

Code: INS2222		Course Name: Fluid Mechanics											
Year	Semester	Group(s)	Language	Theory	App	Lab.	Credit	ECTS					
2019-2020	Spring	1, 3, 4	English	2	1	1	3	5					
Course Type		Basic Sciences <input type="checkbox"/>	Engineering <input checked="" type="checkbox"/>	Technical Elective <input type="checkbox"/>			Non-Technical Elective <input type="checkbox"/>						
Prerequisite		-											
Coordinator		Yalçın Yüksel											
Instructor(s)		Esin Çevik, H.A. Güner, Cihan Şahin											
Course Goals		The purpose of fluid mechanics is to give basic principal and fluid properties and behavior of fluid											
Course Topics		Fluid Properties / Fluid Statics /Fluid Kinematics / Fluid Dynamics; Behavior of Ideal and Real Fluids, Drag and Lift / Introduction to Potential Flow Theory / Dimensional Analysis											
Knowledge and Skills		Basic knowledge of principal equations on fluid structure interaction, and how to reach and use knowledge											
References		1) Fundamentals of Fluid Mechanics (Third Ed. John Wiley&Sons, 1998), Munson, Young, Okiishi 2) Fluid Mechanics, Frank White (Mc Graw Hil 3) Fluid Mechanics Lecture Notes, Y. Yüksel and E. Çevik 4) Akışkanlar Mekaniği ve Hidrolik (Beta Yayınevi, fifth edition, 2014), Y. Yüksel											
Assignments and Projects													
Laboratory Experiment topics		Lab: Venturimeter											
Computer codes													
Other Activities		1) Video and slide shows 2) Private sector seminars											
Contribution Of The Course Towards Providing Professional Education		Basic knowledge of principal equations on fluid structure interaction, and how to reach and use knowledge											
Course Learning Outcomes		1. To gain knowledge the properties and behavior of fluids 2. To gain knowledge on basic principles of fluids 3. To gain knowledge on main behaviors and equations of fluids 4. To gain knowledge of solving fluid mechanics problems and understanding their applications in fluid mechanics. 5. To gain solving complex problems.											
Course Learning Outcomes/ Program Outcomes Matrix			i	ii	iii	iv	v	vi	vii	viii	ix	x	xi
		1	1	0	0	0	0	0	0	0	0	0	0
		2	1	1	0	0	0	0	0	0	0	0	0
		3	1	1	0	0	1	0	0	0	0	0	0
		4	0	0	0	0	1	0	0	0	0	0	0
		5											

Success Evaluation					
Theoretical Courses			Projects		
	Number	Weight (%)		Number	Weight (%)
Midterms	2	55	Midterm(s)		
Quizzes	-	-	Controls		
Assignments	-	-	Mid-submission(s)		
Laboratory	1	5	Oral Exam		
Other	-	-	Other		
Final Exam	1	40	Final Exam		
Make-up Exam	1	40	Make-up Exam		
Subjects					
Week 1	Fluid Properties / Introduction, Definition of continuity, density, specific weight, specific gravity				
Week 2	Viscosity, surface tension, vapor pressure Fluid Statics / Pressure, basic principles				
Week 3	Plane surfaces				
Week 4	Curved surfaces, Euler equations				
Week 5	Relative equilibrium, stability of floating body				
Week 6	Fluid Kinematics / Analyzing of fluid mechanics, fundamental concepts				
Week 7	Motion of a fluid element, fluid acceleration				
Week 8	I. MIDTERM				
Week 9	Fluid Dynamics / Inviscid fluid dynamics, continuity equation				
Week 10	Equation of motion, energy equation LABORATORY				
Week 11	Impuls-Momentum equation and angular momentum				
Week 12	Flow of viscous fluid, Navier-Stokes equations, Boundary layer II. MIDTERM				
Week 13	Hydrodynamics of submerged bodies, Introduction to Irrotational Flow				
Week 14	Dimensional Analysis				

FORM 2: LECTURER COMMUNICATION INFORMATION

Course Code: INS2222			Course Name: FLUID MECHANICS				
Groups	Course hours and locations		Course Lecturer	Lecturer office	Student meeting hours	email	Web address
1	MONDAY 13 ⁰⁰ -14 ⁵⁰ WEDNESDAY 11 ⁰⁰ -12 ⁵⁰	F1-92 F1-92	Prof. Dr. Esin Çevik	H Blok Hidrolik ve Kıyı Liman Lab. Oda No: 8	WEDNESDAY 14 ⁰⁰ -16 ⁰⁰	cevik@yildiz.edu.tr	www.inm.yildiz.edu.tr
3	MONDAY 13 ⁰⁰ -14 ⁵⁰ WEDNESDAY 11 ⁰⁰ -12 ⁵⁰	F1-94 F1-94	Doç. Dr. H.A. Güner	H Blok Hidrolik ve Kıyı Liman Lab. Oda No: 4	WEDNESDAY 14 ⁰⁰ -16 ⁰⁰	aari@yildiz.edu.tr	www.inm.yildiz.edu.tr
4	MONDAY 13 ⁰⁰ -14 ⁵⁰ WEDNESDAY 11 ⁰⁰ -12 ⁵⁰	F1-95 F1-95	Dr. Cihan Şahin	H Blok Hidrolik ve Kıyı Liman Lab. Oda No: 3	WEDNESDAY 14 ⁰⁰ -16 ⁰⁰	aari@yildiz.edu.tr	www.inm.yildiz.edu.tr

Date: 28.01.2020