Name of university, Name of faculty: Trnava University

Faculty of Health Care and Social Work

INFORMATION SHEET OF THE SUBJECT

Code: LMmD21	**Name:** Statistical methods in laboratory medicine	
Cover: Department of Theoretical Disciplines and Laboratory Investigation Methods		
Type of educational activity: Seminar, Practise **Scope of educational activity (in hours):** **Weekly:** 2/1 **For term of study:** LS 60,30 **Method of educational activity:**	**Number of credits:** 4	**Recommended semester:** ST **Study grade:** Master

Recommended semester	Study programme
1.year ST	Laboratory Medicine (D2-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 descriptive and analytical statistics used in laboratory medicine

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 theoretical knowledge of experimental / epidemiological data analysis
VV2 After completing the course, the student will acquire practical skills in the field of analytical statistics in the MS Excel, including the ability of statistical inference and results interpretation.
VV3 The student is able to process, analyze and evaluate epidemiological data in MS Excel in a broader context
VV4 The student is able to use variable analysis, basic descriptive statistics and statistical tests in MS Excel for hypothesis testing
VV5 The student is able to analyze data in MS Excel using statistical dependence analysis
VV6 The student is able to interpret the processed data and understands the individual data analysis outputs in MS Excel

Schedule of subject:
Seminars:
1) Descriptive statistics in MS Excel and its use in laboratory medicine
2) Graphical representation of epidemiological data
3) Analytical statistics in MS Excel and its use in laboratory medicine
4) Comparison of proportion/frequency (Chi-square test, Fisher's test)
5) Hypothesis testing: T-test (paired, equal, unequal)
6) Hypothesis testing: Anova test (one-factor, two-factor)
7) Correlation and dependency graphs
8) Simple linear regression
9) Bland-Altman analysis and Bland-Altman diagram
10) Analysis of the "Questionnaire" file
11) Evaluation of experiments
12) Practical use of statistical methods in laboratory medicine

Practise:
1) Descriptive statistics – practical exercises, preparation of assignments
2) Graphic representation of epidemiological data - practical exercises, preparation of assignments
3) Analytical statistics and its use in laboratory medicine – practical exercises, preparation of assignments
4) Hypothesis testing and their interpretation – practical exercises, preparation of assignments
5) Hypothesis testing and their interpretation – practical exercises, preparation of assignments
6) Hypothesis testing and their interpretation – practical exercises, preparation of assignments
7) Correlation and dependence graph – practical exercises, preparation of assignments
8) Simple linear regression – practical exercises, preparation of assignments
9) Bland-Altman analysis in laboratory medicine – practical exercises, preparation of assignments
10) Analysis of the file "Questionnaire" – practical exercises, preparation of assignments
11) Evaluation of experiments – practical exercises, preparation of assignments
12) Practical use of statistical methods in laboratory medicine - complex repetition, elaboration of assignments

Recommended reading:
1) CHAJDIAK, J.: Štatistika jednoducho v Exceli. Bratislava: STATIS, 2013, ISBN 9788085659740.
2) LEPŠ, J.- ŠMILAUER, P.: Bioštatistika. České Budejovice: EPISTEME, 2016, ISBN 9788073945879.
3) REITEROVÁ, E.: Statistika pro nelékařské zdravotnické obory. Olomouc: Univerzita Palackého v Olomouci, 2016. / online: https://www.fzv.upol.cz/fileadmin/userdata/FZV/Dokumenty/OSE/Statistika_pro_nelekarske_zdravotnicke_obory.pdf

Language requirements: Slovak

Notes:
Full time combined method consists of: seminars / on-line, discussion groups in MS Teams/; practise /attend/
Self-study is supported by e-learning.
100% participation is required

Course evaluation:
Assessed students in total: 53

A	B	C	D	E	FX
70%	19%	4%	0%	2%	6%

Lecturers:
RNDr. Vojtech Boldiš, PhD., examiner, instructor, seminary supervisor

Date of last change: 01.09.2026

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