Faculty of Economics and Management, University of Bialystok

Stationary Studies International Economic Relations 2nd degree

Academic Year 2019/2020

Course: Economic Statistics	ECTS Points: 6
Course Code: 0-300-MS2-1STM#E	
Language: English	
Course description: educational content – elective, optional course	
Lecturer: Iwona Skrodzka, PhD	
Semester: winter/**summer**	Number of hours: 45 Lecture: 15 Classes: 30
Courses to be completed before enrollment to the course: Mathematics, Economic statistics	
Substantive content	

Lectures	Number of Hours
Probabilistic space. Definition and properties of probability.	1
Probability distribution of a discrete random variable. Definition of a random variable, probability distribution functions, cumulative distribution function.	1
Probability distribution of a continuous random variable. Definition of a continuous random variable, probability density function, cumulative distribution function.	1
Selected parameters of probability distributions: expected value, variance, standard deviation, moments of random variable.	1
Bivariate Random Variables. Discrete bivariate distributions, continuous bivariate distributions. Covariance and correlation. Conditional distribution and conditional mean.	2
Selected probability distributions: Bernoulli distribution, Poisson distribution, uniform distribution, normal distribution, Student's distribution, chi-square distribution.	2
Limit Theorems.	1
Sampling. Sampling distributions.	2
Estimation: point estimators, interval estimation.	2
Hypotheses testing.	2
Classes	Number of Hours
Exercises on combinatorial analysis, probability space and probability properties.	4
Exercises on probability distribution of a discrete random variable.	2
Exercises on probability distribution of a continuous random variable.	2
Exercises in determining selected parameters of probability distributions.	4
Exercises on discrete bivariate distributions.	4
Exercises on selected probability distributions.	2
Exercises on sampling distributions.	4
Exercises in determining confidence intervals.	4
Exercises in testing of hypotheses.	4

Aim of the course:

The aim of the course is to educate creative and logical thinking, strict expression of ideas, formulate and solve problems by using statistical tools. Particular attention is paid to discuss theoretical aspects of probability theory, estimation theory and hypothesis testing procedures, together with some of their more important applications.

Teaching methods:

Methods of feeding (traditional lecture conducted with the use of multimedia presentations), practical methods and activating (individual work at the blackboard, group work, individual work).

Literature:

K. Ostasiewicz, Mathematical statistics, Publishing House of Wrocław University of Economics, Wroclaw 2014.
Z. Michna, Statistics, Publishing House of Wrocław University of Economics, Wroclaw 2014.
B. Kowalczyk, B. Witkowski, Mathematical statistics for management, Warsaw School of Economiscs, Warsaw 2015.
J. T. McClave, P. G. Benson, T. Sincich, Statistics for Business and Economics, Prentice Hall International, New Jersey 2001.

Forms and conditions of credit:

Lectures: The examination can only be taken by students who got the credit for classes. A written examination is a test.

Classes: A credit is awarded considering tests and active participation in classes.