Course programme 2020/2021

undergraduate studies

graduate studies

Course ID		Fall Semester	Language of the course: English

Course title:	Mathematical Statistics
Course title in Polish:	Statystyka matematyczna

Total course hours:	45.00	ECTS	6

Lecturer:	Iwona Skrodzka, PhD
Prerequisite(s):	Mathematics, Descriptive Statistics

I. Course description

Course contains elements of probability theory: discrete and continuous variables, probability distributions, joint, boundary and conditional distributions. Simple random sample, elements of point and interval estimation theory and hypothesis verification.
Teaching methods: traditional lectures (15 hours), practical and activating methods during the classes (30 hours).

II. Course objectives

The objective of the course is to give students the ability of: acquiring skills necessary to use statistical methods and their practical application in the analysis of socio-economic phenomena.

III. Knowledge, skills acquisition

Topic – content summary	Knowledge, Skills
Probabilistic space, concept and properties of probability.	Students will be able to explane and apply basic concepts of probability.
Probability distributions of discrete and continiuos random variables.	Students will be able to define random variables and calculate probability distribution parameters.
Two-dimensional discrete random variables. Selected parameters of probability distributions.	Students will be able to compute the joint moment of two random variables such (correlation, covariance).
Lindberg-Levy limit theorem and the law of large numbers (Chebyshev, Bernoulli).	Students will know some of the theorems in probability theory importent in mathematical statistics.
Examples of selected distribution of statistics from the sample. Point and interval estimation.	Students will be able to understand the ideas of random sampling, statistical inference, and estimation
Verification of statistical hypotheses.	Students will be able to verify statistical hypotheses.

IV. Assessment

Lectures: exam.
Classes: activity during the classes, homework, test.

Date: 09/04/2020

Lecturer signature : Iwona Skrodzka

Zofia Karczewska