



ChE 347: Fluid Mechanics Lab

1 credit hour, 3 contact hour Lab, 1 credit hour Eng.

Instructor

Instructor: Eng. Salaheddin Abu Yahya

E-mail: seabuyahya@just.edu.jo

Textbooks & References

A. Textbook

	<b>Textbook 1</b>
<b>Title</b>	Lab Manual
<b>Author(s)</b>	Dr. Majdi Mahasneh & Eng. Salaheddin Abu Yahya
<b>Publisher</b>	
<b>Year</b>	Last modified 2020
<b>Edition</b>	

B. References

Specific Course Information

A. Course Catalog:

The following experiments are expected to be performed: Measurement of density and viscosity. Capillary rise and pressure calibration. Impact of a water jet. Reynolds apparatus test. Center of pressure on a plane surface. Fluid friction in pipes and fittings. Pumps testing. Cavitation testing

B. Prerequisites or co-requisites

Pre: ChE 244

C. Required/Elective or Selected Elective

Required

Objectives and Outcomes\*

[1] an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

[2] an ability to communicate effectively with a range of audiences

[3] an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgements, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts

\* Number in brackets refer to the Program outcomes

[4] an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives

[5] an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgement to draw conclusions

---

### Contribution of Course to Meeting the Professional Component

---

#### Relationship to Student Outcomes (%)

1	2	3	4	5	6	7
10		40		10	40	

#### Relationship to Chemical Engineering Program Objectives

PEO1	PEO2	PEO3	PEO4	PEO5	PEO6
X	-	-	X	X	-

---

### Topics Covered

---

- 1-Measurement of density and viscosity
- 2- Capillary rise and pressure calibration
- 3- Impact of a water jet
- 4- Reynolds testing apparatus
- 5- Center of pressure on a plane surface
- 6- Fluid friction in pipes and fittings
- 7- Pumps testing
- 8- Cavitation testing

---

### Evaluation

---

#### *Assessment methods*

Assessment Tool	Expected Due Date	Weight
Written Reports	Group written long report to be submitted one week after experiment conduction	30%
Quizzes	Each Lab a written quiz will be conducted	10%
One Report Presentation	According to the department schedule	15 %
Presence & Team participation	Evaluated by the Lab Instructor	5%
Final Exam	According to the University final examination schedule	40 %