

### DESCRIPTION OF A STUDY COURSE – SYLLABUS

<b>Title of a course</b>	Probability Theory and Statistics				
<b>Head of course</b>	PhD Sanja Raspor Janković, Senior Lecturer				
<b>Study programme</b>	Professional undergraduate study Information Science				
<b>Status of a course</b>	Obligatory				
<b>Year of study</b>	1	<b>Semester</b>	I	<b>ECTS credits</b>	5
<b>Teaching plan (L + E + S+ Pr)</b>	2L+2E				
<b>Goals of a course</b>					
Acquire the theoretical and practical knowledge required to perform statistical data analysis and to interpret the results obtained.					
<b>Conditions for enrolling course</b>					
No conditions					
<b>Learning outcomes on a level of a study programme which includes course</b>					
Outcome 9: Apply economic and accounting principles in the development of business information systems. Outcome 11: Apply mathematical and statistical methods in information science. Outcome 12: Apply engineering methods and principles in information science. Outcome 15: Independently present professional content in written and spoken form in Croatian and English.					
<b>Expected learning outcomes on a level of a course</b>					
<ol style="list-style-type: none"> <li>1. Determine the characteristics of observed phenomena using descriptive statistics methods.</li> <li>2. Distinguish the basic principles of combinatory and probability on a concrete example.</li> <li>3. Determine the characteristics of the observed phenomena on the basis of calculated indicators of inferential statistics.</li> <li>4. Determine correlation and regression between observed variables.</li> <li>5. Analyse the movement of an observed phenomenon over a period of time.</li> <li>6. Conduct a statistical analysis of the collected data and interpret the obtained results</li> </ol>					
<b>Content of a course</b>					
Introduction with descriptive statistical analysis. Basic terms. Statistical data. Sorting data. Tabulating. Statistical graphics. Relative numbers. Analysis of numerical progression using the methods of descriptive statistics. Mean values. Dispersion, asymmetry measures. Basics of inferential statistics. Combinatorial skills. Basic concepts of probability. Definitions of probability. Law on large numbers. Converse probability. Total probability. Complex probability. Adding and multiplying of probability. Bayes' formula. Random variable and distribution of probability. Models of probability distribution of discrete and continual random variable. Sample methods. Parameters evaluation. Hypothesis testing. Regression and correlation analysis. The notion of regression and correlation analysis. Basic analysis of time progression. Definition of time progression. Group indexes. Trend models.					
<b>Teaching modes</b>	<input checked="" type="checkbox"/> lectures <input type="checkbox"/> auditory exercises <input checked="" type="checkbox"/> seminars and workshops <input type="checkbox"/> distance learning <input type="checkbox"/> field classes		<input checked="" type="checkbox"/> individual assignments <input type="checkbox"/> multimedia and network <input type="checkbox"/> laboratory <input type="checkbox"/> supervisor's work <input type="checkbox"/> other _____		
<b>Comments</b>					
<b>Students' obligations</b>					
Prerequisite for taking the full exam: follow the instructions of the teacher to collect and analyze the collected data on the selected topic (Outcome 6)					
<b>Grading, evaluation and monitoring of students' work continuously during lectures and exams</b>					

Grading is based upon evaluation of course's learning outcomes' adoption. Grading is performed continuously during lectures and/or during exam, in compliance with the provisions of Regulation on the assessment of students.

#### Continuous check-up:

Outcomes	Pre-exam I	Pre-exam 2	Test	Home assignment	Threshold	Max
Outcome 1	25 %		7 %		16 %	32 %
Outcome 2		13 %	3 %		8 %	16 %
Outcome 3		10 %			5 %	10 %
Outcome 4		13 %	3 %		8 %	16 %
Outcome 5		13 %	3 %		8 %	16 %
Outcome 6				10 %	5 %	10 %
Percentage of ECTS	1	2,5	1	0,5		5
Total	25 %	49 %	16 %	10 %	50 %	100 %

A student has passed the exam if he has acquired a percentage of credits for each learning outcome higher or equal to defined threshold.

#### Exam term:

Outcomes	Written exam	Oral exam	Max
Outcome 1	32 %		32 %
Outcome 2	16 %		16 %
Outcome 3	10 %		10 %
Outcome 4	16 %		16 %
Outcome 5	16 %		16 %
Outcome 6	6 %	4 %	10 %
Percentage of ECTS	4,8	0,2	5
Total	96 %	4 %	100 %

A student has passed the exam if he has acquired a percentage of credits for each learning outcome higher or equal to defined threshold.

#### Grading:

A student has passed the exam if he has acquired at least 50% of anticipated credits of a specific learning outcome.

If a student has passed learning outcomes of all courses, the accomplished credits (percentages) of all passed learning outcomes are being added, while the final grade is defined upon following table:

Range of credits (percentages)	Numerical grade	ECTS grade
90,00 – 100,00	Excellent (5)	A
75,00 – 89,99	Very good (4)	B
60,00 – 74,99	Good (3)	C
50,00 – 59,99	Sufficient (2)	D
0,00 – 49,99	Insufficient (1)	F

#### Obligatory literature

1. Marković, S., Raspor, S., Statistika, priručnik, Veleučilište u Rijeci, Rijeka, 2008.
2. Štambuk, Lj., Devčić, K., Statistika – priručnik i zbirka zadataka, Veleučilište Nikola Tesla u Gospiću, Gospić, 2010.

<b>Additional literature</b>
1. Šošić, I., Primijenjena statistika, Školska knjiga, Zagreb, 2006. 2. Horvat, J., Mijoč, J., Osnove statistike, Naklada Ljevak, Zagreb, 2012.

