



1. Subject name	Mechanics of plastic deformations				
2. Subject name in Hungarian	Képlékeny alakváltozások mechanikája				
3. Code	BMEKOJSD002	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	12	Homework	28
Reading written materials	14	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					
Notion of the plastic body. Plasticity conditions: Tresca - Saint-Venant, Mises. The elasto-plastic deformation theory: Hencky's equations. Plastic flow theory: Prandtl-Reuss equations. Various models of the plastic hardening. Basic equations of the theory of plasticity. Incremental forms of the material equations. Applications: pulled, bent and torsioned rod; elasto-plastic deformation of a thick walled tube, discharging, remanent stress; plastic planar flow, sliding lines. Plastic stability.					
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 theory of plasticity. B. Skills <ul style="list-style-type: none">• Description of the plastic material behaviour, 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 element.					
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 2019	This Subject Datasheet is valid for		Inactive courses	