

<b>Study program / course:</b> Mechanical Engineering			
<b>Type and level of study:</b> Master academic studies			
<b>Course:</b> MAINTENANCE OF MOTOR VEHICLES AND ENGINES 2			
<b>Lecturers:</b> Krstic V. Bozidar			
<b>Status of course:</b> Elective for modules M <sub>3</sub> and M <sub>8</sub> , III semester			
<b>Number of ECTS:</b> 6			
<b>Precondition:</b> none			
<b>The objective of course</b> Make students closer themes such as: Modeling and optimization maintenance system for motor vehicles and engines; Flexible service systems and OBD; Motor vehicles and motor diagnostics; Objects for motor vehicles and engine maintenance			
<b>The outcome of course</b> Knowledge which they can use for motor vehicles and engine maintenance, in one of these domains: Modeling system for motor vehicles and engine maintenance; Motor vehicles and engine diagnostics; Flexible service systems and OBD; Objects for motor vehicles and engine maintenance.			
<b>Syllabus</b>			
<b>Theoretical study</b>			
1. Primary concept and definitions, subject and goal.			
3. Modeling system for motor vehicles and engine maintenance			
4. System optimization for motor vehicles and engine maintenance			
5. Motor vehicles and engine diagnostics ( Diagnosis of condition motor vehicles and engines-definitions, types, periodicity; Diagnostic elements for motor vehicles and engines; Diagnostic systems for motor vehicles and engines; Phase in diagnostic process of motor vehicles and engines; Diagnostic parameters for motor vehicles and engines; Selection and rating diagnostic parameters for motor vehicles and engines and calculating characteristic of their changes; Selecting normatives of diagnostic parameters; Diagnostic algorithms and diagnostic maps of motor vehicles and engines; Diagnostic methods which can be used for getting technical shape of motor vehicles and engines; Forecast method of working hours based on got diagnosis; Diagnostic condition of vital parts motor vehicles and engines; Organization of diagnostic accomplish; Diagnostic automation of motor vehicles and engines; Self-diagnostics systems for getting technical condition of motor vehicles; Faults which can occur during getting technical condition of motor vehicles; Diagnostic of motor vehicles and engines and its importance for satisfying laws and other government issues)			
6. Flexible service systems and OBD (Making "knowledge bases" for getting picture of technical condition motor vehicles; Reason for using flexible service systems on vehicles and importance of data base and "knowledge base" from aspect of getting technical condition of motor vehicles, Giving definition for periodical maintenance, getting low maintenance costs and better effectiveness of motor vehicles in total; OBD – essence and important of its using)			
7. Objects for maintenance motor vehicles and engines (Types, characteristics and purpose; Elements of technologic calculates objects for motor vehicles and engine maintenance – expect number of vehicles, number of open jobs, working size in maintenance objects, needful surface of maintenance object, working rhythm and middle maintenance time; Needful equipment in maintenance objects motor vehicles; Organizational and technical characteristics of maintenance objects; Calculate number of open jobs, needful surfaces and choose of maintenance equipment; Technical documentation for reconstruction maintenance objects of motor vehicles and engines- general project, imagine project, major project, performer project and finished project; Car-services for motor vehicles and engine maintenance; Specialized department for motor vehicles and engine maintenance)			
8. Car-bases			
<b>Practical classes</b>			
Student has commitment to be present on practical part of subject and to finish one homework.			
<b>Recommended reading</b>			
1. B. Krstic: Serviceability of motor vehicles and engines, Faculty of Mechanical Engineering, Kragujevac, 1997.			
2. B. Krstic, D. Mladjan: Safety of using vehicles for carrying dangerous goods by road, University of Mechanical Engineering, Kragujevac, 2007.			
3. B. Krstic: Hydrodynamic idler of power for motor vehicles aggregate, monograph, Faculty of Mechanical Engineering, Kragujevac, 2003.			
<b>The number of hours of active teaching:</b>			<b>Other classes:</b>
Theory: 3	Practical classes: 1.4	Other forms of teaching: 0.6	Research study: 0
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<b>Methods of teaching</b>			
Course consist two parts: theoretical and practical. Getting marks is very easy: all the student has to do is to past two tests during semester and one written work, so called in Serbia, "seminars work". Base on that, student can get min 30points and max 70points. The final, speak test, is obligate. There is another way of getting mark; et the end of the semester, student can show his knowledge on the written and speak test, in front of professor.			
<b>Evaluation of knowledge</b>			
<b>Pre-final exam obligations</b>	<b>points</b>	<b>Final exam</b>	<b>points</b>
Activities during the classes:	5	oral exam	30
Tests:	45		
Seminar(s) :	20		