

INTRODUCTION TO TURBULENT FLOWS

1	Course Title:	INTRODUCTION TO TURBULENT FLOWS	
2	Course Code:	MAK4098	
3	Type of Course:	Optional	
4	Level of Course:	First Cycle	
5	Year of Study:	4	
6	Semester:	8	
7	ECTS Credits Allocated:	3.00	
8	Theoretical (hour/week):	2.00	
9	Practice (hour/week):	0.00	
10	Laboratory (hour/week):	0	
11	Prerequisites:	-	
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Yrd.Doç.Dr. ONUR YEMENİCİ	
15	Course Lecturers:	-	
16	Contact information of the Course Coordinator:	oseckin@uludag.edu.tr / 2242940910 / U.Ü. Müh. Fak. Mak. Müh. Bölümü BURSA	
17	Website:		
18	Objective of the Course:	To provide information about the nature of turbulent flow and to understand the literature on turbulent flows.	
19	Contribution of the Course to Professional Development:		
20	Learning Outcomes:		
		1	Learn the nature of turbulence.
		2	Analyse the continuity, Navier-Stokes and energy equations for turbulent flow.
		3	Knowledge on turbulent flow solutions and applications.
		4	Understand the effect of turbulence level on heat transfer.
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21	Course Content:		
		Course Content:	
Week	Theoretical	Practice	
1	Description of turbulent flow		
2	Turbulent flow continuity equations		
3	Turbulent flow momentum equations		
4	Turbulent flow energy equations		
5	Physical descriptions of conservation equations		
6	Solutions of full developed turbulent flows		

7	Solutions of full developed turbulent flows and Reynolds stresses	
8	Applications of turbulent flow	
9	I. Midterm exam	
10	Approximate solutions for turbulent flows.	
11	Approximate solutions for turbulent flows.	
12	Effect of the turbulence level on heat transfer.	
13	Applications of turbulent flow	
14	Turbulence measurement techniques	

23	Assesment
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Midterm Exam	1	35.00
Quiz	0	0.00
Home work-project	1	15.00
Final Exam	1	50.00
Total	3	100.00

Confirmation of Final Exam to Graduate Grade		0.00	
Theoretical	14	2.00	28.00
Total	100.00		
Practicals/Labs	0	0.00	0.00
Measurement and Evaluation Techniques Used in the Course	14	2.00	28.00
Self study and preparation			
Homeworks	1	26.00	26.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	4.00	4.00
Others	0	0.00	0.00
Final Exams	1	4.00	4.00
Total Work Load			90.00
Total work load/ 30 hr			3.00
ECTS Credit of the Course			3.00

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Contribution Level:	1 very low	2 low	3 Medium	4 High	5 Very High
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