Budapest University of Technology and Economics
Faculty of Transportation Engineering and Vehicle Engineer

1. Subject name	# Safety and reliability in vehicle industry
2. Subject name in Hungarian	Biztonság és megbízhatóság a járműiparban

3. Code	**BMEKOKAM703**	**4. Evaluation type**	mid-term grade	**5. Credits**	**3**

6. Weekly contact hours	**2 (28) Lecture**	**0 (0) Practice**	**0 (0) 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				**90**
Contact hours	28	**Preparation for seminars**	28	**Homework**	19
Reading written materials	0	**Midterm preparation**	15	**Exam preparation**	0

10. Department	**Department of Control for Transportation and Vehicle Systems**
11. Responsible lecturer	Dr. Sághi Balázs
12. Lecturers	Dr. Sághi Balázs
13. Prerequisites	

14. Description of lectures

The aim of the course is to provide the students with theoretical and practical knowledge about the approach and methods for designing reliable, safe and secure vehicle systems. The task is to review the safety and reliability analysis methods used in the vehicle industry and to describe the safety standards for the automotive industry. The curriculum includes the introduction of the concepts of risk and risk analysis, basic concepts of safety and reliability, as well as an overview of reliability modeling techniques used in the vehicle industry, as well as a set of best practices for reliability and safety analysis. During the processing of the subject we pay attention to ISO 26262 for vehicle safety.

15. Description of practices

16. Description of labortory practices

17. Learning outcomes

A. Knowledge
- knows the guidelines of the ISO 26262 standard for the automotive industry
- is familiar with the concepts and mathematical apparatus of basic safety, risk and risk analysis
- is familiar with the development methods of security-critical systems and security architectures
- is familiar with the numerical descriptive tools of reliability and the related calculation methods

B. Skills
- capable of performing safety calculations based on a specific specification
- can perform risk analysis calculations

C. Attitudes
- is interested in the safety and risk issues of autonomous vehicles

D. Autonomy and Responsibility
- does its work in autonomous and responsible wa

18. Requirements, way to determine a grade (obtain a signature)

Two midsemester exams (40-40%) and an individual homework (20%) and the final grade is the mean of the grades of the tasks.

19. Opportunity for repeat/retake and delayed completion

Both midsemester exams can be retried once. The individual task cannot be delayed completed.

20. Learning materials

Lecture Notes