

<b>Study program:</b> Mechanical engineering			
<b>Type and level of studies:</b> Doctoral studies			
<b>Course unit:</b> Experimental Analysis of Mechanical Structures			
<b>Teacher in charge:</b> prof. dr. Dragan Petrović			
<b>Language of instruction:</b> English			
<b>ECTS:</b> 5			
<b>Prerequisites:</b> None			
<b>Semester:</b> Autumn			
<b>Course unit objective:</b>			
Gaining of higher level of knowledge in the field of experimental analysis of mechanical structures.			
<b>Learning outcomes of the course unit:</b>			
Systematization and adoption of knowledge, as well as training for solving the complex engineering problems in the field of experimental analysis of mechanical structures.			
<b>Course unit contents</b>			
<i>Theoretical classes</i>			
Types of mechanical structures. Classification of mechanical structures. Problems of design and development of mechanical structures. Regulations and standards. Basic concepts of measurement and experimental analysis. Identification of problem and planning of experimental analysis. Measuring quantities. Measuring equipment and devices for the implementation of experimental analysis. Development and design of special types of converters for experimental analysis. Calibration of converters. Tensiometry. Experimental analysis of static characteristics of mechanical structures. Experimental analysis of dynamic characteristics of mechanical structures. Experimental analysis of the reliability and lifetime of mechanical structures.			
<i>Practical classes</i>			
Specific examples of experimental tests of mechanical structures. Introduction and laboratory work with measuring equipment and instruments.			
<b>Literature</b>			
G.S. Sawhney, Mechanical Experiments and Workshop Practice, I.K. International Publishing House Pvt. Ltd, New Delhi, 2009.			
R.S. Sirohi, H.C Radha Krishna, Mechanical Measurements, New Age International (P) Ltd, New Delhi, 2004.			
<b>Number of active teaching hours</b>			<b>Other classes</b>
Lectures:	Practice:	Other forms of classes:	Independent work:
3			
<b>Teaching methods</b>			
Theoretical classes. Introduction with the specific problems of the experimental analysis of mechanical structures and ways of solving them. Seminar on a given topic.			
<b>Examination methods ( maximum 100 points)</b>			
<b>Exam prerequisites</b>	<b>No. of points:</b>	<b>Final exam</b>	<b>No. of points:</b>
Student's activity during lectures		oral examination	50
practical classes/tests		written examination	
Seminars/homework	50	.....	
Project			
Other			
<b>Grading system</b>			
<b>Grade</b>	<b>No. of points</b>	<b>Description</b>	
<b>10</b>	<b>91-100</b>	Excellent	
<b>9</b>	<b>81-90</b>	Exceptionally good	
<b>8</b>	<b>71-80</b>	Very good	
<b>7</b>	<b>61-70</b>	Good	
<b>6</b>	<b>51-60</b>	Passing	
<b>5</b>	<b>Less than 50</b>	Failing	