

Study program / course: Mechanical Engineering				
Type and level of study: Bachelor academic studies				
Course: Design and calculation of motor vehicles				
Lecturers: Radonjić R. Rajko, Janković S. Aleksandra				
Status of course: Obligatory for module M₃, VI semester				
Number of ECTS:6				
Precondition: none				
The objective of course Basic objective of course is introduction and education of students in domain of vehicle's design, functional characteristics of assemblies and systems, applying basic methods of calculation, demands that has been placed in front of vehicle's design in phases of development, production, operation and recycling.				
The outcome of course Students should know, based on obtained knowledge, how to identify and evaluate construction's characteristics of vehicle and to estimate future characteristics in aspects of performance, life-time and behavior toward to environment.				
Syllabus <i>Theoretical study</i> Vehicle's operation conditions and loading regimes, classification's parameters and categorization of vehicles, mechanical structures, function, conceptions of construction, construction's analysis and basic calculations of: power transmission systems-main clutch, transmission-gearbox, joint assemblies, finale drive transmission (final drive, differentials, drive axles, wheels); brake systems, steering systems, suspension systems, vehicle body, wheels and tracks. Modeling and simulation of assemblies' function and vehicle's systems, interactive simulation procedures, software, practical application.				
Practical classes <i>Auditory exercises:</i> Analysis of design solutions of elements, assemblies and vehicle's systems structures, using calculation methods of operation processes, stress field and driving regimes, solving different problems by individually and team work, making seminar papers, using modern software for design and calculation.				
Recommended reading 1. Janićijević N., Janković D., Todorović J.: Konstrukcija motornih vozila, Mašinski fakultet, Beograd, 1987. 2. Radonjić R.: Konstrukcija i proračun motornih vozila, Skripta u pripremi, 2008., Mašinski fakultet, Kragujevac 3. Simić D., Radonjić R., Kelić V.: Motorna vozila-Hidroprenosnici u transmisijama motornih vozila, Mašinski fakultet, Kragujevac, 1976. 4. Simić D., Radonjić R.: Motorna vozila-zbirka zadataka, Naučna knjiga, Beograd 5. Radonjić R., Glišović J.: Zbirka zadataka iz Konstrukcije i proračuna motornih vozila, Mašinski fakultet, Kragujevac, u pripremi, 2008.				
Supplemental reading 1. Simić D.: Motorna vozila, Naučna knjiga, Beograd, 1988. 2. Simić D., Radonjić R.: Motorna vozila-zbirka zadataka, Naučna knjiga, Beograd, 1990.				
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 : Lectures, auditory exercises, laboratory exercises				
Evaluation of knowledge				
Pre-final exam obligations	points	Final exam	points	
Activities during the classes:	10	oral exam	30	
Practical classes:	20			
Colloquiums(s) :	20+20			
Seminar(s) :				