welding in the horizontal (2F-2G), vertical (3F-3G), and overhead (4F-4G) positions on pipe and plates.
- Explain reclamation by welding, and thick plates welding using gas welding technology.

COURSE LEARNING OUTCOMES

On successful completion of this course, students are expected to be able to:

CLO1. Explain a advanced knowledge on gas welding such as weld joint and positions used in industry, gas welding and shop safety, measuring and cutting materials

CLO2. **Perform** oxyacetylene gas welding process, complete oxyacetylene gas welding technology on steel pipe and plates in flat position, horizontal position and vertical position

CLO3. **Perform** how to cut pipe materials with different thick using oxyacetylene gas, and the effects according to the gas conditions

CLO4. **Perform** oxyacetylene welding methods for pipe materials made from nonferrous metals of copper and aluminum

CLO5. **Perform** reclamation by welding and oxyacetylene reclamation, apply the oxyacetylene metal reclamation to different parts

CLO6. **Perform** thick plates welding and cutting using oxyacetylene flame, and testing and inspection

COURSE SYLLABUS

Week	Topic	Topic details	Related L.O. and Reference (chapter)	Proposed assignments
1	Introduction to oxyfuel gas welding and safety in welding workshops	<ul style="list-style-type: none"> • Course introduction • Welding and general shop safety • Personal protection equipment's (PPE) used in welding and functionality • Basic weld joints and positions • Measuring and cutting materials 	CLO1	
2	Oxyacetylene welding process	<ul style="list-style-type: none"> • Oxyacetylene welding equipment and supplies • Oxyacetylene welding equipment, welding torches. • Regulators • Flame types and control equipment's • Introduction to the process of oxyacetylene welding in the flat and horizontal position 	CLO2	



Week	Topic	Topic details	Related L.O. and Reference (chapter)	Proposed assignments
3	Oxyacetylene welding process practice	<ul style="list-style-type: none"> Oxyacetylene welding gasses and torches Welding fillers & numbering Types of gas cylinders and regulators Techniques for starting the flame Practical experience in the use and application of oxyacetylene welding 	CLO2	
4	Oxyacetylene welding process practice	<ul style="list-style-type: none"> Practical experience in the use and application of oxyacetylene welding on various mild steel sheet and pipes and bars in flat positions 1- Fillet Lap 2, fillet T joints 3, outside corner joint 4, square butt joint Visual inspection of welded joints 	CLO2	
5	Oxyacetylene welding process practice	<ul style="list-style-type: none"> Practical experience in the use and application of oxyacetylene welding on various mild steel pipes and bars in horizontal positions 1- Fillet Lap 2, fillet T joints 3, outside corner joint 4, square butt joint Visual inspection of welded joints 	CLO2	
6	Oxyacetylene welding process practice	<ul style="list-style-type: none"> Practical experience in the use and application of oxyacetylene welding on various mild steel pipes and bars in vertical positions 1- Fillet Lap 2, fillet T joints 3, outside corner joint 4. square butt joint Welding problems and solutions 	CLO2	
7	Oxyacetylene metal cutting process practice	<ul style="list-style-type: none"> Applications to used oxyacetylene cutting process in cutting of different plates , pipes and bars with different thickness and poisons 	CLO3	
8	Midterm Exam			
9	Oxyacetylene pipes metal cutting process practice	<ul style="list-style-type: none"> Applications to used Oxyacetylene cutting process in cutting of different pipes with different thickness and poisons Cutting problems and solutions 	CLO3	
10	Oxyacetylene Welding methods for pipes made from nonferrous metals	<ul style="list-style-type: none"> Copper and its alloys welding problems Aluminum and its alloys welding methods problems Testing and inspecting welds joints methods 	CLO4	



Week	Topic	Topic details	Related L.O. and Reference (chapter)	Proposed assignments
11	Oxyacetylene metal cutting methods for pipes made from nonferrous metals	<ul style="list-style-type: none"> • Copper and its alloys cutting process parameters • Aluminum and its alloys cutting parameters and problems • Testing and inspecting cutting area 	CLO4	
12	Reclamation by Welding	<ul style="list-style-type: none"> • Reclamation methods • Factors affecting reclamation methods • Rod welding • Heating reclamation • Oxyacetylene reclamation 	CLO5	
13	Oxyacetylene metal Reclamation	<ul style="list-style-type: none"> • Application using oxyacetylene metal reclamation in different parts. • Testing and inspecting reclamation area 	CLO5	
14	Metal spraying	<ul style="list-style-type: none"> • What's metal spraying • Applications of metal spraying • Oxyacetylene spraying • Practices of oxyacetylene spraying 	CLO5	
15	Practice on thick plates welding and cutting using Oxyacetylene flame	<ul style="list-style-type: none"> • Practice on thick plates welding and cutting using oxyacetylene flame 	CLO6	
16	Final Exam			

COURSE LEARNING RESOURCES

The methods used in teaching the program, are mentioned, sch as lectures, discussion sessions, practivity, and other activities)
 -Discussion and explanation sessions
 -Practical activity and execution

ONLINE RESOURCES

1) <https://www.aws.org/home>

ASSESSMANT TOOLS

Assessment Tools	%
Projects and Quizzes	20%
MID Exam	30%
Final Exam	50%
Total Marks	100%

**THIRD: COURSE RULES****ATTENDANCE RULES**

Attendance and participation are extremely important, and the usual University rules will apply. Attendance will be recorded for each class. Absence of 10% will result in a first written warning. Absence of 15% of the course will result in a second warning. Absence of 20% or more will result in forfeiting the course and the student will not be permitted to attend the final examination. Should a student encounter any special circumstances (i.e. medical or personal), he/she is encouraged to discuss this with the instructor and written proof will be required to delete any absences from his/her attendance records.

GRADING SYSTEM**Example:**

Average	Maximum	Minimum
Excellent	100%	90%
Very Good	89%	80%
Good	79%	70%
Satisfactory	69%	60%
Weak	59%	50%
Failed	49%	35%

REMARKS

{ The instructor can add any comments and directives such as the attendance policy and topics related to ethics }

COURSE COORDINATOR

Course Coordinator **DR Khaleel Abushgair**

Department Head:

Signature:

Signature:

Date:

Date: