STRUCTURAL DYNAMICS

1	Course Title:	STRUCTURAL DYNAMICS
2	Course Code:	INS5231
3	Type of Course:	Optional
4	Level of Course:	Second Cycle
5	Year of Study:	1
6	Semester:	1
7	ECTS Credits Allocated:	7.50
8	Theoretical (hour/week):	3.00
9	Practice (hour/week):	0.00
10	Laboratory (hour/week):	0
11	Prerequisites:	None
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Prof. Dr. Ramazan LİVAOĞLU
15	Course Lecturers:	
16	Contact information of the Course Coordinator:	rliva@uludag.edu.tr
17	Website:	
18	Objective of the Course:	The main objective of the course is to understand the responseof linear-elastic single and multi-degree of freedom system and to comprehend the solution methods.
19	Contribution of the Course to Professional Development:	1 To have knowledge about the idealization of the structural system. 2 To be able to interpret the dynamic response 3 Understanding the dynamic behavior of structures exposed to earthquakes 4 To understand and comprehend current earthquake code logic 5 Understanding the fundamentals of earthquake resistant building design
20	Learning Outcomes:	

		1	To have knowledge about the idealization of the structural system.
		2	To be able to interpret the dynamic response
		3	Understanding the dynamic behavior of structures exposed to earthquakes
		4	To understand and comprehend the current earthquake code logic
		5	Understanding the fundamentals of earthquake resistant building design.
		6	
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21	Course Content:	

Course Content:	
Week	Theoretical	Practice
1	Analysis of dynamic behavior of structures.	

2	Mathematical models of single degree of freedom systems.			
3	Free vibration of undamped single degree of freedom systems.			
4	Free vibration of damped single degree of freedom systems.			
5	Response of harmonic loaded undamped single degree of freedom systems.			
6	Response of harmonic loaded damped single degree of freedom systems.			
7	Response of periodically loaded single degree of freedom systems.			
8	Response of non periodic loaded single degree of freedom systems.			
9	Response of non periodic loaded single degree of freedom systems.			
10	Analysis of dynamic response of single degree of freedom systems using numerical methods.			
11	Mechanical models of multi-degree of freedom systems.			
12	Free vibration of multi-degree of freedom systems.			
13	Response of multi-degree of freedom damped forced systems			
14	Mode Superposition Techniques			

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	3.00	42.00
Practicals/Labs	0	0.00	0.00
Self study and preperation	14	4.00	56.00
Homeworks	5	25.00	125.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	0	0.00	0.00
Others	0	0.00	0.00
Final Exams	1	3.00	3.00
Total Work Load			226.00
Total work load/ 30 hr			7.53
ECTS Credit of the Course			7.50

23	Assessment		
		R	
	Midterm Exam		
Quiz		0	0.00
Home work-project		5	40.00
Final Exam		1	60.00
Total		6	100.00
Contribution of Term (Year) Learning Activities to Success Grade			40.00
Contribution of Final Exam to Success Grade			60.00
Total			100.00
Measurement and Evaluation Techniques Used in the Course			klasik

Text overlapping in middle of page:
5th Edition, 2015
J.W. TEDESCO, W.G. McDOUGAL, C.A. ROSS,
R.W. CLOUGH, J. PENZIEN, "Dynamics of Structures",
Mc Graw-Hill, 1993
V. OYERLİCİ, H. LUŞ, "Yapı Dinamiğine Giriş", Boğaziçi
Üniversitesi Yayınevi / İkinci Baskı, 2014
Ş.Z. UZSOY, "Yapı Dinamiği ve Deprem Mühendisliği –
Örnekler, Özgül Problemler", Birsen Yayınevi / 2. Baskı

24	**ECTS / WORK LOAD TABLE**

25	CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS															
	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ10	PQ11	PQ12	PQ13	PQ14	PQ15	PQ16
ÖK1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

LO: Learning Objectives   PQ: Program Qualifications

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