Design methods of material handling systems

1. Subject name	Design methods of material handling systems				
2. Subject name in Hungarian	Anyagmozgató rendszerek tervezése				
3. Code	BMEKOALM642	4. Evaluation type	mid-term grade	5. Credits	5
6. Weekly contact hours	1 (5) Lecture	2 (11) Practice	1 (5) Lab		
7. Curriculum	Vehicle Engineering MSc (J)	8. Role	Specialization (sp) at Vehicle Engineering MSc (J)		
9. Working hours for fulfilling the requirements of the subject					150
Contact hours	56	Preparation for seminars	17	Homework	30
Reading written materials	32	Midterm preparation	0	Exam preparation	15
10. Department	Department of Material Handling and Logistics Systems				
11. Responsible lecturer	Dr. Bohács Gábor				
12. Lecturers	Gáspár Dániel, Szabó Péter, Odonics Boglárka, Dr. Rinkács Angéla				
13. Prerequisites					

14. Description of lectures

Grouping and typical tasks and role of material handling systems in production systems. Characteristics of its structure and operation. The material handling systems' process design. General and detailled design. Comparison of design variations based on value in use, economic considerations and risks. Layout design. Design of communication between system elements, issues of mechanical alignment of system components. Introduction to Automation Issues. Methods for determining bottlenecks; throughput, partial frontier performance testing. Strategical planning of the material handling system. Material handling safety technology. Reliability of material handling systems.

15. Description of practices

Exploration of system design conditions (design input parameters, demand assessment). Overview and practical implementation of automation technology basics and network control overhead communications. Introducing system management tools. Developing operational strategies. Homework consultation.

16. Description of labortory practices

Presentation of working practices of industrial partners during plant visits.

17. Learning outcomes

A. Knowledge
- Knowledge of material handling systems structure and operation.
- Knowledge of material system design relationships.

B. Skills
- Ability to apply the above knowledge and related professional knowledge in the design of new systems.

C. Attitudes
- Strives to provide with the best knowledge and skills to work with the instructors.

D. Autonomy and Responsibility
- In the use of the acquired knowledge the student carries out independent, responsible engineering work.

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

Requirements for signature: acceptance of 1 homework (30% for the final submission). Exam (70%).

19. Opportunity for repeat/retake and delayed completion

The final submission can be resubmitted once.

20. Learning materials

Students can download the subject notes in pdf format via Moodle.

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