هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

T-104
2022

Course Specification

Course Title:	Welding and Inspection
Course Code:	122 MMET
Program:	Mechanical Maintenance Engineering Technology (MMET)
Department:	Mechanical Engineering Technology (MET)
College:	College of Applied Industrial Technology (CAIT)
Institution:	Jazan University
Version:	T-104 - 2022
Last Revision Date:	2023

Table of Contents:

A. General Information about the Course

Course Identification									
1. Credit Hours: 3									
2. Course Type:									
a. University		College		Department	☑	Track		Others	
b. Required	☑	Elective							
3. Level/year at which this course is offered:				**5th** Level			**2nd** Year		

4. Course General Description

This course provides an overview of welding tools and equipment's, metallurgy, and joints' design. The course concerns various welding processes, welded joints, and destructive and nondestructive testing of welding joints, accepted testing requirements and procedures, measurement systems, duties and responsibilities of inspectors, quality assurance/quality control and qualification of welders and welding operators.
The course is introduce through three classes weekly. They are 2 classes (1 hour each) for the theoretical part and 3 hours' class for laboratory for which students apply and implement the concepts of the lectures.

5. Pre-requirements for this course (if any): 121 MMET
6. Co- requirements for this course (if any): -------
7. Course Main Objective(s):

This course offers a wide variety of knowledge on the part of the inspector and understanding of welding drawings, symbols, and procedures; weld joint design; code and standard requirements; and inspection and testing techniques. Many welding codes and standards require that the welding inspector be formally qualified.

1. Teaching Mode: (Mark all that apply)

No	Mode of Instruction	Contact Hours	Percentages
1	Traditional classrooms	44	100.0%
2	E-learning	0	0.0%
3	Hybride * Traditional classrooms * E-learning	0	0.0%
4	Distance learning	0	0.0%

2. **Contact Hours** **(based on the academic semester)**

No	Activity	Contact Hours
1	Lectures	22
2	Laboratory/Studio	22
3	Field	0
4	Tutorial	0
5	Others (specify)	0
	Total	**44**

Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes (CLOs)	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	**Knowledge and understanding**			
1.1	Distinguish among the basic concepts; codes, standards and specifications relevant to each specific welding fabrication activity.	K1.1	Structured Lectures Collaborative Learning	Quizzes Exams
2.0	**Skills**			
2.1	Adapt the Knowledge of engineering technology to interpret the procedure of safe practices in the welding environment with different welding machines.	S1.1	Structured Lectures Questioning	Quizzes Exams
2.2	Apply the rules and principles to define the construction and rules needing to operate the welding machines with recommendation.	S2.2	Structured Lectures Questioning	Quizzes Exams
2.3	prepare well organized written flowcharts, blueprints and drawings to achieve specified welding joints configurations.	S3.3	Structured Lectures Collaborative Learning	Quizzes Report
2.4	Consider standard tests and apply measuring tools and instruments to achieve the best quality of weldments.	S4.1	Structured Lectures Questioning	Quizzes Exams
3.0	**Values, autonomy, and responsibility**			
3.1	Work with hand tools and welding machines independently and meet deadlines	V1.1	Structured Lectures Questioning	Quizzes Exams
3.2	Capture essential information about welding mechanisms from different sources	V2.2	Structured Lectures Questioning	Quizzes Exams

C. Course Content

No	List of Topics	Contact Hours
1	The classification of joining processes	3
2	Basic concepts; weld joint geometry, weld types, welds positions, and the weld weaving motions.	3
3	Metal Joining Processes (Fusion, Solid State, Resistance, Brazing, and Soldering Processes)	30
4	Welding Defects.	6
5	Inspection Reports of destructive and non-destructive tests Processes.	2
	Total	**44**

D. Students Assessment Activities

No	Assessment Activities	Assessment Timing (In Week No)	Percentage of Total Assessment Score
1	Mid-Term	Week 7	15%
2	Quiz	Week 8	5%
3	Lab Pratical	All Weeks	30%
4	Assignment	As Scheduled	10%
5	Final Exam	As Scheduled	40%

* Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.)

E. Learning Resources and Facilities

1 References and Learning Resources

Essential References	1	• Classroom policy
	2	• Lecture notes and hardcopies of some sections from "Engineering Mechanics – Statics, 12th Edition, R.C. Hibbeler".
Supportive References	1	• Certification Manual for Welding Inspectors, 4th edition, American Welding Society, International Standard Book Number: 0-87171-626-7, 2000.
	2	• Structural Welding Code-Steel, 23rd edition, Prepared by the American Welding Society (AWS) D1 Committee on Structural Welding, 2010.
Electronic Materials	1	http\\www.youtube.com
Other Learning Materials	1	Black Board

2 Required Facilities and Equipment

Items	Resources
Facilities (Classrooms, Laboratories, Exhibition rooms, Simulation Room, etc.)	Suitable Classroom Suitable Lab Suitable number of chairs Whiteboard
Technology Equipment (Projector, Smart Board, Software)	Smart Board Projector Suitable Software
Other Equipment (Depending on the nature of the specialty)	Not utilized

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Method
Effectiveness of Teaching	Program Coordinator	Direct/Indirect
Quality of Learning Resources	Program Coordinator	Direct/Indirect
The extent to which CLOs have been achieved	Student	Direct/Indirect
Other		

G. Specification Approval Data

Council/Committee	Mechanical Engineering Technology (MET)
Reference Number	
Date	