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

1. Subject name	**Construction machinery design - project**				
2. Subject name in Hungarian	Építőgép projekt				
3. Code	**BMEKOALM674**	4. Evaluation type	**mid-term grade**	5. Credits	**5**
6. Weekly contact hours	**2 (10) Lecture**	**2 (11) Practice**	**0 (0) 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	12	Homework	30
Reading written materials	36	Midterm preparation	16	Exam preparation	0
10. Department	**Department of Material Handling and Logistics Systems**				
11. Responsible lecturer	Dr. Bohács Gábor				
12. Lecturers	Dr. Bohács Gábor, Dr. Gyimesi András				
13. Prerequisites					

14. Description of lectures

Overview of Deep Construction Technologies. Construction of earthmoving machinery, including intermittent and continuous diggers, earthworks and conveyors. Theoretical foundations of soil compaction. Requirements for selecting compaction equipment, comparison of compression modes. Choice of operating parameters for pavement-loading machines. Investigation of human-machine-environment in foundation and utility engineering technologies. Modern environmentally friendly construction technologies. Construction of a mobile hydraulic machine drive system, diagnostic test methods for hydraulic systems. Technical, economic and environmental aspects of the selection of civil engineering machinery.

15. Description of practices

Presentations are presented in the context of examples. Consultation on planning task.

16. Description of labortory practices

17. Learning outcomes

A. Knowledge

- Know the characteristics of earthworks and fundation construction works.
- Comprehensive knowledge of the excavator and machine tools for chipping technologies.
- Know the process and technologies of soil compaction.
- Know the technologies and equipment of paving, civil engineering and specialized civil engineering.
- Know the typical demands of machines and their design principles.
- Know the operation parameters of the machines required for construction processes and the related methods.
- Know the diagnostic methods needed to operate machines.

B. Skills

- Able to apply your skills effectively and integrally.
- Consciously apply the learned methods.
- It is capable of process planning and dimensioning tasks using technological parameters.
- Apply diagnostic tools.
- Is able to solve the problems that have arisen alone or in a team, to pass on his knowledge effectively.
- It has original, innovative ideas.

C. Attitudes

- Work at a high level in a group and independently.
- Searching for relationships with other subjects.
- Open to use math tools.
- Seek to get to know and routinely use the tools needed for solutions.
- Strive for accurate and error-free task solving.

D. Autonomy and Responsibility

- Develops solutions independently.
- Pay attention to the effects and consequences of your decisions.
- Apply the systemic approach in your thinking.

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

During the semester, a midterm test is taken. The end of semester signing is a minimum to provide a sufficient level of two semi-annual planning tasks and at least a satisfactory outcome of the midterm test. The exam pass is 20% a at home, 30% for homework and 50% for written examination, which students can, if necessary orally. The homeworks' submission and the midterm test can both be resubmitted once.

19. Opportunity for repeat/retake and delayed completion

The homeworks' submission and the midterm test can both 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