



1. Subject name	Analytical mechanics				
2. Subject name in Hungarian	Analitikus mechanika				
3. Code	BMEKOJSD001	4. Evaluation type	exam grade	5. Credits	4
6. Weekly contact hours	2 (0) Lecture	1 (0) Practice	0 (0) Lab		
7. Curriculum	PhD Programme	8. Role	Basic course		
9. Working hours for fulfilling the requirements of the subject					120
Contact hours	42	Preparation for seminars	14	Homework	28
Reading written materials	12	Midterm preparation	0	Exam preparation	24
10. Department	Department of Railway Vehicles and Vehicle System Analysis				
11. Responsible lecturer	Dr. Béda Péter				
12. Lecturers	Dr. Béda Péter				
13. Prerequisites					
14. Description of lectures					
Structure and classification of mechanical systems. Constraints. Lagrange equations of second kind. Hamilton's canonic equations of motion. First integrals of motion. Routh-Voss equations. Cyclic coordinates, hidden motions. Critical velocity of shafts, gyroscopic effect.					
15. Description of practices					
Examples from the topics of the lessons.					
16. Description of laboratory practices					
17. Learning outcomes					
A. Knowledge <ul style="list-style-type: none">• Methods of the analytical mechanics. B. Skills <ul style="list-style-type: none">• Analytical description of a mechanical system, model building. C. Attitudes <ul style="list-style-type: none">• being open to understand and learn novelties on that given domain. D. Autonomy and Responsibility <ul style="list-style-type: none">• Evaluation and choice of optimal model elements					
18. Requirements, way to determine a grade (obtain a signature)					
Semester note upon succesful realisation of the homework and an oral exam.					
19. Opportunity for repeat/retake and delayed completion					
Essay secondary deadlines precised in the lessons requirements.					
20. Learning materials					
Effective date	27 November 2021	This Subject Datasheet is valid for		Inactive courses	