

VEHICLE COMMUNICATION TECHNOLOGIES

1	Course Title:	VEHICLE COMMUNICATION TECHNOLOGIES
2	Course Code:	EHAS202
3	Type of Course:	Optional
4	Level of Course:	Short Cycle
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 face
14	Course Coordinator:	Öğr. Gör. Dr. PELİN DEMİR
15	Course Lecturers:	Meslek Yüksekokulları Yönetim Kurullarının görevlendirdiği öğretim elemanları.
16	Contact information of the Course Coordinator:	Öğr. Gör Dr. Pelin Demir Bursa Uludağ Üniversitesi Teknik Bilimler MYO Hibrid ve Elektrikli Taşıtlar Prog. Görükle / Bursa pelinsule@uludag.edu.tr
17	Website:	
18	Objective of the Course:	Serial communication structure, I2C and SPI communication, especially Can, FlexRay communication, which are widely used in today's vehicles, will be discussed in the course. Communication protocols are exemplified by microcontroller based and it is aimed that students perceive the communication communication structure completely.
19	Contribution of the Course to Professional Development:	Students who successfully complete this course; • Will be able to master serial communication terminology • Apply SPI, I2C, Can and FlexRay communication protocols with microcontrollers.
20	Learning Outcomes:	
	1	Will learn about Analog and Digital communication issues
	2	Will be able to master serial communication terminology
	3	Will learn my terminology of logical data communication
	4	Logic gates will be able to apply data communication issues
	5	Will learn the loss and lossless environment
	6	Will learn about guided transmission lines, frequency, wavelength, noise, channel capacity, delay, Nyquist's theorem, Shannon's theorem and their concepts
	7	Will learn analog and digital modulation, demodulation techniques, multiplexing techniques, OSI data model, TCP/IP model
	8	Will be learn SPI, I2C, Can and FlexRay communication protocols
	9	The bus topology will learn the sample data frames
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21	Course Content:			
	Course Content:			
Week	Theoretical	Practice		
1	Communication network requirements of vehicles			
2	The purpose of use of the communication network in vehicles			
3	Communication network requirements of vehicles			
4	Communication structure of vehicles			
5	Communication network structure of vehicles			
6	Examination of network structures used in vehicles			
7	SPI Communication Structure SPI communication protocol Examples			
8	Midterm Exam			
9	I2C Communication Structure I2C communication protocol I2C Communication Examples			
Activites		Number	Duration (hour)	Total Work Load (hour)
Theoretical	CAN communication protocol CAN Communication Examples	14	2.00	28.00
Practicals/Labs		0	0.00	0.00
Self study	CAN Communication Applications	2	14.00	28.00
Homeworks		1	15.00	15.00
Projects		0	0.00	0.00
Field Studies		0	0.00	0.00
Midterm Exams		0	0.00	0.00
Others	Textbooks, References and/or Other Materials	1	15.00	15.00
Final Exams		0	0.00	0.00
Total Work Load				90.00
Total work load/ 30 hr				3.00
ECTS Credit of the Course				3.00
Midterm Exam	1	40.00		
Quiz	0	0.00		
Home work-project	0	0.00		
Final Exam	1	60.00		
Total	2	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	Measurement and evaluation is carried out according to the principles of Bursa uludag University Associate and Undergraduate Education Regulation.
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24	ECTS / WORK LOAD TABLE
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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	1	3	2	3	3	2	3	4	1	0	0	0	0	0	0	0
ÖK2	3	2	3	3	2	1	1	1	1	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
ÖK6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK9	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							