

| | | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|------------------------------|------------------|----------------|
| Study program / course: Mechanical Engineering | | | | |
| Type and level of study: Master's degree | | | | |
| Course: Structure and design of motor vehicles | | | | |
| Lecturers: Radonjić R. Rajko | | | | |
| Status of course: Obligatory for module M₃, II semester | | | | |
| Number of ECTS:6 | | | | |
| Precondition: none | | | | |
| The objective of course | | | | |
| Basic objective of course is obtainment of necessary knowledge in domain of understanding structure and design of vehicles, functional characteristics of assemblies and systems, demands that has been placed in front of vehicle's design in all phases of his life cycle and applying modern software in this area. | | | | |
| The outcome of course is ability of students to: | | | | |
| Students will be qualified to identify different design solutions of modern vehicle's assemblies and systems, how to recognize functional connections between applied assemblies and base on that how to estimate successfulness of final product from aspect of performances, price-quality ratio, influence on human and nature. | | | | |
| Syllabus | | | | |
| <i>Theoretical study</i> | | | | |
| Conception of construction of modern road vehicles. Structural and functional analysis of vehicle's parts, assemblies and systems: 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 of vehicles' assemblies and systems by applying modern softwares, simulation of functional connections between assemblies and interaction between human-vehicle and environment in virtual reality. | | | | |
| <i>Practical Studies</i> | | | | |
| <i>Auditory exercises:</i> Independently making and discussion of seminar papers and introducing with distinctive solutions of vehicle's assemblies, applying software in field of vehicle's design. Within research work students will learn how to perform basic investigations in this area. | | | | |
| Recommended reading | | | | |
| <ol style="list-style-type: none"> 1. Janićijević N., Janković D., Todorović J.: Konstrukcija motornih vozila, Mašinski fakultet, Beograd, 1987. 2. Radonjić R.: Struktura i konstrukcija 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. | | | | |
| The number of hours of active teaching: | | | | Other classes: |
| Theory: 2 | Practical classes: 1.6 | Other forms of teaching: 0.4 | Research study:0 | 1 |
| Methods of teaching | | | | |
| Lectures will be done with usage of multimedia tools wherewith will be archived active participation of students. | | | | |
| During auditory exercises students will be introduced with software in field of vehicle design, making and discussion of seminar papers. | | | | |
| Knowledge testing will be done by one independently done seminar paper and two colloquiums. | | | | |
| Verbal finishing exam is anticipated. | | | | |
| Evaluation of knowledge | | | | |
| Pre-final exam obligations | points | Final exam | points | |
| Activities during the classes: | 10 | oral examination | 30 | |
| Practical classes: | 20 | | | |
| Colloquiums(s) : | 20+20 | | | |
| Seminar(s) : | | | | |