



## COURSE (MODULE) DESCRIPTION

Course title	Code
Data analysis and interpretation	

Staff	Department
<b>Coordinator:</b> Assoc. Prof. Dr. Jolanta Žemgulienė <b>Other(s):</b>	Business Department, Faculty of Economics and Business Administration

Study cycle	Course type
First	Compulsory

Form of implementation	Period of implementation	Language of instruction
Classroom	Autumn semester	Lithuanian

Requirements for student	
<b>Prerequisites:</b> none	<b>Additional requirements (if any):</b> none

Number of ECTS credits	Student's workload	Contact hours	Individual working hours
5	130	48	82

Purpose of the course and competences developed		
The study subject aims to develop subject-related scientific research competences in the field of management, enabling to link research tasks and quantitative methods of statistical analysis, to interpret the results of data analysis and to evaluate research situations in the field of business management.		
Learning outcomes	Teaching methods	Assessment methods
- Knowledge of quantitative data types and instruments for obtaining data;	Problem-based teaching, lectures, independent study, exercises, solving practical tasks, case analysis	Exam test, midterm test
- Application of quantitative data statistical analysis methods;	Problem-based teaching, lectures, independent study, exercises, solving practical tasks, case analysis	Exam test, midterm test
- Application of statistical data analysis tools (SPSS);	Solving practical tasks, case analysis using SPSS	Exam test, midterm test
- Acquiring competences in presenting and interpreting the results of business research	Solving practical tasks, case analysis	Exam test, midterm test
- Acquiring skills of data grouping, systematization, and analysis	Solving practical tasks, case analysis	Exam test, midterm test

Course themes	Contact / Individual work: time and assignments								Assignments
	Lectures	Tutorials	Seminars	Practical classes	Laboratory work	Practice	Contact hours	Individual work	
1. Collection of empirical data. Variables and measurement scales. General population, sample. Statistical hypothesis. Data entry and editing in SPSS	2						2	4	Solving practical tasks using SPSS
2. Descriptive analysis of research data: frequency, mean, standard deviation, confidence interval of the mean, variance.	2			2			4	6	Solving practical tasks, case analysis (using SPSS for data analysis), interpretation of descriptive statistics indicators
3. Statistical tests for evaluating the frequency differences of variable values. Frequency tables, testing the independence of attributes, applying the $\chi^2$ criterion to test the hypothesis of independence. Application of the $\chi^2$ compatibility criterion when checking the proportion of frequencies of variable values	4			2			6	8	Solving practical tasks, case analysis (using SPSS for data analysis), interpretation of attribute dependence, interpretation of results
4. Statistical tests for evaluating mean differences. Dispersion of means and hypothesis testing of mean differences (Student's t-distribution). Testing the equality of the sample mean for a number. Comparison of the mean of two independent samples. Comparison of the mean of two dependent samples.	4			2			6	8	Solution of practical tasks, case analysis (using SPSS for data analysis), comparison of quantitative parameters, interpretation of results
5. Evaluation of the dispersion and means of measured variables in independent groups, testing of the hypothesis of equality of means (one-factor variance analysis).	4			2			6	8	Solution of practical tasks, case analysis (using SPSS for data analysis), comparison of quantitative parameters, interpretation of results
6. Non-parametric hypothesis testing for dependent and independent samples	4			2			6	8	Solving practical tasks, case analysis (using SPSS for data analysis), interpretation of results
7. Evaluation of correlation between variables (correlation coefficient, correlation coefficient for ordinal variables).	2			1			3	4	Solution of practical tasks, case analysis (using SPSS for data

									analysis), evaluation of correlation between variables, interpretation of results
8. Evaluation of the linear dependence of variables (creating a regression model, statistical indicators of the regression model, interpretation of model parameters)	4			2			6	8	Solution of practical tasks, case analysis (using SPSS for data analysis), evaluation of linear dependence of variables, interpretation of results
9. Segmentation of cases using discriminant analysis	2			1			3	4	Solving practical tasks, case analysis (using SPSS for data analysis), interpretation of results
10. Selection of research instruments. Reliability and validity of the research instrument. Application of Cronbach's $\alpha$ and factor analysis to questionnaire validation	4			2			6	8	Solving practical tasks, case analysis (using SPSS for data analysis), application of Cronbach $\alpha$ and factor analysis for questionnaire validation, interpretation of results
Preparation for the exam								16	Individual work, lecture material in the e-learning system
<b>Total</b>	<b>32</b>			<b>16</b>			<b>48</b>	<b>82</b>	

Assessment strategy	Share in %	Time of assessment	Assessment criteria
Working in the auditorium during practical classes	10	During practical classes	Score 1: actively participates in discussions related to the interpretation of the results of practical tasks and case study tasks, answers questions, formulates problems and questions, provides critical comments; 0.5 points: participates in discussions, answers questions; 0 points: hardly participates in the discussion or misses more than 1/3 of the exercises.
Midterm test	40	After learning the first five topics of the subject	Midterm test, 5 tasks (solving tasks using SPSS). The performance of the tasks is evaluated according to the following criteria: 1) feasibility of the statistical test chosen for solving the task, 2) calculation of statistical indicators and values, 3) reasonableness and completeness of the

			interpretation of the results. Each correctly completed task is valued at 0.8 points.
Final exam test	50	During the session	Exam test consisting of 10 open-ended questions and tasks (tasks performed using SPSS). Answers require knowledge application, analysis, synthesis and evaluation. Each correctly completed task is valued at 0.5 points. The performance of the tasks is evaluated according to the following criteria: 1) feasibility of the statistical test chosen for solving the task, 2) calculation of statistical indicators and values, 3) reasonableness and completeness of the interpretation of the results

Author	Published in	Title	Issue No. or Volume	Publishing house or Internet site
<b>Required reading</b>				
Čekanavičius V., Murauskas G.	2011	Statistika ir jos taikymai II		TEV, Vilnius
Leonavičienė T.	2007	SPSS programų paketo taikymas statistiniuose tyrimuose		VPU, Vilnius
Field A.	2009	Discovering statistics using SPSS		SAGE
Cronk B.	2017	How to use SPSS statistics: a step-by-step guide to analysis and interpretation		Routledge
<b>Supplementary reading</b>				
Kėdaitis V.	2009	Koreliacinės ir regresinės analizės pagrindai		VU leidykla, Vilnius
Pabedinskaitė A.	2005	Kiekybiniai sprendimų metodai		Technika, Vilnius