



1. Subject name	Synergy of Engineering and Business: The Disruptive Transformation of the Truck Industry as a case study 1.				
2. Subject name in Hungarian	Mérnöki és üzleti szinergia: A haszonzárműipar robbanásszerű átalakulása mint esettanulmány 1.	3. Role	oc		
4. Code	BMEKOKKBsM8001-00	5. Evaluation type	m	6. Credits	3
7. Weekly contact hours	1 lecture	1 practice	0 lab	8. Curriculum	any
9. Working hours for fulfilling the requirements of the subject					90 hours
Contact hours	28 hours	Preparation for seminars	20 hours	Homework	27 hours
Reading written materials	15 hours	Midterm preparation	0 hours	Exam preparation	0 hours
10. Department	Department of Transport Technology and Economics				
11. Responsible lecturer	Dr. Mészáros, Ferenc				
12. Lecturers	Dr. Steinberger, Jürgen				
13. Prerequisites	Recommended prerequisite: any basic economic and management subject.				
14. Description of lectures					
<p>The truck industry has been the steady, slow changing backbone of the logistic industry for decades. 70% of the goods shipped on land are transported by trucks. Technologies, market players and business models has changed and developed slowly, gradually, and evolutionary. With 20 times the weight and 5 times the lifetime of a passenger car, the requirements for the reliability and safety of a truck have defined industry standards, worldwide.</p> <p>However, over the last 5 years the speed of change with respect to legal requirements, market consolidation, business models and technology changes has factually exploded. Emerging countries like India, Brazil and China have defined a sequence of legislative rules for new safety standards requiring ESP and new ADAS (Advanced Driver Assistance Systems). European legislation is focusing on emission reduction, functional safety requirements as well as cyber security standards. A former fragmented market with numerous small regional truck manufacturer is consolidating to a few global and regional players, driving purchasing power and technical standardization. At the same time, driver shortage and continuously increasing costs for trucks and infrastructure demand automated solutions. In consequence, new safety standards, Connectivity and Highly Automated Driving solutions as well as E-Mobility and emission reduction systems are going to be developed within the next 5 to 7 years, each region setting a different focus and timeline. The challenges could not be greater. Due to the possibility of setting technical and business standards, time to market becomes crucial. Concurrently, the focus on talents has shifted from the classical mechanical expertise towards electrical, software and system engineering. To manage the challenges, new organizational and management approaches need to be implemented.</p> <p>The highlighted topics to be discussed are the business, ecological and social factors, the legal framework conditions, as well as technical management, structural and organizational change needs. The lectures of the semester are organized into 4 blocks, each of which is 3 x 1:30 long, with 2 x 10-minute breaks between them. Another 2 x 1:30 sessions are reserved for the exam and one retake option.</p>					
15. Description of practices					
2x case studies to be elaborated as a teamwork:					
<ol style="list-style-type: none"> (1) Analyse the disruption of HAD and E-mobility for a European and a Chinese Truck manufacturer, define the counterstrategy and draw a worldwide picture of the truck industry in 10 years (2) Feasibility Study and Business Case Analysis for a new business field in E-mobility: Thermal Battery Management for Tier 1 					
16. Description of laboratory practices					
No lab practices.					
17. Learning outcomes					
This lecture series will give the students a broad overview of the disruptive changes in the complete truck industry.					
Knowledge: It will focus on and explain the technology changes and challenges in detail, while giving the students the necessary background information to understand the legal, business and market drivers.					
Skills: To complete the picture, the students will also get acquainted with new organizational and technical management approaches to face the upcoming challenges.					
Attitude: In addition to the technical competence, the student will be able to understand and analyze problems based on business, market and legal aspects, as they actually appear in real life.					
Autonomy and responsibility: They can make responsible decisions independently and prepare decision-making materials considering technical, business, market and legal aspects.					
18. Requirements, way to determine a grade (obtain a signature)					
Midterm grade, primarily based on the activity of the student and the case studies. Grading: Students must form teams of 5. Each team receives a maximum of 5 points per person to distribute among its members: 1-5 per person. The group members decide on the distribution of points among themselves.					

19. Opportunity for repeat/retake and delayed completion

The case study work can be retaken once.

20. Learning materials

Lecture notes.
