

Óbuda University Bánki Donát Faculty of Mechanical and Safety Engineering			Institute of Machine Design and Safety Engineering		
Name and code of the subject: Mechanics III., BGBMN33NEC				Credit: 6	
<i>English language course 2015/2016. winter semester</i>					
Mechatronics BSc					
Subject leader:	Dr. Tibor Goda			Lecturer:	Dr. Tibor Goda
Prerequisites:	BGBMN22NEC -Mechanics II.				
Weekly hours:	Lecture: 2	Group seminar: 2	Lab: 0	Consultation:	
Requirements (s,v,f):	f – semester mark				
Course description					
This course provides a basic introduction to mechanics, especially to kinematics and dynamics; to develop confidence and competence in solving practical problems.					
Time schedule:					
Week (consultation)	Topics				
1.	Fundamentals. Velocity and acceleration.				
2.	Throwing. Circular motion. Harmonic vibration.				
3.	Kinematics of rigid bodies. State of velocity. Elementary motion. State of acceleration.				
4.	(Plane) Kinematics of rigid bodies.				
5.	Kinematics of simple plane mechanisms.				
6.	Kinetics of a particle. Newton's laws. Momentum principles.				
7.	Kinetic energy. Work and power theorems.				
8.	Constrained motion of particle.				
9.	Undamped and damped vibration.				
10.	Kinetics of system of particles.				
11.	(Plane) Kinetics of rigid bodies.				
12.	Mass moment of inertia. Parallel axis (Steiner's) theorem.				
13.	Fundamental conception of dynamics. Kinetic energy.				
14.	Final test. Closing.				
Tasks in semester					
Week	Homeworks and tests				
3.	Announcement of 1 st homework; submission: week 6				
8.	Announcement of 2 nd homework; submission: week 11 1 st midterm test from kinematics (25 point)				
12.	2 nd midterm test from kinetics (25 point)				
13.	Final test (50 point)				
<i>Way of late submission in case of homework:</i> Against extra fee homeworks can be submitted at any time within the lecture period.					
<i>Writing tests:</i> Students being absent (justified absence) from one of the tests can complete the given test only once. In case of unjustified absence there is no way to complete one of the tests at later time. There is no way to improve already completed tests.					
<i>Semester mark:</i>					
Semester mark (based on the sum of the semester points) 0-50 point: fail (1); 51-62 point: pass (2); 63-75 point: satisfactory (3); 76-88 point: good (4), 89-100 point: excellent (5).					
<i>Conditions for the semester mark:</i> One must participate in at least 70% of all classes. Two obligatory homeworks must be solved and submitted until the deadline. Wrong and/or not accepted homeworks should be submitted again. Without accepted homeworks and completed tests the semester is invalid. Two midterm tests and one closing test must be written. The sum points of tests must be no less than 51 point. Otherwise a repeated test must be completed on one of the first 10 days of examination period. If the repeated test is not accepted, then the semester is invalid.					

Literature:
Obligatory: 1. lecture notes handed out weekly
Recommended:

Date: 16. 06. 2015.

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subject leader