



**MUTAH UNIVERSITY**  
**Faculty of Engineering**  
**Department of Chemical Engineering**



**Fluid Mechanics**

**Course syllabus**

Course Code	Course Name	Credits	Contact Hours
0404244	Fluid Mechanics	3	Office hours

**INSTRUCTOR/COORDINATOR**

<b>Name</b>	Rasha A. Hajarat
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<b>Website</b>	

**TEXTBOOK**

- 1- Fluid mechanics for chemical engineers, by Noel de Nevers
- 2- Fundamentals of fluid mechanics, by Munson, Young, Okiishi, and Huebsc.

**Other Supplemental Materials**

- 1- Perry's chemical engineering handbook, by R. Perry, and D. Green.
- 2- Fluid mechanics, by Frank M. White.
- 3- Fluid Mechanics, by Kundu, Cohen, and Dowling.

**SPECIFIC COURSE INFORMATION**

**A. Brief Description of the Content of the Course (Catalog Description)**

This course will cover the fundamentals concept of fluid statics and motions such as laminar and turbulent flows, fluid properties and definitions, streamlines and conservations fields, energy balance as in Bernoulli's equations, mass balance as in continuity equation, momentum analysis, and measuring devices such pressure gauges.

**B. Pre-requisites (P) or Co-requisites (C)**

- (P) Ordinary Differential Equations 0301204  
(P) Principles of Chemical Engineering (1) 0404225

**C. Course Type (Required or Elective)**

Required

## SPECIFIC GOALS

### A. Specific Outcomes of Instruction

1. Understand and apply laws of conservation of mass and momentum and energy. (SOL 1, 2)
2. Understand the relationship between streamlines and velocity and pressure interrelations. (SOL 1, 2)
3. Understand methods of flow measurement. (SOL 1, 2)
4. Understand concepts of Reynolds number. (SOL 1, 2)
5. Understand the concept of continuity equation. (SOL 1, 2)
6. Use polymath program in solving different problems. (SOL 1, 2)

### B. Student Outcomes Addressed by the Course

1	2	3	4	5	6	7				
x	x									

## BRIEF LIST OF TOPICS TO BE COVERED

List of Topics	No. of Weeks	Contact Hours
Introduction to fluid mechanics	1	3 hrs per week
Characteristics of a fluid	2	3 hrs per week
Fluid statics	3	3 hrs per week
Fundamentals of flow	4	3 hrs per week
Dimensional analysis	3	3 hrs per week
Flow of viscous fluid	3	3 hrs per week
Total	16	

## METHODS OF ASSESSMENT

No.	Method of assessment	Week and Date	%
1	First exam	5 <sup>th</sup> week	20
2	Second exam	10 <sup>th</sup> week	20
3	Project / assignments		10
4	Final exam	End of Semester	50
		Total	100