

Course Description Form

1. Course Name: Fluid Mechanics	
2. Course Code: CIV036	
3. Semester / Year: First semester/2025	
4. Description Preparation Date: 3/09/2025	
5. Available Attendance Forms: Bologna system attendance form	
6. Number of Credit Hours (Total) / Number of Units (Total): SSWL 122 + USSWL 53; ECTS 7	
7. Course administrator's name (mention all, if more than one name)	
Name: Zainab Naeem GHazi	
Email: zainab.naeem@uowa.edu.iq	
8. Course Objectives	
Course Objectives	<ol style="list-style-type: none">1. Definitions of fluids: identify the key fluid properties used in the analysis of fluid mechanics, determine the dimensions and units of physical quantities such as viscosity and density.2. Hydrostatics: calculate hydrostatic pressure distributions and pressure force on a submerged surface, calculate the buoyancy and determine the stability of floating bodies, calculate pressure variation in fluids undergoing rigid-body motion3. Bernoulli equation: key assumptions, derivation, and application of static, stagnation, dynamic, and total pressures.5. Defining the continuity equation (the continuity equation) and its applications.6. Study the concept and mechanism of applying dimensional analysis.7. Calculating major and secondary losses.8. Hydraulic design of open channels.9. Internal flows: fully developed laminar and turbulent flows in a pipe, friction factor, Moody Chart, and head losses.

9. Teaching and Learning Strategies

Strategy	This course offers different teaching and learning strategies. The teaching methodologies are represented by: 1- Lectures where the information is presented throughout power point slides.
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2- Oral discussions throughout the classes. Students are encouraged to be involved in these discussions. 3- Handouts are given to students on monthly-base. 4- Shore review at the beginning of the classes and short summary at the end of the classes.
The learning methodologies include:
1- Encouraging students to solve questions in the textbooks.
2- Writing technical reports about different topics.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
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1	6	1	Fluid Properties.	Lectures	NA
2	6	1	Pressure variation in static	Lectures	Quizzes
3	6	1	flu Forces on plane surfaces.	Lectures	and
4	6	1	Forces on curved surfaces.	Lectures	HWs
5	6	1	Continuity equation.	Lectures	Quizzes
6	6	1	Energy equation (Ideal fluid).	Lectures	and
7	6	1	Mid-term Exam + Application Energy equation.	Lectures	HWs
8	6	1	Application of Energy equatio Momentum equation	Lectures	HW
9	6	1	Dimensional analysis		Quizzes
10	6	1	Fluid flow in pipes: Fricti	Lectures	and
11	6	1	losses		HW
12	6	1	Fluid flow in pipes: Min losses.	Lectures	Quizzes
13	6	1	Flow in open channels.	Lectures	and
14	6	1	Flow in open channels.	Lectures	HW
15	6	1	Preparatory week before t	Lectures	
16	6	1	final Exam	Lectures	

11. Course Evaluation

Mid-term exam	10%
HWs	10%
Quizzes	10%
Technical reports	10%
Attendance sheet	10%
Final Exam	50%

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	1-Fluid Mechanics, Frank White, Fourth Edition, McGraw Hill, 1998 2-Fundamental of fluid mechanics, Munson, Young, Okiishi, Huebsch, Sixth edition, Wiley, 2009
Main references (sources)	Vennard J.k. and Street R.L.,(1982)"Elementary Fluid Mechanics", John Wiley & Sons, New York (Six Edition)
Recommended books and references (scientific journals, reports...)	1-Fluid Mechanics, Frank White, Fourth, Edition, McGraw Hill, 1998 2-Fundamental of fluid mechanics, Munson, Young, Okiishi, Huebsch, Sixth edition, Wiley, 2009
Electronic References, Websites	