	тн	ERMC	DYNAMICS							
1	Course Title:	THERM	DDYNAMICS							
2	Course Code:	MKNS21	5							
3	Type of Course:	Optional								
4	Level of Course:	Short Cy	rcle							
5	Year of Study:	2								
6	Semester:	3								
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:	None								
12	Language:	Turkish								
13	Mode of Delivery:	Face to f								
14	Course Coordinator:	Öğr.Gör.	ESRA ÖZDEMİR							
15	Course Lecturers:									
16	Contact information of the Course Coordinator:		emir@uludag.edu.tr / 0224 773 60 42/  Uludağ Üniversitesi r İbrahim Orhan MYO							
17	Website:									
18	Objective of the Course:	Gain qualifications related to the basic thermodynamic concepts, work, the laws of thermodynamics, cycles, engine cycles, power, efficiency expressions, theory of combustion and fuels.								
19	Contribution of the Course to Professional Development:									
20	Learning Outcomes:									
		1	Applies the basic equation, units and calculation methods used in the analysis of thermodynamics.							
		2	Explains the location and the basic concepts of thermodynamics as a science, described the systems and their basic properties.							
		3	Uses the reference tables in thermodynamic applications.							
		4	Solves the problem related to work and heat.							
		5	Analyses the laws of thermodynamics.							
		6	Explains changes in states and the principles of overall conversion							
		7	Analyses the ideal weather cycles (otto, diesel, hybrid loop).							
		8	Calculates efficiency, power and work in internal combustion engines.							
		9	Explains the classification and the physical and chemical properties of fuels.							
		10	Explains combustion engines and engine knocking.							
21	Course Content:									
		Co	ourse Content:							
Week	Theoretical		Practice							
1	Thermodynamic concepts and defini Zeroth law of thermodynamics.	tions,								
2	Heat and work concepts and applica	itions.								

3	Therr subst	ermodynamic properties of pure bstances, P-v-T surfaces.																		
4		e ideal gas equations and change of state.																		
5	First	st law of thermodynamics.																		
6	First	st law of thermodynamics.																		
7	Engir	gine cycles and make comparison.																		
8		internal combustion engines work, power d efficiency.																		
9	Repe	epeating courses and midterm exam																		
10		internal combustion engines work, power d efficiency.																		
11	of fue prope	els, physical and chemical characteristics fuels, Analysis of the physical and chemical operties of the combustion, combustion of e spark ignition engines																		
12	class and t	ombustion of compression ignition engines, assification of fuels, hydrocarbons, alcohols nd their derivatives, classification of ombustion, combustion equations.																		
13	relate	End of the combustion products, tables related to fuels and combustion, alternative fuels and combustion																		
14	Engir resist			ng, eva	aporat	tion of t	fuels,	knocł	<											
Activites							_1.	Numt	)er	• •	Dura	Duration (hour)			Vork nour)					
Theoretical								3	Aztürl	A. ve	Kiliç A.	Ç <u>ö</u> zün								
Practic	Practicals/Labs									ermodii 0	namik.	<u>1998.</u>	0.00	0.00			0.00			
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Field S										0				0.00						
Midtern	n exar work-r	ns. proie	ct				1		10	10.00				10.00			10.00			
Others										0				0.00			0.00			
Einal E	xams						3		1	100.00				)	15.00					
Total V																91.00				
Sotates																3.03				
ECTS	CTS Credit of the Course															3.00				
Total									10	00.00										
Measu Course		it an	d Eva	luatio	n Tecl	hnique	s Use	d in th	ne											
24	ECT	S/	WO	RKL	OAD	TAB	LE													
25		CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS																		
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ÖK2	0	)	0	0	3	0	0	4	0	0	0	0	0	0	0	0	0			

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ÖK10	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0
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ÖK8	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0
ÖK7	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0
ÖK6	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0
ÖK5	0	0	0	0	0	0	5	0	0	0	5	0	0	0	0	0
ÖK4	0	4	4	0	0	0	0	4	0	5	0	0	0	0	0	0
ÖK3	5	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0