

<b>Study programmes:</b> PhD studies – Mathematics-Probability and Statistics				
<b>Course name:</b> Reliability Theory				
<b>Lecturers:</b> Slobodanka S. Janković				
<b>Status:</b> Optional				
<b>ECTS:</b> 9				
<b>Attendance prerequisites:</b> Mathematical Statistics				
<b>Course aims:</b> Getting the student familiar with results of the reliability theory and its importance in applications.				
<b>Course outcome:</b> The student has knowledge in field of reliability theory, necessary for the application of this theory and for scientific research in this field.				
<b>Course content:</b> Basic concepts of reliability theory. Reliability of a unit functioning until first failure. Reliability of a renewable unit. System reliability. Estimation of reliability factors from experimental data. Estimation of the parameter of the exponential distribution. Confidence interval for the parameter of the exponential distribution. Multi-parameter case. Testing hypotheses on reliability. Testing hypotheses on the exponentiality of the distribution of failure-free operation time. Criteria for testing hypotheses on the values of the parameter. Sequential analysis. Nonparametric methods of estimation homogeneity of statistical data. Statistical methods of quality control and reliability of mass production.				
<b>Literature:</b> Б.В. Гнеденко, Ю.К. Беляев, А.Д. Соловьев: <i>Математические методы в теории надежности</i> , Наука, Москва, 1965.				
<b>Number of hours:</b> 10	<b>Lectures:</b> 4	<b>Tutorials:</b> -	<b>Laboratory:</b> -	<b>Research:</b> 6
<b>Teaching and learning methods:</b> Group or individual.				
<b>Assessment (maximal 100 points)</b>				
<b>Course assignments</b>	<b>points</b>	<b>Final exam</b>		<b>points</b>
Homework	20	Written exam		
Exercises / Tutorials		Oral exam		60
Colloquia		Written-oral exam		
Essay / Project	20			