



## DESCRIPTION OF THE SUBJECT

<b>FIELD OF STUDY</b>	<b>Management</b>
<b>SPECIALISATION</b>	-
<b>MODE OF STUDY</b>	Full-time / Part-time
<b>SEMESTER</b>	2

<b>Name of the subject</b>	<b>Descriptive statistics</b>
<b>Hourly dimension of particular forms of classes</b> <ul style="list-style-type: none"><li>- lectures</li><li>- other forms</li></ul>	Full-time studies – 30 Part-time studies – 30
	Full-time studies – 15 Part-time studies – 15
	Full-time studies – 15 Part-time studies – 15
	Full-time studies – 15 Part-time studies – 15

<b>Learning objectives:</b>	<ul style="list-style-type: none"><li>– to present the nature, role and importance of statistical surveys and to explain basic statistical concepts,</li><li>– acquaintance with the basic methods of descriptive statistics, their properties and conditions of use in the study of economic and social phenomena and processes,</li><li>– to acquire the students' ability to carry out statistical analyses with the help of the learned statistical tools and to interpret the results of the analyses.</li></ul>
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<b>Learning outcomes for the subject</b>	
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<b>Number</b>	<b>Learning outcomes, A student who has successfully completed the course will be able to:</b>	<b>Reference of learning outcomes for the programme</b>	<b>The reference to the learning outcomes for the area</b>
EK_W01	define basic concepts concerning statistical research and distinguish data sources used for statistical analyses of economic and social phenomena	K_W01 K_W02	P6S_WG
EK_W02	indicate statistical tools for the description of the structure of a statistical community, analysis of interdependencies and dynamics of economic and social phenomena and present conditions for their use	K_W04 K_W05	P6S_WG
EK_U03	use basic statistical terminology	K_U01	P6S_UW
EK_U04	analyse economic and social phenomena using the recognised methods of descriptive statistics and correctly interpret the results of such analyses	K_U03	P6S_UW
EK_K05	apply general knowledge of management and economic sciences	K_K02	P6S_KK

Content number	Educational/ curricular content	Reference to learning outcomes for the subject
	<b>Lectures</b>	
T_01	The object and tasks of statistics. Basic statistical concepts and classifications.	EK_W01 EK_U03 EK_K05
T_02	Types of statistical research	EK_W01 EK_U03 EK_K05
T_03	Process of statistical research	EK_W01 EK_U03 EK_K05
T_04	Development and presentation of statistical material	EK_W01 EK_W02 EK_U03 EK_K05
T_05	Measures of central tendency and measures of dispersion	EK_W02 EK_U03
T_06	Asymmetry measures and concentration measures	EK_W02 EK_U03
T_07	Complex structure analysis	EK_U03 EK_U04 EK_K05
T_08	Measures of correlation of two quantitative characteristics	EK_W02 EK_U03
T_09	Linear regression model of two variables	EK_W02 EK_U03
T_10	Correlation measures of qualitative characteristics	EK_W02 EK_U03
T_11	Individual indices, medium-term rate of change	EK_W02 EK_U03 EK_U04
T_12	Trend detection methods	EK_W02 EK_U03
T_13	Methods for distinguishing seasonal fluctuations	EK_W02 EK_U03
	<b>Exercises</b>	
T_14	Presentation by students of the aim, subject and object of the statistical analyses planned to be carried out in control paper 1, together with the characteristics of the source of data for the planned analyses.	EK_W01 EK_U03 EK_K05
T_15	Grouping statistical material - tasks	EK_W02 EK_U03 EK_U04 EK_K05
T_16	Analysis of central tendency and diversity - tasks	EK_W02 EK_U03 EK_U04 EK_K05
T_17	Analysis of asymmetry and concentration - tasks	EK_W02 EK_U03 EK_U04 EK_K05

T_18	Complex structure analysis - tasks	EK_W02 EK_U03 EK_U04 EK_K05
T_19	Correlation analysis of two quantitative features.	EK_W02 EK_U03 EK_U04 EK_K05
T_20	Linear regression analysis of two variables.	EK_W02 EK_U03 EK_U04 EK_K05
T_21	Correlation analysis of qualitative features - tasks	EK_W02 EK_U03 EK_U04 EK_K05
T_22	Analysis of the development trend - tasks	EK_W02 EK_U03 EK_U04 EK_K05
T_23	Analysis of seasonal fluctuations - tasks	EK_W02 EK_U03 EK_U04 EK_K05

Methods and forms of teaching	Educational and curricular content
Lecture with multimedia presentation of selected issues	
Conversation lecture	
Problem-based lecture	
Informative lecture	T_01 – T_13
Discussion	
Work with text	
Case study method	
Problem-based learning	
Didactic/simulation game	
Exercise method	T_14 – T_23
Workshop method	
Project method	
Multimedia presentation	
Audio and/or video demonstration	
Activating methods (e.g. brainstorming, SWOT analysis technique, decision tree technique, snowball method, constructing mind maps)	
Other (which ones?) - ...	
...	

<b>Evaluation criteria in relation to particular learning outcomes</b>	
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Learning outcome	For the assessment 2	For the assessment 3	For the assessment 4	For the assessment 5
EK_W01	Students cannot define basic terms concerning statistical research and distinguish data sources used for statistical analyses.	The student is able to fairly correctly define the basic concepts of statistical research and distinguish two basic sources of data used in statistical analyses	Students will be able to define basic concepts of statistical research and to distinguish sources of data used for statistical analyses.	Students will be able to correctly define the terms concerning statistical research and to distinguish between basic sources of data used for statistical analyses, as well as to indicate their main advantages and disadvantages
EK_W02	Students cannot identify basic statistical tools for describing the structure of a statistical community, analysing interdependencies and dynamics of economic and social phenomena and present the main conditions for their application	Students will be able to identify basic statistical tools for describing the structure of a statistical community, analysing interdependencies and dynamics of economic and social phenomena and present the main conditions for their application.	Students will be able to identify basic statistical tools for describing the structure of a statistical community, analysing interdependencies and dynamics of economic and social phenomena, to present the main conditions for their application, but also to present detailed properties of selected statistical tools	Students will be able to identify basic statistical tools used in the description of the structure of a statistical community, analysis of interdependencies and dynamics of economic and social phenomena, present the main conditions for their use, present detailed properties of selected statistical tools and indicate how they affect the results of analysis
EK_U03	The student is not able to use statistical terminology.	The student is able to use basic statistical terminology to the necessary extent.	The student is able to use basic statistical terminology to a good extent.	The student is fully able to use statistical terminology
EK_U04	The student is unable to analyse economic and social phenomena using the known methods of descriptive statistics and correctly interpret the results of such analyses	The student is able to analyse economic and social phenomena by means of the recognised methods of descriptive statistics and to interpret correctly the basic results of such analyses	Students will be able to analyse economic and social phenomena using recognised methods of descriptive statistics and to interpret the results of such analyses in a correct and comprehensive way.	Students will be able to analyse economic and social phenomena by means of the recognised methods of descriptive statistics, interpret the results of such analyses in a correct and comprehensive way and evaluate them comprehensively.
EK_K05	The student is not able to use knowledge from the field of management and economic sciences.	The student is able to use elements of knowledge in the field of management and economic sciences.	The student is able to use knowledge from the field of management sciences and economic sciences to a good extent.	The student is able to fully apply the knowledge of management sciences and economic sciences.

Verification of learning outcomes	EK symbols for the module/subject				
	W01	W02	U03	U04	K05
Written test	X	X	X	X	X
Oral exam					
Written credit	X	X	X	X	X
Oral credit					
Written colloquium					
Oral colloquium					
Test					
Project					
Written work					
Report					
Multimedia presentation					
Work during exercises	X	X	X	X	X
Other (which ones?) -					

Hourly teaching load and student workload	Full-time studies	Part-time studies
1. Lectures (joint participation of academic teachers and students)	15	15
2. Other forms (joint participation of academic teachers and students)	15	15
3. Consultations with the teacher	20	20
<b>Total 1+2+3</b>	<b>50</b>	<b>50</b>
4. Practical training (carried out by students on their own)	—	—
5. Student's own work (including homework and project work, preparation for a credit/examination)	50	50
<b>Total 4+5</b>	<b>50</b>	<b>50</b>
<b>SUMMARY 1+2+3+4+5</b>	<b>100</b>	<b>100</b>
<b>Total ECTS credits according to the study plan</b>	<b>4</b>	

<b>Reference literature</b>	<p>Paradysz J. (red.), <i>Statystyka</i>, Wydawnictwo UE w Poznaniu, Poznań 2005.</p> <p>Roeske-Słomka I., <i>Statystyka opisowa</i>, Wydawnictwo UE w Poznaniu, Poznań 2010.</p> <p>Sobczyk M., <i>Statystyka opisowa</i>, C.H. Beck, Warszawa 2010.</p>
<b>Complementary literature</b>	<p>Aczel A. D., <i>Statystyka w zarządzaniu</i>, PWN, Warszawa 2000.</p> <p>Józwiak J., Podgórski J., <i>Statystyka od podstaw</i>, PWE, Warszawa 2006.</p> <p>Lipiec-Zajchowska M. (red.), <i>Wspomaganie procesów decyzyjnych. Tom I Statystyka</i>, C.H. Beck, Warszawa 2003.</p> <p>Zeliaś A., Pawełek B., Wanat S., <i>Metody statystyczne. Zadania i sprawdziany</i>, PWE, Warszawa 2002.</p>