

Study program / course: Mechanical Engineering				
Type and level of study: Master academic studies				
Course: Experiment in Mechanical Engineering				
Lecturers: Rajko R. Radonjic, Branislav M. Jeremic, Danica D. Josifovic				
Status of course: Obligatory, joint for all modules, II semester				
Number of ECTS: 6				
Precondition: none				
The objective of course Introducing the students with basic principles of conducting the experiment and application of modern measuring and testing equipment.				
The outcome of course Mastering the theory and technique of experimentation in mechanical engineering. Individual conducting of experiment.				
Syllabus Theoretical study Theory and planning of engineering experiment. Design of experiment. Structure and types of experimental systems. Laboratory and terrain conditions for conduction of experiment. Experiment in real environment. Model testing and theory of similarity. Reliability and safety of measuring system. Multivariable measuring systems. The role of experiment in product development. Processing of measurement data. Classes and types of instruments. Static and dynamic characteristics and instrument calibration. Instrumentation errors. Elimination of unwanted outcomes during experiments. Sensor technology. Application of commercial software packages.				
Practical classes Study research work consists of individual student research and a seminar.				
Recommended reading <ol style="list-style-type: none"> 1. Josifovic, D.: Testing of mechanical constructions I, (in Serbian), Faculty of Mechanical Engineering from Kragujevac, Kragujevac, 2000 2. Script in printed and electronic form (in Serbian), (R. Radonjic, B. Jeremic, D. Josifovic) 3. Morris A.: Measurement and instrumentation principles, Ed. B./H., Oxford, 2001 4. Osita N., Yildirim H.: The mechanical systems design handbook, (Modeling, measurement and control), Ed. CRC PRESS, London, 2002 5. Holman J. P.: Experimental methods for engineers, McGraw-Hill, New York, 1989 				
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 Teaching consists of lectures, verbal and laboratory exercises and study research work. Attendance of lectures and exercises is obligatory (more than 70%). Student activities are rated during semester.				
Evaluation of knowledge				
Pre-final exam obligations	points	Final exam	points	
Activities during the classes:	10	verbal exam	30	
Practical classes:	10			
Colloquiums(s) :	30			
Seminar(s) :	20			