

<b>Name:</b> <b>Probability Theory and Mathematical Statistics</b>		<b>NEPTUN-code:</b> NMXVS1EBNE	<b>Number of periods/week:</b> full-time: 2 lec + 2 sem + 0 lab
<b>Credit:</b> 5 <b>Requirement:</b> exam	<b>Prerequisite:</b> NMXDM2EBNE Discrete Mathematics and Linear Algebra II NMXAN2EBNE Calculus II		
<b>Responsible:</b> Péter KÁRÁSZ, Ph.D.	<b>Position:</b> associate professor	<b>Faculty and Institute name:</b> John von Neumann Faculty of Informatics Institute of Applied Mathematics	
<b>Way of assessment:</b> - mid-term tests and written or oral examination			
<b>Competences</b>			
<b>Course description:</b>			
The aim of the course is to get acquainted with concepts and methods of probability theory and statistics, and to acquire the ability to apply them. The scope of the course is: probability theory, statistics and inference. Classical and geometrical probability spaces. Conditional probability. Independent events. Random variables and their characteristics. Specific probability distributions. Functions of random variables. Laws of large numbers, central limit theorem. Concepts and elements of (mathematical) statistics. Confidence intervals. Methods of hypothesis testing. Hypothesis testing of large samples. Hypotheses of the normal distribution. Non-parametric tests. Analysis of variance. Elements of correlation and regression analysis.			
<b>Literature</b>			
Edited by: Zs. Lukács Dr. Sréterné: Mathematical Tasks Collections, BMF KKVFK, 2000 (in Hungarian) Mathematical Tasks, edited by Scharnitzky V., Tankönyvkiadó, 2002 (in Hungarian) J. Reimann, J. Tóth: Probability and Mathematical Statistics, Tankönyvkiadó, 2008 (in Hungarian)			