



**Jordan University of Science and Technology**  
**Faculty of Engineering**  
**Chemical Engineering Department**

CHE347 Fluid Mechanics Lab - JNQF Level: 7

First Semester 2023-2024

**Course Catalog**

1 Credit Hours. Density, viscosity and surface tension measurements, pressure and flow measurements, friction and Reynolds tests, impact of a water jet, center of pressure, pumps? testing.

**Text Book**

<b>Title</b>	LAB MANUAL
<b>Author(s)</b>	Dr. Majdi Al-Mahasneh
<b>Edition</b>	1st Edition
<b>Short Name</b>	Reference # 1
<b>Other Information</b>	

**Instructor**

<b>Name</b>	<b>Prof. Majdi Al-Mahasneh</b>
<b>Office Location</b>	CH2 L2 / Faculty Offices
<b>Office Hours</b>	Sun : 09:00 - 09:30 Sun : 10:30 - 11:30 Mon : 11:00 - 13:00 Tue : 09:00 - 09:30 Tue : 10:30 - 11:30 Thu : 09:00 - 09:30 Thu : 10:30 - 11:30
<b>Email</b>	mmajdi@just.edu.jo

**Class Schedule & Room**

**Section 1:**

Lecture Time: Sun : 14:30 - 17:30

Room: LAB

**Section 2:**

Lecture Time: Tue : 14:30 - 17:30

Room: LAB

**Prerequisites**

Line Number	Course Name	Prerequisite Type
222440	CHE244 Fluid Mechanics For Chemical Engineers	Prerequisite / Study
252000	ME200 Engineering Drawing (A)	Prerequisite / Study
251000	ME100 Engineering Workshops	Prerequisite / Study
223030	CHE303 Communication Skills For Engineers	Pre./Con.

**Tentative List of Topics Covered**

Weeks	Topic	References
Week 2	Measurement of density and viscosity	From <b>Reference # 1</b>
Week 3	Capillary rise and pressure calibration	From <b>Reference # 1</b>
Week 4	Impact of a water jet	From <b>Reference # 1</b>
Week 5	Reynolds testing apparatus	From <b>Reference # 1</b>
Week 7	Center of pressure on a plane surface	From <b>Reference # 1</b>
Week 8	Fluid friction in pipes and fittings	From <b>Reference # 1</b>
Week 9	Pumps testing	From <b>Reference # 1</b>
Week 10	Cavitation testing	From <b>Reference # 1</b>

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Apply the principles of density, viscosity, capillary, pressure measurements methods and Osborne Reynolds concerning fluid flow conditions. [1SO6] [1L7S3]	12%	REPORTS and quizzes, MID TERM EXAM, FINAL EXAM
Apply the principles of momentum balance on a water jet using data obtained experimentally. [1SO1, 1SO6] [1L7S3]	4%	REPORTS and quizzes, MID TERM EXAM, FINAL EXAM

To measure the effect of friction on the flow of fluids through several setups. [1SO6] [1L7K1]	4%	REPORTS and quizzes, FINAL EXAM
Test the performance of different pumps and cavitation phenomena. [1SO6] [1L7S3]	10%	REPORTS and quizzes, FINAL EXAM
Write professional experimental reports. [1SO3] [1L7C1]	10%	REPORTS and quizzes
To work with and be part of a team. [1SO5] [1L7C3]	10%	REPORTS and quizzes
Implement techniques, skills and tools to study fluid-related properties and systems. [1SO4] [1L7S2]	35%	REPORTS and quizzes
Follow safety rules and commit to professional disciplines. [1SO4] [1L7C3]	15%	REPORTS and quizzes

Relationship to Program Student Outcomes (Out of 100%)						
SO1	SO2	SO3	SO4	SO5	SO6	SO7
2		10	50	10	28	

Relationship to NQF Outcomes (Out of 100%)				
L7K1	L7S2	L7S3	L7C1	L7C3
4	35	26	10	25

Evaluation	
Assessment Tool	Weight
REPORTS and quizzes	30%
MID TERM EXAM	30%
FINAL EXAM	40%

Policy	
Grouping	The lab will be divided into two group batches of experiments. The 1st batch of experiments contains 4 experiments and the 2nd batch contains 4 experiments too:  1- The class will be divided into 4 rotating groups. Each group will handle one report per each experiment.  2- Each group will handle one comprehensive report of one experiment during the semester and arrange for its presentation.
REPORT SUUBMISSION	Lab reports are due on the next lab session. Late Reports will not be tolerated. Otherwise, 5 grades per day will be deducted from the report grade.
SAFETY	All Safety and Cleanliness practices and measures should be emphasized
ATTENDANCE	Attendance is a Must unless permitted.

Date Printed: 2023-12-13