



Budapest University of Technology and Economics

Faculty of Transportation Engineering and Vehicle Engineering

1. Subject name	Suspension design				
2. Subject name in Hungarian	Futómű-tervezés				
3. Code	BMEKOGJM613	4. Evaluation type	exam grade	5. Credits	4
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					120
Contact hours	56	Preparation for seminars	18	Homework	0
Reading written materials	26	Midterm preparation	10	Exam preparation	10
10. Department	Department of Automotive Technologies				
11. Responsible lecturer	Dr. Zöldy Máté				
12. Lecturers	Harth Péter, Szabó Bálint				
13. Prerequisites					
14. Description of lectures					
The analysis of the forces acting on the wheel of the vehicle is a function of modern wheel models, the static and dynamic geometric characteristics of the wheel for planning. Geometric design of wheel suspension, strength dimensioning of individual suspension elements (rods, arms, ball joints, rubber pads). Vibration analysis of the vehicle for the requirements of the design of the suspension, geometry and strength dimensioning of the elements of the springs (springs, shock absorbers, stabilizers, limiting elements). Dynamic testing of vehicle braking to determine design requirements, methods of dividing brake force per axle, designing the braking system in principle, geometry, strength, heat and flow geometry of each element. Based on dynamic analysis of steering, defining the starting data required for the design of the steering system, constructing the steering mechanism, geometric and strength dimensioning of each element (trapezoidal arm, track bar, steering wheel, steering wheel and shaft, ball joints).					
15. Description of practices					
16. Description of laboratory practices					
Semester planning task design on computer, consultation.					
17. Learning outcomes					
A. Knowledge <ul style="list-style-type: none">• Knowledge of vehicle dynamics. B. Skills <ul style="list-style-type: none">• Able to improve vehicle dynamics. C. Attitudes <ul style="list-style-type: none">• Openness to new opportunities in the field. D. Autonomy and Responsibility <ul style="list-style-type: none">• Participate in solving independent task.					
18. Requirements, way to determine a grade (obtain a signature)					
During the semester 1 midterm test has to be completed with more the 50 % of the maximal points. The conditions for obtaining the signature are the completing the midterm test. Final grade equals to the result of the written exam.					
19. Opportunity for repeat/retake and delayed completion					
The midterm test can be retaken once.					
20. Learning materials					
Slides and presentation notes					
Effective date	10 October 2019	This Subject Datasheet is valid for		2024/2025 semester II	

