

Study program / course: Mechanical Engineering				
Type and level of study: Bachelor academic studies				
Course: Fundamentals of tribology				
Lecturers: Miroslav Babic, PhD; Slobodan Mitrović, PhD				
Status of course: Obligatory for module M1, V semester				
Number of ECTS: 6				
Precondition: None				
Course objective Course is designed with the main objective to provide students' education in area fundamentals of tribology as multidisciplinary science and technology about interaction of contact surfaces during relative motion with special emphasis on fundamentals of friction, wear and lubrication processes.				
Course goal Based on this course student: <ul style="list-style-type: none">• Should know and understand scientific and technological fundamentals of tribology, significance of tribological dissipative processes, nature and characteristics of contact layers and surfaces, nature of fundamental friction, wear and lubrication mechanisms, losses and possible savings through tribology.• Should be able to identify consequences of tribological processes into real tribosystems• Should be able to realize friction and wear tests.				
Course content <i>Theoretical part</i> Tribology as a science and technology. Contact surfaces and contact layers and their characteristics. Nature of the real contact of functional surfaces. Friction (types, mechanism and frictional theories). Wear (mechanism and theories). Lubrication (regimes and lubrication theories). Technological aspects of tribology. <i>Exercises (oral and laboratory)</i> Basic and additional roughness parameters of contact surfaces. Tribometry – measuring of basic tribological parameters. Influence of the contact conditions and type of elements of contact pair on tribological processes development. Realisation and defending of laboratory measurements reports.				
Literature <ol style="list-style-type: none">1. Ivkovic B., Rac A., Tribology (in Serbian), Yugoslav Tribology Society, 1995.2. Babic M., Lubricating oil monitoring (in Serbian), Faculty of Mechanical Engineering, Kragujevac, 2004.				
The number of hours of active teaching				Other classes: 1
Theory: 3	Exercises: 1.6	Other forms of teaching: 0.4	Research study: 0	
Teaching methods Teaching is comprised of lecturing and oral exercises. Lecturing is done with modern multimedia tool and active participation of students in analysis of case studies of characteristic tribology phenomena and their consequences. Exercises is realised as oral (preparation for realisation of laboratory exercises and measurement results analysis) and laboratory with direct working at appropriate computer aided tribometry equipment. Realization of all student obligations is demanded during exercises with possible consultation from professor and associates.				
Evaluation of knowledge (the maximum number of points 100)				
Pre-final exam obligations		points	Final exam	points
Activities during the classes:		10	Written exam:	30
Practical teaching		15		
Preliminary exams		30		
Seminars		15		

