

COURSE NAME		STATISTICS			
Code	PMM861	Year of study	1st year of undergraduate study		
Course teacher	TANJA VUČIČIĆ	Credits (ECTS)	4		
Associate teachers		Type of instruction (number of hours)	L	S	E
			30		15
Status of the course	COMPULSORY	Percentage of application of e-learning	60%		
COURSE DESCRIPTION					
Course objectives	Ensure that, through selected topics, students acquire knowledge of basic notions, concepts and methods in statistics on the level that is satisfactory for everyday use and for understanding the application of statistics in undergraduate and graduate courses on a life science curriculum. The emphasis is on understanding, appropriate interpretation of data, and on performing a simple statistical analysis. The selected elements of statistical inference form a basis for further comprehension and application of more sophisticated statistical procedures. Students are instructed on how to use one statistical software package ("R", at present).				
Course enrolment requirements and entry competences required for the course	Elementary knowledge of calculus and operations with sets.				
Learning outcomes expected at the level of the course (4 to 10 learning outcomes)	<p>Upon successful completion of the course student should be able to</p> <ol style="list-style-type: none"> 1) carry out a simple statistical data analysis; 2) interpret the output of a simple statistical data analysis; 3) recognize and apply the most frequently used discrete and continuous probability distributions; 4) estimate different level confidence intervals of a population parameter; 5) comprehend the idea of statistical testing; 6) apply a few well-known statistical tests. 				
Course content broken down in detail by weekly class schedule (syllabus)	<ol style="list-style-type: none"> 1. Introduction. Descriptive statistics: graphical visualising of data, measuring center, spread, location and shape. (8 hours) 2. Sample space, classical and statistical definition of probability, probability space. Combinatorial rules. (3 hours) 3. Conditional probability, independent events and Bayes' rule. (2 hours) 4. Discrete random variable, probability distribution and (cumulative) distribution function; parameters. Bernoulli, binomial, (hyper)geometric and Poisson random variable. (4 hours) 5. Continuous random variable, probability density function and (cumulative) distribution function; parameters. Uniform, exponential, chi-square, normal and (Student's) <i>t</i>-distribution. Central limit theorem. (4 hours) 6. Two-dimensional random variable. Linear regression and correlation. (3 hours) 7. Estimation of parameters, confidence intervals. (2 hours) 8. Statistical testing a hypothesis. Parametric and non-parametric tests. (4 hours) 				
Format of instruction	Lectures, individually assigned homework and classroom exercises using statistical software package, at present that being "R".				

Student responsibilities	Attending lectures and exercises and taking exams.		
Screening student work (<i>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</i>)	Attending classes: 1,2 ECTS 2 written partial tests: 1,4 ECTS Final exam (written): 1,4 ECTS		
Grading and evaluating student work in class and at the final exam	Monitoring and grading students' achievements lasts throughout the semester. Students are assigned homework individually. The exam comprises two partial written tests and a final written test. So as to pass the exam, the summarized score should be at least 50%. Students whose summarized score is less than 50% are admitted to take a "classical" exam in two autumn exam terms. Such an exam consists of a written and an oral part, both equally weighted in the final grade. Passing written test (score $\geq 50\%$) is a necessary condition for taking up an oral exam.		
Required literature (available in the library and via other media)	Title	No. of copies in the library	Availability through other media
	Lecture notes in the form of slides (T. Vučićić)		Pdf file on the Moodle platform
	Lecture notes in the form of a book (A. Vukelić, Faculty of Food Technology and Biotechnology)		Pdf file on the Moodle platform
Optional literature (at the time of submission of study programme proposal)	<ol style="list-style-type: none"> 1) N. Koceić Bilan, <i>Primijenjena statistika</i>, skripta, PMF Split, 2012. 2) D.S. Moore, G.P. McCabe, B.A. Craig, <i>Introduction to the Practice of Statistics</i>, 6th edition, W. H. Freeman and Co., N.Y., 2009. 		
Quality assurance methods that ensure the acquisition of exit competences	Exam results statistics. Students' quality assessment at the end of the semester carried out by the University authorized committee through anonymous polls.		
Other (as the proposer wishes to add)			