

INFORMATION SHEET OF THE SUBJECT

Code: VZM02		Name: Analysis of epidemiological data II.	
Cover: Department of Public Health			
Type of educational activity: Seminar, Practise		Number of credits: 5	Recommended semester: ST
Scope of educational activity (in hours): Weekly: 2/2 For term of study: LS 60,60			Study grade: Master
Method of educational activity:			
Recommended semester	Study programme		
1.year ST	Public Health (D2-VZ-22) Public Health (D2-VZ-22-K)		
Underlie subjects:			
Conditions for passing the course:			
Method of evaluation: Completion by taking an examination			
Continuous evaluation:			
Final evaluation: Written test, pass mark of at least 71% for a grade of E (40% of the overall grade); final assignment pass mark of at least 71% for a grade of E (60% of the overall grade).			
At least 95% of the marks must be obtained for an A grade, 89% for a B grade, 83% for a C grade, 77% for a D grade and 71% for an E grade.			
The student has the option of one absence without giving a reason. In case of further absences, he/she will be assigned a substitute task.			
Finished: The course is completed with a final examination.			
In case of e-learning: final test via MOODLE.			
Learning outcomes:			
Upon completion of the course, students will be able to analyse, evaluate, and interpret epidemiological data with an emphasis on multivariate methods. Students will be able to apply what they have learned in this course to basic data processing in the R programming environment.			
Schedule of subject:			
Seminars:			
1. Univariate and multivariate analysis, principles and applications			
2. Correlation analysis: principles, application, correlation coefficients			
3. Univariate linear regression analysis: regression equation, regression coefficients			
4. Multivariate linear regression analysis: principles, applications			
5. Multivariate linear regression analysis: backward and forward selection			
6. Logistic regression analysis: principles, applications			
7. Logistic regression analysis: odds ratios, regression coefficients, regression model validity			
8. Univariate survival analysis: principles and applications			
9. Multivariate survival analysis: principles and applications			
10. Multivariate survival analysis: risk ratios, regression coefficients			
11. Time series: trend plotting, decomposition, prediction			
12. Optimal statistical analysis algorithm selection and reasoning			
Exercises:			
1. Evaluating the linear relationship			
2. Correlation analysis in the R programming environment			
3. Univariate linear regression analysis: application and interpretation			
4. Multivariate linear regression analysis: application and interpretation Part 1			
5. Multivariate linear regression analysis: application and interpretation Part 2			
6. Logistic regression analysis: application and interpretation Part 1			
7. Logistic regression analysis: application and interpretation Part 2			
8. Kaplan-Meier curve and Log-rank test in the R programming environment			
9. Cox regression analysis: application and interpretation Part 1			
10. Cox regression analysis: application and interpretation Part 2			
11. Time series: use and interpretation			
12. Statistical analysis reasoning			
Recommended reading:			
1. Rusnák, M. – Rusnáková, V. – Majdan, M. 2010. Bioštatistika pre študentov verejného zdravotníctva. 1. edition. Trnava: Typi Universitatis Tyrnaviensis, spoločné pracovisko Trnavskej univerzity v Trnave a VEDY, vydavateľstva Slovenskej akadémie vied, 2010. p. 216. ISBN 978-80-8082-332-0.			
2. Somorčík, J. – Teplička, I. 2015. Štatistika zrozumiteľne. Enigma, 2015. p. 244. ISBN 978-80-8133-042-1.			
3. Rusnák, M. – Rusnáková, V. – Psota, M. 2013. Štatistika zdravia. 1. edition. Trnava: Typi Universitatis Tyrnaviensis, spoločné pracovisko Trnavskej univerzity v Trnave a VEDY, vydavateľstva Slovenskej akadémie vied, 2013. p. 235. ISBN 978-80-8082-732-8.			
4. Instructional materials available at: http://fzsp.truni.sk/sites/default/files/dokumenty/e-kniznica/e-ucebnice/Anal%C3%BDza-epidemiologick%			

C3%BDch-d%C3%A1t_frameset%20-%20EPSTRUNI%20%28HTML%29/index.html

5. Instructional materials available at: <https://moodle.truni.sk/>

Language requirements: Slovak

Notes:

Day form, full-time method of education: 2 S / 2 E per week

Day form, combined method of education: 24 h of seminars via assignment on Moodle / 24 h present form exercises per semester

Course evaluation:

Assessed students in total: 346

A	B	C	D	E	FX
17%	22%	22%	17%	11%	12%

Lecturers:

Mgr. Juliana Melichová, PhD., MPH, examiner, instructor, seminary supervisor

Date of last change: 01.09.2026

Approved by: prof. PhDr. Marek Majdan, MSc., PhD.