

Study program / course: Mechanical Engineering			
Type and level of study: Bachelor academic studies			
Course: Machine Dynamics			
Lecturers: Ranković M. Vesna			
Status of course: Elective for module M₅, VI semester			
Number of ECTS: 6			
Precondition: No			
The objective of course Students learn about experimental determination of centroid (c.o.g.) location and moment of inertia; balancing of mechanisms, rotors and multicylinder engines; elastodynamic analysis of the high speed mechanisms; isolation vibration. Within Laboratory practice the training is done for determination of the body's moment of inertia and balancing of rotors in its own bearings.			
The outcome of course By the end of this course, students should be able to determine the moment of inertia of a body, to determine imbalance and balancing of mechanisms, rotors, and multicylinder engines, to solve problem of machines vibration isolation.			
Syllabus Theoretical study 1. Experimental determination of centroid location and moment of inertia. 2. Balancing of planar mechanisms, 3. Balancing of rigid rotors; single plane and two-plane balancing; analytical and experimental field balancing methods, 4. Balancing of multicylinder engines, 5. Elastodynamic analysis of the high speed mechanisms, 6. machines vibrations. Isolation of vibrations.			
Practical classes 1. Measurement of the moment of inertia, 2. Balancing of rotors in its own bearings.			
Recommended reading Ilija Nikolić, Dynamics of Machine and Mechanisms, Yugoslav Tribology Society, Kragujevac, 1995. (In Serbian)			
The number of hours of active teaching:			Other classes:
Theory: 3	Practical classes: 1.6	Other forms of teaching: 0.4	Research study: 0 1
Methods of teaching Lessons, auditory and laboratorial classes, independent work.			
Evaluation of knowledge			
Pre-final exam obligations	points	Final exam	points
Activities during the classes:	5		30
Practical classes:	20		
Colloquiums(s) :	45		