

Study program / course: Mechanical Engineering			
Type and level of study: Basic academic studies			
Course: Fundamentals of Machine Design			
Lecturers: Marjanovic Nenad			
Status of course: Obligatory, joint for all modules, V semester			
Number of ECTS:6			
Precondition: Machine Elements			
The objective of course The aim of this course is to introduce students in mechanical systems design. Attainment will make students possible for further improvement in specific machine systems design. Knowledge of standardization, tolerances, constructs calculation and forming, rational design principles and of work capability condition amplification areas, is base for successful design of machine systems, and elementary level for another engineering domains. Throughout creating of independent works, students should get know and fill steps through will get along in real machine systems design.			
The outcome of course Basic knowledge about machine design, machine systems development process and stadardization. Tolerances, limits, fits and press fits calculations. Feature tolerance prescribe. Knowledge about machine parts calculation in static and dynamic loads, forming machine parts on technology basics, rational design principles and of work capability condition amplification areas. Students will be qualified for independent solving of simple design tasks.			
Syllabus Theoretical study Introduction. Design development process. Standardization and design. Modular design. Tolerances, limits, fits and press fits calculations. Complex tolerances. Feature tolerances. Design strength calculation. Loads and stress of design parts. Calculation in static and dynamic loads. rational design principles and of work capability condition amplification. Concrete design solution analysis. Practical classes Solving of practical problems, instructions for homework and their verifying. Independent tasks from next areas: Complex tolerances. Temperature influence on fits. Press fits. Safety factor in dynamic loads. Welded join. Independent design of simple machine system			
Recommended reading 1.Jovicic S., Fundamentals of Design , Faculty of Mechanical Engineering, Kragujevac, 2002.			
The number of hours of active teaching:			Other classes:
Theory: 45	Practical classes: 30	Other forms of teaching:	Research study:0
Methods of teaching 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.			
Evaluation of knowledge			
Pre-final exam obligations	points	Final exam	points
Activities during the classes:	7	written exam	38
Practical classes:	25		
Colloquiums(s) :	30		
Seminar(s) :			