

<b>Study program / course: Mechanical Engineering</b>			
<b>Type and level of study:</b> Bachelor academic studies			
<b>Course: Machine Elements II</b>			
<b>Lecturers:</b> Slobodan Tanasijević, Đorđević Zorica, Blagojević Mirko			
<b>Status of course:</b> Obligatory for the module M <sub>2</sub> , V semester			
<b>Number of ECTS:6</b>			
<b>Precondition:</b> Machine elements			
<b>The objective of course</b> Students learn about machine elements in real working conditions. The aim is introducing students with possible shapes of machine elements with next aspects: usage, modernization, innovation, economy,... It mans the introducing the students with dynamic dealing of machine elements. There is and modeling machine elements in dynamic working conditions.			
<b>The outcome of course</b> Accurately setting of construction task, projecting with implementation requests about manufacturing and operating, dimensioning and checking of machine elements, assemblies, machines and machine systems.			
<b>Syllabus</b>			
<b>Theoretical study</b>			
<b>Introduction. Basis of dynamic dealing and calculating of machine elements. Machine connections.</b> Dynamic durability of screw connection. Increment dynamic loading of screw connection. Analysis forces and delivery forces in screw connections. Calculating and making of responsible screw connections. Springs with progressive characteristic. Compound stressed springs. Modeling of various kinds of machine connections and usage of FEA. <b>Gears.</b> Special kinds of gearings-noninvolute gearing. Materials for gears. Tolerances of gears. Heat treatment of gears and their lubrication, dissipation of energy and testing of gears heating. Dynamic dealing of gears and their dynamic models. Usage of FEA. <b>Shafts and axis.</b> Materials for shafts. Calculating of shafts and axis (stiffness and dynamic stability criteria). Dynamic models of shafts. Using of FEA. <b>Rolling and sliding bearings.</b> Special types of bearings. Modeling of bearings in real working conditions.			
<b>Practical classes</b> Solving of practical problems, instructions for homework and their verifying. The homework are from next areas: screw connections, gears (noninvolute gearing) and shafts.			
<b>Recommended reading</b> 1.Nikolić V.: Machine Elements, Theory, Calculations, Examples, Faculty of Mechanical Engineering, Kragujevac, 2004 2. Nikolić V.: Machine Elements, Theory and Examples, Faculty of Mechanical Engineering, Kragujevac, 1995			
The number of hours of active teaching:			Other classes:1
Theory: 3	Practical classes: 1.6	Other forms of teaching: 0.4	
<b>Methods of teaching</b> Lectures, exercises, individual homework, tests and final test. Through lectures, students get basic information about theoretical basics, while through exercises the students solving the practical problems.			
<b>Evaluation of knowledge</b>			
<b>Pre-final exam obligations</b>	<b>points</b>	<b>Final exam</b>	<b>points</b>
Activities during the classes:	<b>2</b>	written exam	<b>34</b>
Practical classes:	<b>4</b>		
Colloquiums(s) :	<b>33</b>		
Seminar(s) :	<b>27</b>		