SYLLABUS

1. Course title:

Fundamentals of statistics in psychology

2. Code:

3. Cycle of study:

1

4. ECTS credits:

7

5. Type of course:

(•) Mandatory ( ) Elective

6. Prerequisites:

none

7. Class restrictions:

none

8. Duration / semester:

1 1

9. Weekly contact hours:

9.1. Lectures:	3
9.2. Seminars:	0
9.3. Laboratory/Practice classes:	3

10. Faculty:

Humanities and Social Sciences

11. Department/study program:

Pedagogy-Psychology/PSYCHOLOGY

12. Lecturer:

13. Lecturer's e-mail:

14. Web site:

www.ff.untz.ba

15. Course aims:

- Acquisition of fundamental theoretical knowledge and skills necessary for statistical data analysis in psychology;
- Introduce students to the principles on which statistical reasoning is based;
- Train students to apply elementary statistical procedures in known statistical packages for data analysis and storage (IBM SPSS, JASP, EPIDATA, G * POWER 3)

16. Learning outcomes:

Based on the program contents and set goals, students will be able to:
- understand basic statistical concepts
- select and apply basic statistical procedures in research,
- draw adequate conclusions based on the application of statistical procedures,
- follow the courses "Statistics in psychology", "Measurement theory", "Construction of measurement instrument",
- adequate use of software packages during data analysis

17. Course content:

- Fundamental concepts in statistics: variables, measurement scales, descriptive and inferential statistics
- Probability theory fundamentals (a priori, axiomatic and statistical understanding of probability, conditional probability)
- Measures of central tendency (arithmetic mean, mode, median, geometric and harmonic mean)
- Measures of variability (variance, standard deviation, mean deviation, quarterly deviation)
- Basic models of distribution (Binomial and Poisson distribution, Gauss-Laplace distribution, law of large numbers, Chebyshev's theorem, central limit theorem)
- Indicators of deviation from the normal distribution model (kurtosis, skewness)
- Z-values and the standard normal distribution.
- Determining the position of results in the group: Percentiles, deciles, quartiles.
- Introduction to statistical inference; (population, sample, types of samples, parameter, statistics ...)
- Statistical estimation of parameters (standard error, confidence intervals)
- Statistical hypothesis testing (null hypotheses, type I, II, and III errors, effect size, robustness ..)
- Significance of differences between arithmetic means (t-test for independent and dependent samples)
-Statistical procedures for data analysis in the form of ranks (ro, tau, U test)
- Chi square test
-Linear connection and simple regression (Pearson's correlation coefficient, partial, pointbiserial ....)

18. Learning methods:

Lectures and practical classes with the use of various multimedia teaching aids, including active participation of students.
In lectures and practical classes will be used: the method of oral presentation, method of demonstration and illustration, seminar discussions, interactive teaching methods.

19. Assessment methods:

a) Written Exam
b) Oral Exam

The written exam includes written knowledge assessment (objective and essay tests). Assessment will be realized through questions and answers regarding the course content. It will be done after the realization of planned lectures. Minimum number of points for passing the written exam is 24 (more than 60%).
Oral exam is meant for students with minimum number of points in the written exam (24).
Written exam
Written exam follows after the end of the course. Students will be presented a combination of essay and objective questions. Students who pass the written exam (achieve 24 to 40 points), gain conditions to take the oral exam. Students can earn a maximum of 40 points in the written exam. Minimum number of points required to pass the exam is 24.

Oral exam
Oral exam will include questions and students' answers regarding the course content and it will last for 15 to 30 minutes. Maximum number of points that can be earned in the oral exam is 10. Minimum number of points required to pass the exam is 6.

Pre-exam points amount to a total of 50 points (20 points for attendance and active in-class participation, 20 point s for the individual project and 10 points for the group project). By fulfilling all of their requirements, students can thus earn a maximum of 100 points.
The points count towards the final grade cumulatively if students score at least 60% points on the final exam (written and oral exam).
In order for students to earn the minimum passing grade, they need to score at least 54 cumulative points, of which at least 24 on the final exam. The final grade is formed as a sum of all points earned in-class and the final exam.

Exchange of any belongings between students is not allowed during the written exam. Students caught cheating or talking to others will be removed from the exam.

20. Assessment components:

Attendance in lectures and practical classes: 5 points
Active participation in lectures and practical classes: 15 points
Individual project: 10 points
Group project: 20 points
Final written exam: 40 points
Final oral exam: 10 points
Total points: 100
The following is the grading scale, showing the points, numerical grade, descriptive grade and letter grade:
0-53 5 (five) fail F
54-63 6 (six) satisfactory E
64-73 7 (seven) good D
74-83 8 (eight very good C
84-93 9 (nine) excellent B
94-100 10 (ten) outstanding A

21. Required reading list:

- Howell, D. (2020). Statistical Methods for Psychology (8th ed.). Wadsworth Publishing Co Inc.
- Tošković, O. (2020). Autostoperski vodič kroz statistiku: Uvod u primenjenu statistiku. Centar za primenjenu psihologiju.
- Cohen, B., (2013). Explaining Psychological Statistics. (4th Ed.). Wiley.
- Field, A. (2020). Discovering Statistics Using IBM SPSS Statistics (5th Revised edition). SAGE Publications Ltd.
- Petz, B., Kolesarić, V., Ivanec, I. (2012). Petzova statistika : osnove statističke metode za nematematičare. Naklada Slap
- Tenjović, L. (2002). Statistika u psihologiji – priručnik, Beograd: Centar za primenjenu psihologiju

22. Web sources:

https://www.psychologie.hhu.de/arbeitsgruppen/allgemeine-psychologie-und-arbeitspsychologie/gpower
https://epidata.dk/
http://www.how2stats.net/p/home.html
http://www.unt.edu/rss/class/Jon/SPSS_SC/
http://www.utexas.edu/courses/schwab/
http://vassarstats.net/textbook/

23. Applicable starting from the academic year:

2022/2023

24. Adopted in the Faculty/Academy session: