COURSE DESCRIPTION FORM	
Course Code and Title	CE371 FLUID MECHANICS
Semester	5
Catalog description	Dimensions and Units;Properties of Fluids;Pressure at a Point; Pressure Variation in a Fluid at Rest; Measurement of Pressure; Hydrostatic Pressure and Forces on Plane and Curved Surface; Buoyancy;Pressure Variation in a Fluid with Rigid-Body Motion; Fluid Kinematics; Eulerian and Lagrangian Flow Descriptions; Velocity, Acceleration, Streamlines, Streaklines and Pathlines; The Reynolds Transport Theorem; System and Control Volume Representations; Continuity Equation, Momentum Equation, Energy and Bernoulli Equations
Required reading	Munson, B. R., Young, D. F., andOkiishi, T. H., 'Fundamentals of Fluid Mechanics', John Wiley&Sons, Inc.
Recommendedreading	1-Streeter V.L. andWylie B., 'Fluid Mechanics', McGrawHill. 2-Nuri Yücel ve diğerleri "Akışkanlar Mekaniğine Giriş" yardımcı ders kitabı no: 1 tercümesi, Nobel yayınevi. 3-Shames I., 'Mechanics of Fluids', McGrawHill. 4- Kırkgöz, Salih, "Akışkanlar Mekaniği" 5- Sümer M., Ünsal İ., Bayazıt M., 'Hidrolik', Birsen Yayınevi. 6-Ronalds V.G., 'Akışkanlar Mekaniği ve Hidrolik', Sanem Çözümlü Serisi. 7- Ilgaz C., Karahan E., Bulu A., 'Akışkanlar Mekaniği ve Hidrolik Problemleri' Çağlayan Yayınevi. 8- Çengel Y.A, Cımbala J.M, "Akışkanlar Mekaniği- Temelleri ve Uygulamaları" Palme Yayınevi 9-Şekerdağ, N. "Akışkanlar Mekaniği ve Hidrolik Problemleri" Nobel Yayın Dağıtım
ECTS	5
Prerequisites and co-requisites	Prerequisite of this course is: **CE223 MECHANICS I (STATICS)** Required attendance to lectures is at least 70% of total term hours.
Compulsory/Elective	Compulsory
Language of instruction	English
Aim of course	To introduce the fluid behaviour, to teach the basic concepts and principles of Fluid Mechanics for static and moving fluids.
Learning outcomes of the course unit	
Mode of delivery	The mode of delivery of this course is face to face.
Course content	1. Dimensions and Units 2. Properties of Fluids 3. Pressure at a Point, Pressure Variation in a Fluid at Rest, Measurement of Pressure 4. Hydrostatic Pressure and Forces on Plane and Curved Surface 5. Buoyancy 6. Pressure Variation in a Fluid with Rigid-Body Motion 7. Pressure Variation in a Fluid with Rigid-Body Motion and 1. Midterm 8. Fluid Kinematics; Eulerian and Lagrangian Flow Descriptions 9. Velocity, Acceleration, Streamlines, Streaklines and Pathlines 10. The Reynolds Transport Theorem, System and Control Volume Representations

	11. Continuity Equation 12. Momentum Equation 13. 2. Midterm 14. Energy and Bernoulli Equations 15. Energy Lines
Planned learning activities and teaching methods	3 theoretical lecture hours per week (3+0) Web search and library use Works for assignments Midterm exams and related works Final exam and related works

Assessment methods and criteria

	Quantity	Percentage (%)
Mid-terms	2	50
Assignment	5	5
Exercises	-	-
Projects	-	-
Practice	-	-
Quiz	4	5
Contribution of In-term Studies to Overall Grade %	-	60
Contribution of Final Examination to Overall Grade (%)	-	40
Attendance	-	-

Workload

Efficiency	**Total Week Count**	**Weekly Duration (in hour)**	**Total Workload in Semester**
Theoretical Study Hours of Course Per Week	14	3	42
Practicing Hours of Course Per Week	14	0	0
Reading	14	0	0
Searching in Internet and Library	14	1	14
Designing and Applying Materials	14	0	0
Preparing Reports	14	1	14
Preparing Presentation	14	0	0
Presentation	14	0	0
Mid-Term and Studying for Mid-Term	2	20	40
Final and Studying for Final	1	15	15
Other	0	0	0
Total Workload:			125
Total Workload / 25:			5
ECTS:			5

Course's contribution to program

No	Program Learning Outcomes	1	2	3	4	5
1	Adequate knowledge in mathematics, science and engineering subjects pertaining to the relevant discipline; ability to use theoretical and applied knowledge in these areas in complex engineering problems.					X
2	Ability to identify, formulate, and solve complex civil engineering problems; ability to select and apply proper analysis and modeling methods for this purpose.				X	
3	Ability to design a complex system, process, device or product under realistic constraints			X		

		and conditions, in such a way as to meet the desired result; ability to apply modern design methods for this purpose.					
	4	Ability to devise, select, and use modern techniques and tools needed for analyzing and solving complex problems encountered in civil engineering practice; ability to employ information technologies and to use at least one computer programming language effectively.				X	
	5	Ability to design and conduct experiments, gather data, analyze and interpret results for investigating complex civil engineering problems or discipline specific research questions.			X		
	6	Ability to work efficiently in intra-disciplinary and multi-disciplinary teams.				X	
	7	Ability to work individually.					X
	8	Ability to communicate effectively in Turkish, both orally and in writing; ability to write effective reports and comprehend written reports.		X			
	9	Knowledge of English of B1 level according to Common European Framework of Reference.					X
	10	Prepare design and production reports, make effective presentations, and give and receive clear and intelligible instructions.	X				
	11	Recognition of the need for lifelong learning; ability to access information, to follow developments in science and technology, and to continue to educate him/herself.					X
	12	Consciousness to behave according to ethical principles and professional and ethical responsibility.					X
	13	Knowledge on standards used in civil engineering practice.					X
	14	Knowledge about business life practices such as project management, risk management, and change management.			X		
	15	Awareness in entrepreneurship, innovation; knowledge about sustainable development.					X
	16	Knowledge about the global and social effects of engineering practices on health, environment, and safety, and contemporary issues of the century reflected into the field of engineering.					X
	17	Awareness of the legal consequences of engineering solutions.	X				

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