

<b>Study programme(s):</b> Mathematics (M3)			
<b>Level:</b> bachelor			
<b>Course title:</b> Probability (M3-12)			
<b>Lecturer:</b> Danijela Z. Rajter-Ćirić			
<b>Status:</b> obligatory			
<b>ECTS:</b> 7			
<b>Requirements:</b> passed exams in courses: <i>Analysis 2</i>			
<b>Learning objectives</b> Becoming familiar with the basic concepts of probability theory.			
<b>Learning outcomes</b> Students should possess the basic knowledge in the area and get the ability to apply it in other subjects and areas.			
<b>Syllabus</b> <i>Theoretical instruction</i> Random events, algebra of events. Definition of probability, properties of probability. Conditional probability, independent events. Borel-Cantelli lemmas. Total probability formula, Bayes formula. Random variables, discrete and absolutely continuous types. Moivre-Laplace theorem. Some basic distributions. N-dimensional random variables, marginal distributions. Independency of random variables, conditional distributions. Transformations of random variables. Expectation and dispersion of random variables, properties of expectation and dispersion. Characteristic functions, Limit theorems. <i>Practical instruction</i> Problem solving sessions.			
<b>Literature</b> <ol style="list-style-type: none"> <li>1. D. Rajter-Ćirić, <i>Probability</i>, the second edition, Faculty of Science, Novi Sad, 2009. (in Serbian)</li> <li>2. Z. Ivković, <i>Probability theory and mathematical statistics</i>, Gradjevinska knjiga, Belgrade, 1982.</li> <li>3. Z. Lozanov-Crvenković, D. Rajter, <i>Solved problems in probability and statistics</i>, of Science, Novi Sad, 1999. (in Serbian).</li> <li>4. M. Merkle, P. Vasić, <i>Probability and statistics</i>, Faculty of Electrical Engineering, Belgrade, 1998.</li> </ol>			
<b>Weekly teaching load</b>			Other: 0
Lectures: 3	Exercise: 3	Other forms of teaching: 0	Student research: 0
<b>Teaching methodology</b> Lectures are presented using classical teaching methods. Exercises are used to practise and analyse typical problems and their solutions. The ability of application of theoretical knowledge is checked through independent solving of exercises on two colloquia. The final exam is oral and a student is expected to demonstrate general understanding of the presented theoretical material.			
<b>Grading (maximum number of points 100)</b>			
<b>Pre-exam obligations</b>	<b>points</b>	<b>Final exam</b>	<b>points</b>
Colloquia	50	Oral exam	50