

Name of university, Name of faculty: Trnava University
Faculty of Health Care and Social Work

INFORMATION SHEET OF THE SUBJECT

Code: LMbD47		Name: Data analysis			
Cover: Department of Theoretical Disciplines and Laboratory Investigation Methods					
Type of educational activity: Practise				Number of credits: 3	Recommended semester: WT
Scope of educational activity (in hours):					Study grade: 1. PO
Weekly: 3					
For term of study: ZS 69					
Method of educational activity:					
Recommended semester	Study programme				
3.year WT	Laboratory Medicine (D1-LVMvZ-22)				
Underlie subjects:					
Conditions for passing the course:					
Method of evaluation: Completion by taking an examination					
Continuous evaluation: none					
Final evaluation: - written test (practical exam) in which students demonstrate their theoretical knowledge and practical skills in analytical statistics in R-Project					
Method of completion: written examination					
Evaluation: A: 100 – 95%; B: 94 – 89%; C: 88 – 83%; D: 82 – 77%; E: 76 – 71%; FX: 70% and less					
Finished: exam - written test					
Learning outcomes:					
VV1 After completing the course, the student will acquire basic knowledge of the theory of experimental/epidemiological data analysis					
VV2 After completing the course, the student will acquire practical skills in the field of analytical statistics implemented in R-Project, including the ability of statistical inference and interpretation of results					
VV3 The student is able to process, analyse and evaluate epidemiological data in R-Project					
VV4 The student is able to interpret processed data and understands the different types of statistical tests in R-Project					
VV5 The student can apply the acquired knowledge of descriptive and analytical statistics to laboratory practice					
Schedule of subject:					
1) Introduction to data analysis, Basics of hypothesis testing					
2) Hypothesis testing – normality of data setout					
3) Comparison of proportions/numerosity – Chi-square test					
4) Comparison of proportions/numerosity – Fisher test, McNemar´s test					
5) Testing the hypothesis about averages – T-test					
6) Testing the hypothesis about averages – Anova test					
7) Testing the hypothesis about medians – Wilcoxon test					
8) Testing the hypothesis about medians – Kruskal-Wallis test					
9) Pair tests					
10) Correlation and dependency graph					
11) Simple linear regression					
12) Choosing and justifying the optimal statistical analysis algorithm					
Recommended reading:					
1) KABACOFF, R.I.: R in Action. Data analysis and graphics with R. USA: MANNING, 2011. / Moodle /					
2) PROCHÁZKA, B.: Biostatistika pro lékaře. Principy základních metod a jejich interpretace s využitím statistického systému R. Praha: Karolinum, 2015. ISBN 9788024627823.					
3) RUSNÁK, M.- RUSNÁKOVÁ, V.- MAJDAN, M.: Bioštatistika pre študentov verejného zdravotníctva. Trnava: Trnavská univerzita v Trnave, 2010, ISBN 9788080823320.					
4) The R Graph Gallery / online: https://www.r-graph-gallery.com/					
Language requirements: Slovak					
Notes:					
The daily combined method consists of: practise /attend, on-line/					
Self-study is supported by e-learning.					
100% participation is required.					
Course evaluation:					
Assessed students in total: 482					
A	B	C	D	E	FX
40%	20%	18%	10%	8%	4%

Lecturers:

PhDr. Denisa Benedek Jakubcová, PhD., MPH, examiner, instructor

Date of last change: 01.09.2026

Approved by: doc. Ing. Stanislava Blažíčková, PhD., MPH, univ.prof.