هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

T-104
2022

Course Specification

Course Title:	Fluid Mechanics
Course Code:	231 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

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A. General Information about the Course

Course Identification								
1. Credit Hours: 2								
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

1. Course Description

This course is concerned with the fundamentals of fluid mechanics. This includes the study of fluids statics, analysis of the fluid flow, flow measurements. This class provides students with principal concepts and methods of fluid mechanics. Topics covered in the course include pressure, hydrostatics, and buoyancy; fluid kinematics, flow through pipes, fluid dynamics, and momentum equation and its applications; dimensional analysis. students apply and implement the concepts of the lectures.

5. Pre-requirements for this course (if any): 191 PHYS

6. Co- requirements for this course (if any): -------

7. Course Main Objective(s):

This course offers an introduction to the Fluid properties and principles of Fluid mechanics. This course also focuses on various principals of fluid statistics, Theory of Buyancy and floatation, Fluid kinematics and Fluid dynamics.

1. Teaching Mode: (Mark all that apply)

No	Mode of Instruction	Contact Hours	Percentages
1	Traditional classrooms	33	100.0%
2	E-learning		0.0%
3	Hybride * Traditional classrooms * E-learning		0.0%
4	Distance learning		0.0%

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

No	Activity	Contact Hours
1	Lectures	11
2	Laboratory/Studio	22
3	Field	
4	Tutorial	
5	Others (specify)	
	Total	**33**

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	Recall basic concept of fluid and its properties.	K1.2	Structured Lectures Worked Examples	Homework Exams
2.0	**Skills**			
2.1	Describe various fluid parameters (like pressure, velocity, flow rate, energy etc.) under Static, Kinetic and Dynamic conditions of Fluid.	S1.2	Structured Lectures Worked Examples	Homework Exams
2.2	Solve given Problems to compute Missing Parameters of Fluid (under Static, Kinematic and Dynamic conditions)	S1.2	Structured Lectures Worked Examples	Report Exams
2.3	Demonstrate various fluid parameters written and graphically through experiment.	S3.1	Structured Lectures Worked Examples	Homework Exams
3.0	**Values, autonomy, and responsibility**			
3.1	Participate in Team work (Quizes), Timely completion of task, Showing eagerness towards self improvement.	V1.3	Collaborative Learning Questioning	Report Oral

C. Course Content

No	List of Topics	Contact Hours
1	Fundamental Concepts of Fluid Mechanics and Fluid properties	2
2	Fluid Statics: Fluid properties in static conditions. Commonly used pressure measuring instruments. Buoyancy & Floatation	3
3	Fluid kinematics: Fluid flow, Law of conservation of momentum. Mass flow rate, Discharge, Fluid mean velocity.	3
4	Fluid Dynamics: Law of conservation of energy. Bernoulli's equation and its applications.	3
5	Laboratories Experiments on Fluid Statics, Kinematics and Dynamics. Analyzing data and reports writing	22
	Total	**33**

D. Students Assessment Activities

No	Assessment Activities	Assessment Timing (In Week No)	Percentage of Total Assessment Score
1	Assignment 1	Week 4	5%
2	Assignment 2	Week 8	5%
3	Lab. Experiments	All Weeks	20%
4	Self Study Report & viva voce	Week 10	15%
5	Formative Assessment	Week 7	15%
6	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	• Hydraulics, Fluid Mechanics and Hydraulic Machines by R.S. Khurmi. S Chand Publishers, NewDelhi.
	2	• Fluid Mechanics and Hydraulic Machines by R.K. Bansal Laxmi Publications, NewDelhi Press, Taylor & Francis Group, London.
Supportive References	1	• Ahmed, N., Fluid Mechanics, Engineering Press (1987).
	2	• Graebel, W. P., Engineering Fluid Mechanics, Taylor & Francis (2001).
Electronic Materials	1	
Other Learning Materials	1	

2 Required Facilities and Equipment

Items	Resources
Facilities (Classrooms, Laboratories, Exhibition rooms, Simulation Room, etc.)	Suitable Classroom Whiteboard Suitable number of chairs
Technology Equipment (Projector, Smart Board, Software)	Smart Board Suitable Software
Other Equipment (Depending on the nature of the specialty)	

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Method
Effectiveness of Teaching	Course Instructor (Faculty)	Direct
	Head of Department	Indirect
Quality of Learning Resources	Student	Indirect
	Head of Department	Indirect
The extent to which CLOs have been achieved	Course Instructor (Faculty)	Indirect
	Quality Auditor	Indirect
Other		

G. Specification Approval Data

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