

COURSE DESCRIPTION FORM

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Course Code and Title	CE376 HYDROMECHANICS		
Semester	6		
Catalog description	PipeFlow, MinorLosses, Parallelandserialpipeflows, MultipleReservoirs, PumpandSystemCurves, Open Channel Flow, SpecificEnergy, Critical Flow, UniformFlow, Channel Transitions, RapidlyVariedFlow, GraduallyVariedFlow, Dimensional Analysis andSimilitude		
Required reading	Munson, B. R., Young, D. F., and Okiishi, T. H., 'Fundamentals of Fluid Mechanics', John Wiley & Sons, Inc.		
Recommendedreading	<ul style="list-style-type: none"> • Douglas J.F., Janusz M.G. and Swaffield J.A., 'Fluid Mechanics', Prentice Hall. • Fox, R.W., McDonald, A.T., and Pritchard, P.J., "Introduction To Fluid Mechanics, John Wiley & Sons, Inc. 		
ECTS	5		
Prerequisites and co-requisites	Prerequisite of this course is: CE371FLUID MECHANICS Required attendance to lectures is at least 70% of total term hours.		
Compulsory/Elective	Compulsory		
Language of instruction	English		
Aim of course	Teachingthe main principles of pipeandopenchannelflows		
Learning outcomes of the course unit	<ol style="list-style-type: none"> 1) Gaining the ability to solve of civil engineering problems related with pipe systems 2) Gaining the ability to solve of civil engineering problems related with open channel flows 3) Gaining the ability to design experiment set up and analyze the test results 		
Mode of delivery	The mode of delivery of this course is face to face.		
Course content	<ol style="list-style-type: none"> 1. Pipe Flow and its experiment 2. Minor Losses and their experiments 3. Parallel and Serial Pipes 4. Multiple Reservoirs 5. Pump and System Curves 6. Pump and System Curves and Midterm I 7. Open Channel Flow 8. Specific Energy 9. Critical Flow 10. Uniform Flow 11. Channel Transitions 12. Rapidly Varied Flow and its experiment 13. Midterm II 14. GraduallyVariedFlow 15. Dimensional Analysis andSimilitude 		
Planned learning activities and teaching methods	3 theoretical lecture hours and 1 laboratory hour per week (3+1) Web search and library use Report preparation and quizzes Midterm exam and required works Final exam and required works		
Assessment methods and criteria		Quantity	Percentage (%)
	Mid-terms	2	50
	Assignment	-	-
	Exercises	-	-
	Projects	-	-

	Practice	5	5				
	Quiz	5	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	1	14			
	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	10	20			
	Final and Studying for Final	1	20	20			
	Other	0	0	0			
	Total Workload:			124			
	Total Workload / 25:			4,96			
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 and conditions, in such a way as to meet the desired result; ability to apply modern design methods for this purpose.			X		
	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					X

		<u>Reference.</u>						
	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					
Name of lecturer and contact information	Prof.Dr. Osman Nuri Özdemir ozdemir@gazi.edu.tr Prof.Dr. Lale Balaslalebal@gazi.edu.tr Assoc. Prof. Dr. Asu İnan asuinan@gazi.edu.tr							