1. Subject name	**Theory of Additive Manufacturing Technologies PhD**				
2. Subject name in Hungarian	Additív gyártástechnológiák elmélete PhD				
3. Code	**BMEKOJSD005**	4. Evaluation type	**exam grade**	5. Credits	**2**
6. Weekly contact hours	**2 (0) Lecture**	**0 (0) Practice**		**0 (0) Lab**	
7. Curriculum	**PhD Programme**	8. Role	**Specific course**		

9. Working hours for fulfilling the requirements of the subject				**74**	
Contact hours	28	Preparation for seminars	18	Homework	5
Reading written materials	5	Midterm preparation	18	Exam preparation	0

10. Department	**Department of Railway Vehicles and Vehicle System Analysis**
11. Responsible lecturer	Dr. Ficzere Péter
12. Lecturers	Dr. Ficzere Péter
13. Prerequisites	

14. Description of lectures

Description of design methods
Applications of additive manufacturing technologies
Applications of additive manufacturing technologies
Principle of additive manufacturing technologies
An overview of additive manufacturing processes
Case study
Generation of inputs needed for additive manufacturing, their overview
Examination of the effects of settings and production parameters
Economic Issues in Additive Manufacturing Technologies
Accuracy of manufacturing and loadability issues
Strength dimensioning of parts made by additive manufacturing
Manufacturing Simulation options
Overview of Materials Used for Additive Manufacturing

15. Description of practices

16. Description of labortory practices

17. Learning outcomes

A. Knowledge
- Knowledge of recognization the applicability and cost effectiveness of additive manufacturing.
- Knowledge of the recognization of the problems that may arise during additive manufacturing based on CAD models and how to eliminate them.
- Knowledge of the appropriate technology selection based on part / model requirements.

B. Skills
- Able to select and coordinate the appropriate manufacturing technology on the basis of any model and individual part requirements.
- Able to create the needed format to CAM software with an accurate enough based on any model file
- Able to define the appropriate settings, manufacturing parameters and generating the code required for the machine.
- Able to the manufacturing parts, including pre- and post-production.

C. Attitudes
- Strive to maximize their abilities to make their studies at the highest possible level, with a profound and independent knowledge, accurate and error-free, in compliance with the rules of the applicable tools, in collaboration with the

instructors.

D. Autonomy and Responsibility
- Take responsibility for the quality of the work and the ethical standards that set an example for the classmates, using the knowledge acquired during the course.

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

The acquisition of the signature of the subject, and, in addition, the condition of taking exam is giving in the complete individual student homework for deadline. The exam is oral.

19. Opportunity for repeat/retake and delayed completion

According to the TVSZ

20. Learning materials

Dr. Ficzere Péter, Az additív gyártástechnológiák elmélete diasor

| Effective date | 27 November 2019 | This Subject Datasheet is valid for | Inactive courses |