

Course code	IRL201		
Course title	STATISTICS AND ANALYSIS OF SCIENTIFIC RESULTS		
General information			
Study programme	Graduate study „Drug research and development“, Graduate study „Biotechnology in medicine“, Graduate study „Medical chemistry“	Academic year	
Lecturer	Prof. Dr. Sc. Marta Žuvić		
Status	Required	Elective	
ECTS system			6
Course objectives			
Aim of the course is to introduce to the students basic statistical concepts necessary to analyze medical data and to develop ability for statistical reasoning.			
Course description			
<ol style="list-style-type: none"> 1. Defining data 2. Visualizing data 3. Analysis of numerical outcomes: <ul style="list-style-type: none"> - arithmetic mean, standard deviation, standard error of mean - normal distribution - confidence intervals, nul-hypothesis testing - interpretation of outcomes of statistical analysis - comparison between two means: t-test - comparison of means from several groups: analysis of variance - non-parametric tests - correlation - regression analysis 4. Analysis of binary outcomes: <ul style="list-style-type: none"> - risk and odds - proportions and binomial distribution - comparison between two proportions - Chi-squared test and McNemar test - Logistic regression 5. Longitudinal studies: <ul style="list-style-type: none"> - survival analysis - regression analysis for survival data 6. Study design, analysis and interpretation <ul style="list-style-type: none"> - linking analysis to study design - calculation of requires sample size - strategies for analysis 			
Learning outcomes			
<p>Students will be able to:</p> <ul style="list-style-type: none"> - graphically presents the data - compute mean, standard deviation, and confidence intervals - compute t-test and interpret it - perform analysis of variance and interpret its outcome - perform non-parametric tests - compute correlation, perform regression analysis and interpret its outcome - compute risk ratio and odds ratio - compute proportions, and compare two proportions - compute chi-squared test and McNemar test - perform survival analysis <p>Besides, students will be able to describe prerequisite for using aforementioned statistical tests, describe their features, describe situations in which they are used and what type of information they offer.</p>			