Vocational School / Construction Technology

2024 - 2025 Academic Year

FLUID MECHANICS

Syllabus

Course Description					
Name	**Code**	**Semester**	**T+A Hour**	**Credit**	**ECTS**
FLUID MECHANICS	İNŞ2114981	Fall Semester	3+0	3	4

Prerequisites Courses	
Recommended Elective Courses	
Language of Instruction	Turkish
Course Level	Short Cycle (Associate's Degree)
Course Type	Elective
Course Coordinator	Lect. Özge KARABAY
Name of Lecturer(s)	Lect. Özge KARABAY
Assistant(s)	
Aim	The aim is to teach the basic concepts, calculation methods, and basic equations of Fluid Mechanics, to provide students with the key to solving engineering problems.
Course Content	This course contains; International System of Units,Dimensions of Fundamental Physical Quantities and Homogeneity of Dimensions,Basic Concepts of Fluid Mechanics,Properties of Fluids and Types of Flow,Fluid Flows, Inviscid Fluid and Viscosity,Hydrostatic Pressure,Hydrostatic Pressure Acting on Plane and Curved Surfaces,Midterm Exam,Equilibrium of Floating Objects,Pipe Hydraulics,Laminar and Turbulent Flows, Head losses in pipes,Calculation of Head Losses in Pipes,Free Surface Flows,Optimum Section,Final Exam.

Course Learning Outcomes	**Teaching Methods**	**Assessment Methods**
Identifies basic concepts of Fluid Mechanics.	12, 14, 3, 9	A, E, G
Solves engineering problems by using basic concepts of Fluid Mechanics.	12, 14, 3, 9	A, E, G
Solves stationary fluid problems.	12, 14, 3, 9	A, E, G
Calculates friction head losses in pipe flows.	12, 14, 3, 9	A, E, G
Calculates hydrostatic pressure of the fluids.	12, 14, 3, 9	A, E, G
Applies the fundamental calculation principles on open channel flows.	12, 14, 3, 9	A, E, G
Checks the dimension homogeneity of quantities in an engineering equation.	12, 14, 3, 9	A, E, G

Teaching Methods	12: Problem Solving Method, 14: Self Study Method, 3: Problem Baded Learning Model, 9: Lecture Method
Assessment Methods	A: Traditional Written Exam, E: Homework, G: Quiz

Lecture Schedule

Sequence	**Topics**	**Preliminary Preparation**
1	International System of Units	
2	Dimensions of Fundamental Physical Quantities and Homogeneity of Dimensions	
3	Basic Concepts of Fluid Mechanics	
4	Properties of Fluids and Types of Flow	
5	Fluid Flows, Inviscid Fluid and Viscosity	
6	Hydrostatic Pressure	
7	Hydrostatic Pressure Acting on Plane and Curved Surfaces	
8	Midterm Exam	
9	Equilibrium of Floating Objects	
10	Pipe Hydraulics	
11	Laminar and Turbulent Flows, Head losses in pipes	
12	Calculation of Head Losses in Pipes	
13	Free Surface Flows	
14	Optimum Section	
15	Final Exam	

Evaluation Methods	**Weight(%)**
Midterm Exam	40
General Exam	60

Resources
Lecture notes, Presentations