

Study Program: Mathematics			
Type and level of studies: Bachelor studies, IV semester			
Course name: Introduction to Probability Theory			
Lecturer: Vladica S. Stojanović			
Status: Compulsory			
ECTS: 6			
Attendance Prerequisites: none			
Course aims Acquiring the knowledge necessary to understand the mathematical model of chance and basic principles and regularities in its study.			
Course outcome Operational use of the methodology of random events and random variables in solving various problems, as its everyday application.			
Course content <i>Theoretical part:</i> 1. EVENTS AND PROBABILITIES (the concept of statistical experiment and random events, field of events, concept and properties of probability, conditional probabilities, total probability formula, Bayesian formula, independence of events) 2. RANDOM VARIABLES (the notion of random variable and its distribution, distribution function, discrete and continuous random variables, random vectors, independence of random variables, numerical characteristics of random variables, characteristic functions) 3. BOUNDARY THEOREMS OF PROBABILITY THEORY (series of random variables, types of convergences, weak and strong laws of large numbers, central limit theorem) 4. RANDOM PROCESSES AND TIME SERIES (notion of random processes, distribution of random processes, stationarity, examples of stationary processes, continuity of random processes, Markov chains) <i>Practical part: exercises, other forms of teaching, student research work</i> Solving problems related to the aforementioned fields.			
Literature 1. Аранђеловић И., Митровић З., Стојановић В.: <i>Вероватноћа и статистика</i> , Завод за уџбенике, Београд, 2011. 2. Бањевић Д., Видаковић Б.: <i>Вероватноћа и статистика - збирка решених задатака</i> , Научна књига, Београд, 1989.			
Number of active classes			Other classes
Lectures: 2	Practical classes: 2		
Teaching methods Lectures, consultations, term tests, homework.			
Assessment (maximum 100 points)			
Course assignments	points	Final exam	points
activity during lectures	10	written exam	-
practical classes	10	oral exam	40
term test(s)	40	
seminar(s)			
Total	60		40