VEHICLES MECHANICS

1	Course Title:	VEHICLES MECHANICS	
2	Course Code:	EHAZ204	
3	Type of Course:	Compulsory	
4	Level of Course:	Short Cycle	
5	Year of Study:	2	
6	Semester:	3	
7	ECTS Credits Allocated:	4.00	
8	Theoretical (hour/week):	2.00	
9	Practice (hour/week):	0.00	
10	Laboratory (hour/week):	2	
11	Prerequisites:	-	
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Prof. Dr. RIDVAN ARSLAN	
15	Course Lecturers:	Meslek Yüksekokulları Yönetim Kurullarının görevlendirdiği öğretim elemanları.	
16	Contact information of the Course Coordinator:	Prof. Dr. Rıdvan Arslan (ridvan@uludag.edu.tr, 2942341)	
17	Website:		
18	Objective of the Course:	To teach and analyse of vehicle dynamics	
19	Contribution of the Course to Professional Development:	To provide students with knowledge and skills about Vehicle mechanics that they can use in their professional lives	
20	Learning Outcomes:		
		1	To be able to calculate the vehicle and the vehicle s aerodynamics forces and torques
		2	To be able to do calculations of clutches, gear box and shaft and differential gear ratios
		3	To be able to do wheel and brake size account and understand linear movement of the motor vehicle and engine characteristics
		4	To make calculations of yaw, roll and glide accounts, Pre-layout geometry, the suspension system and Wheel steering angle
		5	To calculate the resistance forces of the vehicle during the transactions
		6	
		7	
		8	
		9	
		10	
21	Course Content:		

Course Content:

Week	Theoretical	Practice
1	Rolling resistance, acceleration resistance, air resistance, transmission resistance	

2	the physical behaviour of the vehicle, motion resistance, the lateral forces, aerodynamic resistance, Bernoulli equation	
3	Total resistance	
4	Motion transmission clutches, torque and power calculations, power, power transmission, electric clutch, reading table value, Power and torque transmission, gear ratio, the drive force transmission efficiency, mechanical gear box, automatic gear box	
5	Linear vehicle movements	
6	Dynamic and static loading of axes	
7	Vehicle movement equations	
8	Repeating courses and midterm exam	
9	Maximum Acceleration	
10	Motion path of the vehicle characteristics, resistance to motion in vehicles, vehicles yaw and lateral sliding, smooth linear movement vehicles	
11	Hydraulic systems, hydraulic sealing elements,	
12	empirical statements about the brake system	
13	Brake systems, Path-ground knowledge, distribution and control systems of brake	
14	Brake mechanics	

Activites		Number	Duration (hour)	Total Work Load (hour)
Theoretical		14	2.00	28.00
Practicals/Labs		14	2.00	28.00
Self study and preperation		7	5.00	35.00
Homeworks		1	15.00	15.00
Midterm Exam	1	40.00		
Midterm exams		1	5.00	5.00
Others		1	4.00	4.00
Final Exams		1	5.00	5.00
Total	2	100.00		
Total Work Load				
Total Work Load / 30 hr				4.00
ECTS Credit of the Course				4.00

Total	100.00
Measurement and Evaluation Techniques Used in the Course	Measurement and evaluation is carried out according to the priciples of Bursa uludag University Associate and Undergraduate Education Regulation.

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	5	4	0	3	0	5	3	4	0	4	0	0	0	0	0	0

No: 978-975-253-197-0
Çetinkaya, Selim, 1999, Taşit Mekaniği, Nobel Yayınları

ÖK2	5	4	0	3	0	5	3	4	0	4	0	0	0	0	0	0
ÖK3	5	4	0	3	0	5	2	4	0	4	0	0	0	0	0	0
ÖK4	5	4	0	3	0	5	3	4	0	4	0	0	0	0	0	0
ÖK5	5	3	0	3	0	5	2	4	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**