

# VIBRATION AND NOISE IN VEHICLES

1	Course Title:	VIBRATION AND NOISE IN VEHICLES
2	Course Code:	OTO5135
3	Type of Course:	Optional
4	Level of Course:	Third Cycle
5	Year of Study:	1
6	Semester:	1
7	ECTS Credits Allocated:	6.00
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. MURAT YAZICI
15	Course Lecturers:	Dr. Yücel CAN
16	Contact information of the Course Coordinator:	myazici@uludag.edu.tr UÜ Mühendislik Fakültesi, Otomotiv Mühendisliği Bölümü, 16059 Görükle Kampüsü, Bursa.
17	Website:	
18	Objective of the Course:	After teaching the basic information about vibration, noise and hardness in vehicles, it is ensured that students gain the ability to evaluate comfort parameters during driving.
19	Contribution of the Course to Professional Development:	The student develops basic knowledge of vibration, noise and harshness issues in vehicles.
20	Learning Outcomes:	
	1	Basic physical risk factors
	2	Noise and vibration regulations in terms of occupational health and safety
	3	Noise control calculations
	4	Mechanical vibrations and vibration damping mechanisms
	5	Vibrations and damping in vehicles
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21	Course Content:	
	<b>Course Content:</b>	
Week	Theoretical	Practice
1	The aim of the lesson, student achievements, information about the general process. Physical risk factors basic expression.	
2	Physical risk factors: Noise	
3	Physical risk factors: Vibration	
4	Other physical risk factors	

5	Occupational health and safety regulations and the use of personal protective equipment	
6	Noise control: Basic sound knowledge, Loudness and noise measure, Noise control and noise measurement	
7	Noise control: Effects of noise on people	
8	Noise control: Sound power levels of industrial and environmental noise sources	
9	Noise control: Sound propagation	
10	Numerical sample applications of propagation of sound	
11	How is noise control provided?	
12	Vibrations and damping in mechanical materials	
13	Vibration-damping calculations and sample applications	
14	Vibrations in vehicles and vehicle damping elements	

22	Textbooks, References and/or Other Materials:	* Matthew Harrison, Vehicle Refinement Controlling Noise and Vibration in Road Vehicles, SAE, 2004
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23	Assesment	
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TERM LEARNING ACTIVITIES	NUMBER	WEIGHT
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Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	1	3.00	42.00
Practicals/Labs	0	0.00	0.00
Self-study and preparation	40	9.00	126.00
Homeworks	1	8.00	8.00
Contribution of Final Exam to Success Grade	60	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	2.00	2.00
Measurement and Evaluation Techniques Used in the	It is done with written exams (Midterm, Homework and		
Others	0	0.00	0.00
Final Exams	1	2.00	2.00

<b>24</b>	<b>ECTS / WORK LOAD TABLE</b>
Total Work Load	182.00
Total work load/ 30 hr	6.00
ECTS Credit of the Course	6.00

<b>25</b>	<b>CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS</b>															
	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ10	PQ11	PQ12	PQ13	PQ14	PQ15	PQ16
ÖK1	3	4	4	4	3	2	2	3	2	3	3	4	4	3	2	3
ÖK2	3	4	4	4	3	2	2	3	2	3	3	4	4	3	2	3
ÖK3	3	4	4	4	3	2	2	3	2	3	3	4	4	3	2	3
ÖK4	3	4	4	4	3	2	2	3	2	3	3	4	4	3	2	3

ÖK5	3	4	4	4	3	2	2	3	2	3	3	4	4	3	2	3
LO: Learning Objectives   PQ: Program Qualifications																
Contrib ution Level:	1 very low		2 low		3 Medium		4 High		5 Very High							