IM 371 FLUID MECHANICS		CIVIL ENGINEERING	
Semester	**Credit Structure**		
	Lecture	**Recitation**	**Laboratory**
5	3	0	0
Language	English		
Compulsory / Elective	Compulsory		
Prerequisites	IM 224 Mechanics II (Dynamics)		
Catalog Description	Characteristics of fluids, dimensions and units, physical properties of fluids, hydrostatic pressure at a point, pressure variation in a fluid at rest, pressure distribution in a fluid with rigid body motion, measurement of pressure, hydrostatic force on surfaces, buoyancy, kinematics, Lagrangian and Eulerian flow descriptions, velocity and acceleration, stream lines and path lines, energy and Bernoulli equations, continuity, brief classification of fluid flow, laws of nature, system and control volume approaches, Reynolds transport theorem, differential equations of motion.		
Course Objectives	To give the basic principles of motion of fluids		
Course Outcomes	Gaining the skill of handling and solving the fluid problems		
Textbook and /or References	Munson, B.R., Young, D.F., and Okiishi, T.H., 'Fundamentals of Fluid Mechanics', John Wiley&Sons Inc., New York, 1990. 2- Fox, R.W.; and McDonald, A.T., 'Introduction to Fluid Mechanics', John Wiley&Sons Inc., New York, 1978. 3- Ilgaz, C., Karahan, E., ve Bulu, A., Akışkanlar Mekaniği ve Hidrolik Problemleri', Çağlayan Yayınevi, İstanbul, 1993.		
Assessment Criteria		**Quantity**	**Percentage**
	Midterm Exams	2	40
	Quizzes		
	Homeworks	10	10
	Projects		
	Term Paper		
	Laboratory Work		
	Other		
	Final Exam	1	50
Course Category by Content (%)	**Mathematics and Basic Sciences**		50
	Engineering Science		40
	Engineering Design		10
	Social Sciences		
Instructors	**Prof.Dr. Nevzat Yıldırım, Prof. Osman Nuri Özdemir, Yrd. Doç. Dr. Önder Koçyiğit**		

COURSE PLAN	
Week	**Topics**
1	Dimensions and units, physical properties of fluids
2	Hydrostatic pressure at a point
3	Hydrostatic pressure distribution in a fluid at rest
4	Pressure distribution in a fluid with rigid body motion
5	Measurement of pressure
6	Hydrostatic force on surfaces
7	Buoyancy and buoyancy force
8	Mid-Term Exam I
9	Kinematics, Lagrangian and Eulerian flow descriptions
10	Velocity, acceleration, streamlines and path lines
11	Energy and Bernoulli equations
12	System and control volume, Reynolds transport law
13	Mid-Term Exam II
14	Differential equations of motion

RELATIONSHIP BETWEEN THE COURSE AND DEPARTMENT CURRICULUM				
	Program Outcomes	**1**	**2**	**3**
1	An ability to apply knowledge of mathematics, science, and engineering			X
2	An ability to design and conduct experiments, as well as to analyze and interpret data		X	
3	An ability to design a system, component, or process to meet desired needs		X	
4	An ability to function on multi-disciplinary teams		X	
5	An ability to identify, formulate, and solve engineering problems			X
6	An understanding of professional and ethical responsibility			X
7	An ability for effective written and oral communication in Turkish and English		X	
8	The broad education necessary to understand the impact of engineering solutions in a global and societal context		X	
9	A recognition of the need for, and ability to engage in life-long learning		X	
10	A knowledge of contemporary issues			X
11	An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice			X
Contribution of the course : 1:None 2:Partially 3:Completely				