

To be filled in by the Field of Study Committee	Module (course block) name: <b>ERASMUS</b>				Module code:		
	Course name: <b>BASICS OF DATA ANALYSIS</b>				Course code:		
	Organisational Unit conducting the course/module: <b>INSTITUTE OF ECONOMICS</b>						
	Field of study: <b>ECONOMY</b>						
	Mode of study: <b>FULL - TIME</b>		Study profile: <b>PRACTICAL</b>		Mode of study: <b>ECONOMY/ERASMUS</b>		
	Year / semester: <b>WINTER/SUMMER</b>		Course/module status: <b>OPTIONAL</b>		Course/module language: <b>ENGLISH</b>		
	Form of tuition	lecture	class	laboratory	project	seminar	other (please, specify)
	Course load (hrs)			<b>30</b>			
Module/course coordinator		Ph.D. eng. Marcin Bukowski					
Lecturer		Ph.D. eng. Marcin Bukowski					
Course/module objectives		Providing basic knowledge and skills on common methods of data analysis; presentation of statistical analysis methods and methods and models of data mining.					
Entry requirements		basics of mathematics and statistics					
<b>LEARNING OUTCOMES</b>							
No.	Learning outcome description					Reference to the learning outcomes for Field of Study	
<b>Knowledge – the student:</b>							
01	knows the basic methods of descriptive and mathematical statistics, including the principles of creating statistical graphs, estimating and testing parametric hypotheses					K1P_W11	
02	has knowledge of the use of statistical inference as the basic methodology for data analysis					K1P_W13	
<b>Skills – the student:</b>							
03	is able to obtain data and prepare a data set for analysis					K1P_U15 K1P_U16	
04	can use statistical characteristics of the population and their sample equivalents, can carry out simple statistical reasoning, also with the use of computer tools					K1P_U10 K1P_U19	
<b>Social competences – the student:</b>							
05	is ready to critically evaluate his knowledge and further improve it using various sources of information					K1P_K10	
<b>COURSE CONTENT</b>							
<b>Laboratory</b>							
Basic issues of data analysis. Measurement scales: the role of measurement scales in economic research, types of measurement scales and their characteristics . Variable and variable types. Frequency distribution of the variable. Graphical presentation of the data. Descriptive statistics. Measures of location, dispersion, asymmetry, concentration. Linear regression for one and more variables. Nonlinear models. Pivot tables. Classification of multidimensional data analysis methods. Cluster analysis. Construction of classification trees							
Basic literature		1. Larose D.T., <i>Data Mining Methods and Models</i> , John Wiley & Sons, Inc., 2006. 2. Cuesta H., <i>Practical Data Analysis</i> , Packt Publishing, 2013.					
Supplementary literature		1. Brandt S., <i>Analiza danych</i> . PWN, Warszawa, 1998.					

Onsite teaching methods	Lectures with multimedia presentation. Discussion about the selected problems. Solving problems with the use of computer programs
Teaching methods including methods and techniques of remote teaching	not included

Learning outcomes verification methods		Learning outcome number
Colloquium		01, 02, 03, 04
Observation during discussion		03, 04, 05
Form and terms of awarding credits	colloquium during classes	

STUDENT WORKLOAD			
Type of activity/tuition	Number of hours		
	Total	Activities related to practical professional preparation	Participation in classes conducted with the use of methods and techniques of remote teaching
Participation in lectures			
Independent study of lecture topics			
Participation in classes and laboratories	30	20	
Independent preparation for classes	90	50	
Preparation of projects/essays/etc.			
Preparation for examination/credit awarding test	30	5	
Participation in consultation hours	2		
Other			
<b>TOTAL student workload in hours</b>	<b>152</b>	<b>75</b>	<b>0</b>
<b>Number of ECTS credits for the course</b>	<b>6</b>		
<b>Number of ECTS credits ascribed to a scientific discipline</b>	<b>1 (economy and finance science) 4 (management and quality sciences)</b>		
<b>Number of ECTS credits relevant to practical professional education</b>	<b>3</b>		
Number of ECTS credits relevant to remote education (tuition involving the use of methods and techniques of remote teaching)	0		
Number of ECTS credits for classes which require direct participation of lecturers	1,3		