STATISTIC METHODS IN PSYCHOLOGY II

Credit points	3 CP
Study course annotation	The course introduces students to modern statistical methods and their application using computer programs MS Excel and SPSS. The study course uses actual research and data taken from previous course and bachelor theses.
Aim of the study course	Enables students to: • To acquire knowledge and develop competencies that would allow themto work with modern statistical methods in psychological research using MS Excel and SPSS software. • To master some statistical methods and their practical application, to solve psychological tasks using computer programs, and to interpret the obtained results. • To promote the development of general scientific, instrumental, • professional, socio-personal and cultural competences.
Objectives of the course	Provide and control: • Acquisition of a systematic course in accordance with the program, broadening and deepening knowledge of statistical methods used in psychological research. • Reading of study literature (according to the list of literature), includingEnglish. Knowledge of all terms found in Russian, Latvian and English. • Formulation of the concept of appropriate mathematical models for psychological research. • Performing data processing using MS Excel and SPSS software. • Using the Internet to obtain information and test problem solving usingonline calculators (testing statistical hypotheses, calculating effect size and building confidence intervals). • Ability to analyze the obtained results. • Develop the ability to record results in accordance with the requirementsof the American Psychological Association (APA). • Execution and execution of individual homework. • Conducting discussions and presentations. • Preparation of students for the execution and presentation of research work in the section "Results" (for the third-year course paper and the Bachelor work). • To develop general scientific, instrumental, professional, socially personal and cultural competences, including a sense of responsibility for • one's education and a desire to further develop it.

	Knowledge	Skills	Competences
Study course results	• Students expand their knowledge of psychological research data processing methods using MS Excel and SPSS software as well as the	• Ability to create mathematical model according to psychological esearch. • Ability to understand basic principles of statisticalmethods of experimental data processing.	**General scientific:** • Understanding of research data processing and analysis in general. • Understanding of the interrelationships between common and individual parts of data processing. • Performing data processing in correlation studies.

	Internet. • Students will be able to use the acquired knowledge to develop their bachelor's thesis and continue their studies in the master's program.	• Ability to process data using MS Excel and SPSS software. • Ability to use the Internet to process psychological research data. • Ability to analyze results and give interpretation. • Ability to present results according to APA requirements. • Ability to find and analyze study literature. • Ability to use statistical terminology in Latvian, Russian and English.	**Instrumental:** • Cognitive skills (understanding and applying course ideas, information analysis and synthesis, information acquisition and analysis from various sources). • Time organization. • Use of training strategies. • Using MS Excel and SPSS internet and computer programs to solve tasks • Use of statistical terminology in Latvian, Russian and English • Initiative and initiative. • Desire to succeed. • Ability to generate new ideas. • Adaptation to new situations during the research. • Care for quality. **Socio-psychological and cultural:** o Ability to self-develop. o Evaluate the accumulated experience and knowledge. o Critically perceive information, check it. o Ability to be self-critical. o Ability to work in a team, to cooperate. **Professional:** • Knowledge of the basic principles of statistical methods as a basis for their professional activities. • The acquired competences will enable the student to use them in developing his / her Bachelor's thesis
		Topics	
Study course content	1	Measuring scales. Descriptive statistics. Quantiles. Measures of central tendencies. Variables. Skewness and Kurtosis. Standard errors. Entering data into SPSS. Graphics of empirical data.	
	2		
	3	Testing statistical hypotheses with SPSS: p- probability. Parametric and nonparametric tests. Normal distribution. Kolmogorov - Smirnov and Shapiro -	

		Wilkes tests. Analysis of standard errors of skewness and kurtosis. D'Agostino - Pearson Test. Histograms with normal curve.
	4	Independent samples. Leven's test, t-test, U-Mann-Whitney test. Paired samples (t-test, Wilkeson test).
	5	Scatters. Pearson, Spearman, τ-Kendall correlationcoefficients. Partial correlation. Simple linear and non-linear regression. Coefficient of determination.
	6	Frequency analysis. Pearson's Chi – Square tests, Fisher's Angle Transform test.
	7	Effect sizes r, Cohen's d, R^2, f^2. Online calculators. Calculation of sample size.

Form of assessment:	Exam

Obligatory literature:

1. Field, A. (2017). Discovering Statistics Using IBM SPSS Statistics 5th Edition. Sage. http://repo.darmajaya.ac.id/5678/1/Discovering Statistics Using IBM SPSS Statistics (PDFDrive).pdf.
2. Blumenau, N.F. (2023). Statistical methods in psychology. Summary of lectures and
3. control tasks. Riga: BSA, Moodle.

Additional reading:

1. Aron, A., Coups, E.J., & Aron, E. (2013). Statistics for psychology. Sixth edition. Upper Sadle River, NJ: Pearson Education. Available in BIA "Moodle".
2. Coolican, H. (2014). Research methods and statistics in psychology. Sixth edition. Londonand New York: Psychology Press. Available in BIA "Moodle".
3. Heiman, G.W. (2011). Basic Statistics for the behavioural sciences. Sixth edition. Wadsworth: Cengage Learning. Available in BIA "Moodle".
4. Howell, D.C. (1999). Fundamental Statistics for Behavioral Sciences. USA: Duxbury Press.Available in http://www.psych.utoronto.ca/courses/c1/statstoc.htm
5. Howell, D.C. (2010). Statistical methods for psychology. Seventh edition. Wadsworth: Cengage Learning. Available in BIA "Moodle".

Other sources of information:

1. BSA bibliotēkas elektroniskā datu bāze(www.bsa.edu.lv):
2. EBSCO (ENG): http://search.ebscohost.com
3. Latvijas nacionālās bibliotēkas datu bāzeshttp://www.lnb.lv).
4. European Journal of Psychological Assessment. www.hhpub.com/journals/ejpa. Availablein BIA library.
5. Psychological Science. Research, theory, & Application in Psychology and RelatedSciences. www.psychologycalscience.org. Available in BIA library.
6. Methodology European Journal of Research Methods for the Behavioural and Social
7. Sciences. www.hogrefe.com/journals/methodology. Available in BIA library.

Changes and additions to the program and literature list are possible during the study process