Level: Bachelor

Course title: Statistical methods in geography

Status: Elective

ECTS: 6

Requirements: none

Learning objectives

Acquiring basic knowledge of Statistics and statistical methods and their application in Geography.

Learning outcomes

Students will learn the basic notions in Statistics and achieve the ability to solve practical problems in Statistics by using statistical methods and programs.

Syllabus

Theoretical instruction

Basic elements of probability theory, discrete and absolutely continuous random variables, Multidimensional random variables. Important distributions of random variables, numerical characteristics of random variables (expectation, moments, mode, median), measures of deviation of random variable from the center of accumulation (variance, standard deviation, central moments, Coefficient of variation, asymmetry, excess), multidimensional correlation.

Statistical concluding, basic statistical notions, population, sample, statistical research, estimation of parameters of the distribution: point's estimation of the numerical characteristics of the sample (sample mean, mode, median, variance and standard deviation, coefficient of correlation), interval estimation of the parameters of distribution of the sample (intervals of confidence).

Testing statistical hypothesis. Testing compatibility of the sample in accordance with distribution. Testing the independence of two samples. Regression analysis (linear, nonlinear, power, exponential model), error estimate and coefficient of the correlation. Time series.

Practical instruction

The entire course is based on examples from Geography, Climatology and Statistics of population.

Weakly teaching load 4 (60)				Others
Lectures: 2	Exercises: 2	Other form of teaching	Students research:	