<table>
<tr><td>COURSE NAME</td><td colspan="5">INTRODUCTION OF PROBABILITY</td></tr>
<tr><td>Code</td><td>PMM716</td><td>Year of study</td><td colspan="3">3rd yr undergraduate study</td></tr>
<tr><td>Course teacher</td><td>Snježana Braić</td><td>Credits (ECTS)</td><td colspan="3">8,0</td></tr>
<tr><td rowspan="2">Associate teachers</td><td rowspan="2"></td><td rowspan="2">Type of instruction (number of hours)</td><td>L</td><td>S</td><td>E</td></tr>
<tr><td>45</td><td></td><td>45</td></tr>
<tr><td>Status of the course</td><td>Compulsory course</td><td>Percentage of application of e-learning</td><td colspan="3">30%</td></tr>
<tr><td colspan="6">COURSE DESCRIPTION</td></tr>
<tr><td>Course objectives</td><td colspan="5">Main course objective is to get students acquainted with basic ideas, results and methods of probability theory and mathematical statistics. Students will:
- be introduced to concepts of probability space and analyse its properties
- learn basic examples of probability spaces
- acquire basic knowledges about conditional probability and analyse its properties
- acquire basic knowledges about random variables and their probability density and distribution functions
- learn Chebyshev inequality, law of large numbers and central limit theorem
- learn to compute numerical characteristics of random variables
- be introduced with the basics of mathematical statistics</td></tr>
<tr><td>Course enrolment requirements and entry competences required for the course</td><td colspan="5">Course enrolment:
- successfully completed course Differential and integral calculus I
- successfully completed course Combinatorial and Discrete Mathematics
- taken course Differential and integral calculus II</td></tr>
<tr><td>Learning outcomes expected at the level of the course (4 to 10 learning outcomes)</td><td colspan="5">Upon successful completion of this course students will be able to:
- define probability space and discribe its properties
- describe basic examples of probability spaces
- distinguish and discribe probabilitiy models
- define conditional probability and analyse its properties
- apply probability properties and combinatorial methods in solving probability problems
- define descrete and continuous random variables and their probability density and distribution functions
- define, compute and analyse numerical characteristics of discrete random variables
- state, proove and apply theorems of probability theory
- define random sample and statistics, describe estimators and calculate confidence intervals</td></tr>
<tr><td></td><td colspan="5"></td></tr>
<tr><td>Course content broken down in detail by weekly class schedule (syllabus)</td><td colspan="5">- Sample space, probability space (3)
- Discrete probability space- definition and properties (3)
- Conditional probability, independent events (4)
- Bernoulli trials (2)
- Discrete random variables and their distribution (3)
- Density function and disribution function of discrete random variable (3)
- Numerical characteristics of discrete random variables (6)
- Chebyshev inequality, law of large numbers and central limit theorem (3)
- Random vectors, probability generating functions (4)
- Measure spaces (2)
- Continuous random variables, density function and disribution function (4)</td></tr>
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	- Mathematical expectation and variance of continuous random variables (3) - Random sample, statistics, estimators and confidence intervals (5)
Format of instruction	Lectures, exercises.
Student responsibilities	Attendance.
Screening student work *(name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course)*	Attendance – 2 ECTS Colloquium – 3 ECTS Oral exam – 3 ECTS
Grading and evaluating student work in class and at the final exam	The exam which requires solving practical and theoretical problems is taken in written form and is followed by an oral theoretical exam. A passed written exam is a prerequisite for the oral exam. The written exam can be taken partialy, in three parts, during class.
Required literature (available in the library and via other media)	1. S. Braić, V. Gotovac, I. Ugrina, *Uvod u vjerojatnost i statistiku*, textbook PMF-a u Splitu 2. N. Sarapa, *Teorija vjerojatnosti*, Školska knjiga, Zagreb, 2002.. 3. N. Sarapa, *Vjerojatnost i statistika I i II*, Školska knjiga, Zagreb, 1993..
Optional literature (at the time of submission of study programme proposal)	1. W. Feller, *An Introduction to Probability Theory and Its Application,* J.Wiley, New York, 1966. 2. I. Sošić, *Primijenjena statistika*, Školska knjiga, Zagreb, 2004. 3. T. Pogany, *Teorija vjerojatnosti, zbirka riješenih ispitnih zadataka*, Sveučilište u Rijeci, Odjel za pomorstvo, Rijeka, 1999. 4. M. Spiegel, J. Schiller, R. A. Srinivasan, *Probability and Statistics, Schaum's outline series*, McGraw-Hill Book Company, New York, 2000.
Quality assurance methods that ensure the acquisition of exit competences	Statistics of test results and student evaluation via anonymous questionnaires at the end of the course. The survey is conducted according to the rules of the University of Split.
Other (as the proposer wishes to add)	