COURSE UNIT (MODULE) DESCRIPTION

Course unit (module) title	Code
Data Analysis and Evaluation of Business Processes	

Academic staff	Core academic unit(s)
Coordinating: R. Motuzas **Other:**	Faculty of Economics and Business Administration, Business Department

Study cycle	Type of the course unit
Master's	Compulsory

Mode of delivery	Semester or period when it is delivered	Language of instruction
Remote	Autumn	English

Requisites	
Prerequisites: N/A	**Co-requisites (if relevant): N/A**

Number of ECTS credits allocated	Student's workload (total)	Contact hours	Individual work
5	130	32	98

Purpose of the course unit		
This module primarily aims to overview the methodology used for the analysis of business processes, foster the competences necessary for the research and evaluation of business processes and nurture the analytical and critical thinking. By the end of the course, the attendants of the course will be empowered to match the goals of any business process research and the most effective methods necessary for related data analysis. Also, students should be able to evaluate business processes according to set criteria and effectively summarize the results of any data analysis.		
Learning outcomes of the course unit	**Teaching and learning methods**	**Assessment methods**
Application of data analysis methodology pertaining to business processes	Lecture materials (stored in VMA) and Case studies and practical tasks	Mid-Term Exam and Final Exam
Application of data analysis Statistical Package for Social Sciences (SPSS)	Case studies and practical tasks	Practice Sessions / Workshops, Mid-Term Exam and Final Exam
Development of competences necessary for quantitative and qualitative research of business processes	Case studies and practical tasks	Practice Sessions / Workshops, Mid-Term Exam and Final Exam
Advancement of analytical and critical thinking, data systemisation and generalisation; Development of high-quality insights.	Case studies and practical tasks	Practice Sessions / Workshops, Mid-Term Exam and Final Exam

Content	Contact hours							Individual work: time and assignments	
	Lectures	Tutorials	Seminars	Workshops	Laboratory work	Internship	**Contact hours, total**	**Individual work**	**Tasks for individual work**
1. Data collection and analysis in business process research. Variables. Statistical hypotheses.	2						**2**	**4**	Solving case studies and practical tasks using SPSS
2. Qualitative analysis of business process research: frequency; mean, median and mode; standard deviation; confidence interval.	2			1			**3**	**6**	Solving case studies and practical tasks using SPSS; Qualitative analysis of statistics
3. Testing the dependence of business process atributes; frequency tables; testing the independence of attributes; the application of χ^2 criterion for independence hypothesis.	2			1			**3**	**9**	Solving case studies and practical tasks using SPSS; Interpreting the results of statistical data analysis
4. Spread of means and testing the hypothesis of differences in means (Student's t-distribution). Testing the equality of the sample mean to the number. Comparison of the mean of two independent samples. Comparison of the mean of two dependent samples.	2			1			**3**	**9**	Solving case studies and practical tasks using SPSS; Interpreting results of statistical data analysis
5. Estimation of the dispersion and means of the measured business process variables in independent groups; Testing the hypothesis of equality of means (single-factor analysis of variance).	2			1			**3**	**9**	Solving case studies and practical tasks using SPSS; Interpreting results of statistical data analysis
6. Non-parametric hypothesis testing for dependent and independent samples	2			1			**3**	**9**	Solving case studies and practical tasks using SPSS; Interpreting results of statistical data analysis
7. Assessing the linear relationship between the measured business process variables (correlation, correlation coefficient, correlation coefficient for ranked variables).	2			1			**3**	**9**	Solving case studies and practical tasks using SPSS; Assessing the linear relationship between the variables; Interpreting results of statistical data analysis
8 . Evaluating the linear dependence of the measured business process variables (regression model construction, regression model statistics, interpretation of model parameters).	2			2			**4**	**9**	Solving case studies and practical tasks using SPSS; Assessing the linear dependence of the variables;

									Interpreting results of statistical data analysis
9. Segmentation of cases using discriminant analysis.	2			1			**3**	**8**	Solving case studies and practical tasks using SPSS; Interpreting results of statistical data analysis
10. Choice of instruments for business process research. Reliability and validity of the survey instrument. Reliability and convergent validity of the observed variables (application of Cronbach's α and factor analysis to validate the questionnaire).	2			1			**3**	**6**	Solving case studies and practical tasks using SPSS; Applying Cronbach's α and factor analysis to validate the questionnaire; Interpreting results of statistical data analysis
11. Preparation for the final exam.	2			10			**2**	**20**	Course recap.
Total	**22**			**10**			**32**	**98**	

Assessment strategy	Weight %	Deadline	Assessment criteria
Participation in Workshops	10	Throughout the entire course	+1 point: A student actively participates in discussions related to the interpretation of the results of the practical tasks and the case studies; Answers questions; Provides critical comments; +0.5 Point: A student participates in the discussions related to the interpretation of the results of the practitcal tasks and the case studies. +0 points: A student hardly participates in the discussion or misses more than 1/3 of the practical tasks and the case studies.
Mid-Term Exam (Test)	40	After Lecture No. 5	5 assignments (solution requires working with SPSS). The performance of the assignments is assessed according to the following criteria: 1) the appropriateness of the method of statistical analysis of the data chosen for the assignment; 2) the accuracy of the calculation of the indicators and values of the statistical analysis; 3) the reasonableness and comprehensiveness of the interpretation of results. The maximum score per task is 0.8 points.
Final Exam (Written)	50	After Lecture No. 10	10 open-ended questions and tasks (solution requires working with SPSS). All assignments require application of knowledge, analysis of data and evaluation of the results. The performance of the assignments is assessed according to the following criteria: (1) the appropriateness of the method of statistical analysis of the data chosen for the assignment; (2) the accuracy of the calculation of the indicators and values of the statistical analysis (3) the validity and comprehensiveness of the interpretation of results. The maximum score per task is 0.5 points.

Author (-s)	Publishing year	Title	Issue of a periodical or volume of a publication	Publishing house or web link
Required reading				
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