



HASAN KALYONCU UNIVERSITY
Faculty of Engineering
Course Description Form

COURSE: Fluid Mechanics					
CODE: CE272		SEMESTER: SPRING			
LANGUAGE: ENGLISH		TYPE: COMPULSORY			
PRE-REQUISITES: - CO-REQUISITES: -		THEORY	PRACTICAL	CREDIT	ECTS
WEEKLY HOURS: 3		3	0	3	4

CONTENT OF THE COURSE:

This course gives the fundamental principles of fluid mechanics and their application to engineering problems and includes the study of behavior of viscous and non-viscous fluids at rest and in motion through development and application of the principles of fluid statics, continuity, energy, momentum, similitude, and dimensional analysis. The topics covered in this course throughout the semester include fluid statics; kinematics of fluid flow: continuity equation, stream function, ir-rotational flow velocity potential; fluid dynamics: flow of viscous fluids; newtonian fluids, simple laminar flow systems, turbulence, flow in pipes as well as selected subjects from compressible flow, open channel flow, boundary layer theory.

OBJECTIVE OF THE COURSE:

To enable students to know the fundamentals of Engineering fluid mechanics and hydraulics. As well as to know how to deal with its problems in civil engineering.

WEEKLY SCHEDULE

Week	Topics
1	Introduction about fluid mechanics
2	Fluid properties
3	Pressure types and how to measure it.
4	Hydrostatic forces, buoyancy and stability
5	Fluid kinematics
6	Continuity equation and Bernoulli's equation
7	Pitot tubes, Venturi meter pipes and orifices
8	Midterm Exam
9	Momentum equation and its application
10	Force exerted by a jet striking a flat plate
11	Analysis of flow in pipelines
12	Introduction to Energy loss in pipe flows
13	Design of pipeline diameter and flow rate
14	Steady flow and piping networks system

TEXTBOOK: Applied Fluid Mechanics, 7th edition, 2014 by Robert Mott and Joseph Untener

REFERENCE BOOKS

Fluid Mechanics, 2008 by Merle Potter and David Wiggert.

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
LO1	3	2	0	2	0	0	0	0	0	0	0
LO2	3	2	0	2	0	0	0	0	0	0	0
LO3	3	2	0	2	0	0	0	0	0	0	0
LO4	3	2	0	2	0	0	0	0	0	0	0
PO: Program Outcomes LO: Learning Outcomes Values: 0: None 1: Low 2: Medium 3: High											

INSTRUCTOR(S):	Asst.Prof.Dr. H.Çağan Kılınç
FORM PREPARATION DATE:	22.05.2019

LEARNING OUTCOMES OF THE COURSE:

LO1: Define basic terms, values and laws in the area of fluids properties, statics, kinematics and dynamics of fluids.
LO2: Describe methods of implementing fluid mechanics laws and phenomena while analysing the operational parameters of hydraulic problems, systems and machines.
LO3: Calculate and optimise operational parameters of hydraulic problems, systems and machines.
LO4: Select engineering approach to problem solving based on the acquired physics and mathematical knowledge.

CONTRIBUTION TO PROVIDING VOCATIONAL EDUCATION OF THE COURSE: Students learn the basic principles used in the design of water-related structures of civil engineering.