NAME OF THE COURSE	Biostatistics					
Code	**PMB709**	Year of study	1			
Course teacher	Ivo Ugrina, PhD, Assistant Professor	Credits (ECTS)	6.0			
Associate teachers	Antonela Matana, PhD, Assistant Professor	Type of instruction (number of hours)	L	S	E	F
			30		45	
Status of the course	Obligatory	Percentage of application of e-learning	20%			

COURSE DESCRIPTION						
Course objectives	Theoretically and practically qualify students to perform biostatistical analysis.					
Course enrolment requirements and entry competences required for the course	Entry competence required for the course: Calculus.					
Learning outcomes expected at the level of the course (4 to 10 learning outcomes)	Upon successful completion of the course, students will be able to: • apply basic statistical methods • perform statistical analyses using R statistical package • present the results of the statistical analysis • interpret results of the statistical analysis					
Course content broken down in detail by weekly class schedule (syllabus)	Design of Experiments. The role of statistics in biological research. Types of studies. Sources of bias and how to minimize. Descriptive Statistics. Contingency tables: Chi-squared test of independence. Chi-squared test of goodness of fit. Diagnostic tests: Sensitivity and specificity, positive and negative predictive value PPV and ROC curves. Nonparametric tests: Sign test, Mann-Whitney test and Fischer's exact test. Power and sample size. ANOVA: 1 and 2-way ANOVA. Correlation and Regression: Correlation coefficient, univariate and multivariate linear regression analysis. Analysis of residuals. Univariate and multivariate logistic regression. Survival analysis. Kaplan-Meier estimation of the survival function, log rank test and Cox regression analysis. Multiple testing. Meta-analysis.					
Format of instruction	☒ lectures ☐ seminars and workshops ☒ exercises ☐ *on line* in entirety ☒ partial e-learning ☐ field work		☒ independent assignments ☐ multimedia ☐ laboratory ☐ work with mentor ☐ (other)			
Student responsibilities	Attend classes, active participation in the teaching process, exams. Implement independent assignments.					
Screening student work *(name the proportion of ECTS credits for each activity so that the total number of*	Class attendance	1.5	Research		Practical training	
	Experimental work		Report		(Other)	
	Essay		Seminar essay		(Other)	

ECTS credits is equal to the ECTS value of the course)	Tests		Oral exam	2.0	(Other)	
	Written exam	2.0	Project	0.5	(Other)	
Grading and evaluating student work in class and at the final exam	Written exam (40%), Oral exam (40%), Project (20%)					

	Title	**Number of copies in the library**	**Availability via other media**
Required literature (available in the library and via other media)	Bernard Rosner. Fundamentals of Biostatistics, 8th edition, 2015.		
	Marc M. Triola, Mario F. Triola, Jason Roy. Biostatistics for the Biological and Health Sciences, 2nd edition, 2017.		

Optional literature (at the time of submission of study programme proposal)	Relevant research articles.
Quality assurance methods that ensure the acquisition of exit competences	Anonymous survey, direct feedback, exam success, self-assessment.
Other (as the proposer wishes to add)	-