

Study program / course: Mechanical Engineering				
Type and level of study: Bachelor academic studies				
Course: Mechanics 3				
Lecturers: Milan V. Micunovic, Dragan I. Milosavljevic, Radovan B. Slavkovic				
Status of course: Obligatory, joint for all modules, IV semester				
Number of ECTS: 6				
Precondition: Passed exam of Mechanics 2				
The objective of course The aim of this course is that students understand basic concepts of rigid body mechanics and to enable him to prove theoretical basics independently and to solve problems that may be faced in technical problems. Physical understanding of problems in engineering applications will be of essential importance.				
The outcome of course Students will, upon passing exams, will be able to understand technical subjects that follow, and to be a base to master subjects such as Mechanics 3. Adopted competence should amplify student's ability for analytical set up of engineering problems.				
Syllabus Theoretical study: The aim of theoretical study is to make students capable to prove theorems and formulas necessary for dynamic analysis of problems. Lectures are given with strong usage of contemporary mathematical tools, and specially vector algebra, with active student's participations. Subject has development and proofs of equations of dynamics of system of material points as well as systems of rigid bodies, dynamic of plane motion of rigid bodies, rotation about fixed point etc. Part of subject is analytical mechanics, linearization of equations of motion, stability and oscillation of rigid bodies and systems around point of relative equilibrium. Practical classes Practical solutions of chosen examples will be presented by lecturer, and students are asked to solve three given homework examples by themselves, to present and interpret those personally to Teaching assistant.				
Recommended reading [1] Kojic, M, Micunovic, M, Kinematics (in Serbian), Naučna Knjiga, Belgrade, 1979. [2] Milosavljevic, D, Kinematics, methodical collection of solved examples with outlines of theory, SIA, Kragujevac, 1995. [3] Kojic, M, Dynamics, Theory and examples, Naučna Knjiga, Belgrade, 1985. [4] Kojic, M, Micunovic, M, Theory of oscillations, Naučna Knjiga, Belgrade, 1979. [5] Djuric, S, Mechanics III and IV – Dynamics and Theory of oscillations, Faculty of Mechanical Engineering in Belgrade, Belgrade, 1981.				
The number of hours of active teaching:				Other classes:
Theory: 2	Practical classes: 2	Other forms of teaching: 0	Research study: 0	1
Methods of teaching Teaching is conducted through lectures, practical classes and independent work of students. Within lectures students receive basic theoretical knowledge. In practical classes students receive practical knowledge and skill for using mathematical tools for study of Mechanics.				
Evaluation of knowledge				
Pre-final exam obligations	points	Final exam	points	
Activities during the classes:	6	Final exam	42	
Practical classes/ Home works:				
Colloquiums(s)/ Tests:	44			
Seminar(s) :	8			