

Study program / course: Mechanical Engineering			
Type and level of study: Batchelor academic studies			
Course: Computer aided engineering			
Lecturers: Jovičić R. Gordana , Jovičić M. Nebojša, Despotović Z. Milan			
Status of course: Elective for modules M4 and M5, VI semester			
Number of ECTS: 6			
Precondition: Computer tools, Mechanics I, Engineering tools			
The objective of course: <ul style="list-style-type: none">- To introduce students with numerical experiments on the basic level,- To introduce students with potentials of using various approaches in computer aided engineering - CAE,- Getting skills for conducting numerical simulation for typical engineering problems by using commercial software.			
The outcome of course After finishing the course students will be able: <ul style="list-style-type: none">- To know capability of applying numerical simulation in engineering practice,- To be informed well with the state-of-the-art in CAE software,- To performed simple numerical simulation by using contemporary software,- To present the results of numerical simulation competently by using available multimedia tools.			
Syllabus Theoretical study <ul style="list-style-type: none">- Introduction. CAD/CAM/CAE. Review of software in CAE.- Capabilities of specialized software modules for kinematics simulation of mechanisms - CATIA DMU Kinematics. Module environment. Tools for simulation of mechanism motions. Kinematics analysis.- Review of typical numerical approach and methods in CAE. Finite element method.- Capabilities of specialized software modules for structural analysis - CATIA Analysis. Module environment.- Structural analysis – 2D shell elements in engineering problems. Practical classes Assignments in kinematics simulation and structural analysis.			
Recommended reading 1.Jovicic N, Computer Aided Design, electronic version of teaching materials, Faculty of Mechanical Engineering, University of Kragujevac, 2006. 2. Jovicic G, Introduction in Computer Aided Engineering, electronic version of teaching materials, Faculty of Mechanical Engineering, University of Kragujevac, 2007.			
The number of hours of active teaching:			Other classes: 1
Theory: 2	Practical classes: 1.6	Other forms of teaching: 0.4	
Methods of teaching			
Evaluation of knowledge			
Pre-final exam obligations	Points	Final exam	points
Activities during the classes:	10		10
Practical classes:			0
Colloquiums(s) :	30	40	70
Seminar(s) :	20		20