

Study programme(s): Applied Mathematics (MAP)			
Course title: STATISTICS (P502)			
Lecturer(s): Zagorka Lozanov Crvenković			
Course Status: compulsory			
ECTS points: 6			
Requirements:			
Learning Objectives			
Students will be familiar with the basic notions of statistics, parameter estimations and statistical tests, as well as broad possibilities of their application in practice.			
Learning Outcomes			
Students will master the basic notions of mathematical statistics and will be able to solve practical problems in economy and science using statistical software.			
Syllabus			
<i>Theoretical instructions</i>			
Population, sample, sampling methods. Descriptive statistics. Statistics and their distributions. Parameter estimation methods: point estimations and interval estimations. Properties of estimators: unbiasedness, stability and consistency. Likelihood function. Statistical hypotheses, null hypothesis and alternative hypothesis. Statistical hypothesis testing. Errors of type I and II. Power analysis.			
<i>Practical instructions</i>			
Exercises and problems in practical teaching follow the content of theoretical instructions. Practical examples and implementation of solutions in statistical software.			
Literature			
1. Zagorka Lozanov-Crvenković, Statistika , PMF, Novi Sad, 2012.			
2. Z. Lozanov-Crvenković, D. Rajter, Zbirka rešenih zadataka iz verovatnoće i statistike , PMF, Novi Sad, 1999.			
3. D. Seleši, Rešeni ispitni zadaci iz verovatnoće i statistike za studente informatike , PMF, Novi Sad, 2013.			
4. J. P. Marques de Sa, Applied Statistics Using SPSS, STATISTICA, MATLAB and R , Springer, 2007.			
Number of active classes		Lectures: 2	Exercises: 3
Teaching methods			
Classic teaching methods are used in lectures, using computers as an auxiliary means of illustration of the content that is taught. During practical teaching students, in addition to solving exercises that follow the theoretical instructions, use computer software for problem solving. Statistical software packages such as <i>R Studio</i> , <i>Statistica</i> , etc. are used.			
Grading (maximum number of points 100)			
Pre-exam obligations		Points	Final exam
colloquia		50	Points
		oral exam	50