



1. Subject name	Automated driving systems				
2. Subject name in Hungarian	Automatizált járműirányítási rendszerek				
3. Code	BMEKOGGM707	4. Evaluation type	exam grade	5. Credits	5
6. Weekly contact hours	2 (28) Lecture	0 (0) Practice	2 (28) Lab		
7. Curriculum	Autonomous Vehicle Control Engineering MSc (A)	8. Role	Mandatory (mc) at Autonomous Vehicle Control Engineering MSc (A)		
9. Working hours for fulfilling the requirements of the subject					150
Contact hours	56	Preparation for seminars	0	Homework	50
Reading written materials	24	Midterm preparation	0	Exam preparation	20
10. Department	Department of Automotive Technologies				
11. Responsible lecturer	Dr. Szalay Zsolt				
12. Lecturers	Dr. Tihanyi Viktor, Gubovits Attila				
13. Prerequisites					
14. Description of lectures					
<p>The target is to present driver assistant systems and automated driving functions. The levels of automation according to SAE. Brief overview about vehicle dynamics. Driver assistance system overview on the stabilization level. Typical DAS systems, like AEBS, LDW, LKA available at present vehicles. Outlook on future advanced driver assistance systems at higher automation levels.</p> <p>Topics included: SAE automation levels, Basic vehicle dynamic model, lateral and longitudinal, ABS, ASR, ESP, Automated emergency braking, Lane departure warning, Lane keep assist, Lane change assist, Turning assist, Tempomat, adaptive cruise control, Park assist, Traffic jam assist, Highway Assist Pilot, Platooning.</p>					
15. Description of practices					
16. Description of laboratory practices					
<p>The lab enables the practical implementation of individual student work. Some of the systems presented in the presentation are also presented in practice.</p>					
17. Learning outcomes					
<p>A. Knowledge</p> <ul style="list-style-type: none"><li>• know the SAE levels of vehicle automation</li><li>• know the advanced driving support systems used today</li><li>• knows the structure of ABS, ESP, ASR</li><li>• is familiar with automated track recognition, figuration, bandwidth and bandwidth systems</li><li>• is familiar with parking assist and traffic jam assistance systems</li></ul> <p>B. Skills</p> <ul style="list-style-type: none"><li>• is able to understand the automated functions of driving support systems</li><li>• is able to design the basic elements of an automated driving support system under planning</li></ul> <p>C. Attitudes</p> <ul style="list-style-type: none"><li>• motivated to learn about advanced driver assistance systems</li><li>• motivated to participate in improvements to the automation level of vehicles</li></ul> <p>D. Autonomy and Responsibility</p> <ul style="list-style-type: none"><li>• responsible for the work done</li></ul>					
18. Requirements, way to determine a grade (obtain a signature)					
Signature: fulfilment of individual homework. Verbal exam. Final grade is average of homework (50%) and exam (50%).					
19. Opportunity for repeat/retake and delayed completion					
Delayed completion of individual homework.					

20. Learning materials

Lecture Notes

Effective date	10 October 2019	This Subject Datasheet is valid for	Inactive courses
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