1. Subject name	**Construction of vehicle manufacturing systems II.**				
2. Subject name in Hungarian	Járműgyártás és gyártórendszer tervezés II.				
3. Code	**BMEKOGGM651**	4. Evaluation type	**mid-term grade**	5. Credits	**5**
6. Weekly contact hours	**2 (10) Lecture**	**0 (0) Practice**	**2 (11) 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	18	Homework	30
Reading written materials	38	Midterm preparation	8	Exam preparation	0
10. Department	**Department of Automotive Technologies**				
11. Responsible lecturer	Dr. Pál Zoltán				
12. Lecturers	Dr. Takács János, Dr. Göndöcs Balázs, Dr. Szmejkál Attila, Dr. Weltsch Zoltán				
13. Prerequisites					

14. Description of lectures

Survey of materials of cutting tools and the direction of development. Planning of manufacturing system and system elements for vehicle part-production. In this topic are the followings: planning methods of cutting tools (geometrical planning: chip-space planning, chip disposal planning, cooling solution planning, minimal-greasing), tool production methods: slotmilling, backing off turning, backing off grinding, spark manufacturing. Special tools for hard manufacturing of hybrid materials. Defects: deformations, flash appearence, wearing measurement, renovation of edges, tool sharpening. Tool management systems and economical analyses.
Stucture of devices and planning method. Orientation, grip, driving, function, and manufacturing accuracy. manufacturing and renovation of devices.
Technological operations, choosing method of machines, machine systems, planning of operation and centralisation of operation and cost analysation.
Tooling of machines and devices.
Factory planning: method of technical development, planning methods of vehicle production and repair workshops and workplaces on base of project management and requirements of industry - 0. In this topic are the followings: planning of casting-, cutting-, forming-, assembly-, cleaning-, painting-, and repairing workshops and workplaces. New requirements and points of view for building of the future factory.

15. Description of practices

16. Description of labortory practices

Studying operating vehicle manufacturing systems. Calibration of tools.

17. Learning outcomes

A. Knowledge

- knows the cutting tools and tool systems
- knows the tool planning methods
- knows the tool production methods
- knows the new tool materials, use fields, advantages, disadvantages
- knows the planning methods of devices
- knows the factory of vehicle production and the workplaces in the factories
- knows the new points of view and planning methods of industry - 0
- knows the new developments trends and the new requirements

B. Skills

- the students can choose the correct engineering method with engineer creativity and can plan cutting tool, device,

new workshop, and workplace

C. Attitudes

- the student wants to learn the knowledgement of subject, he cooperate with the lecturer
- in the preparing of excercise, she/he is open to use the newest results of information technology in her/his study and open for use of the new result of industry - 0, and use the new literature in her/his study

D. Autonomy and Responsibility

- the student feels responsibility for use of the knowledgement in quality
- she/he uses the knowledgement with responsibility and regularly develop his study

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

The students during of semester get homeworks of every part-topic: tool planning, technology planning, device planning, workshop and workplace planning. During the semester the students write one midterm exam. The requirement of the subject: successful midterm exam and the giving of successful home-works for deadline. The final grade is the average of midterm test (50%) and home-works (50%) results.

19. Opportunity for repeat/retake and delayed completion

The midterm exam can be substituted once, the supplementation of one planning work is possible during the supplementation week.

20. Learning materials

E-books and materials provided by the Department.
Serope Kalpakjian: Manufacturing Manufacturing Engineering and Technology (2013)

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