Course Unit Descriptor

Study Programme: Agricultural economics	
Course Unit Title: Statistics	
Course Unit Code: 3OAE2O07	
Name of Lecturer(s): PhD. Beba S. Mutavdžić, Associate Professor, MSc. Tihomir Novaković, Teaching Assistant	
Type and Level of Studies: Undergraduate Academic Studies	
Course Status (compulsory/elective): Mandatory	
Semester (winter/summer): Summer	
Language of instruction: English	
Mode of course unit delivery (face-to-face/distance learning): Face-to-face	
Number of ECTS Allocated:7	
Prerequisites: A passing grade in mathematics	

Course Aims:
1. Educational goal
The curriculum of this course is designed to introduce students with the application of modern statistical methods in solving problems in the field of agricultural sciences and agricultural economics. Students need to comprehend the basic methods of descriptive and inferential statistics.

Learning Outcomes:
During the course, students need to become capable of choosing and applying an adequate statistical method in collecting, presenting and analysing data in the fields of agriculture and agricultural economics. Students will be able to use the acquired skills in other courses during their studies and in their scientific-research work.

Syllabus:
Theoretical Instruction
The fundamentals of statistics. The subject matter and units of observation. Basic set and sample. Observation features. Classification and presentation of statistical data. Analysis of numerical series. Numerical descriptive measures. Theoretical distributions. Discrete and continuous theoretical distributions. Sample. Methods of sample selection. Simple random sample. Statistical inference. Distribution of sample parameters. Principles of parameters estimation. Confidence interval. Hypothesis testing. Testing the hypotheses on arithmetic mean and proportion. Testing the hypothesis in the case of two populations. Analysis of variance. Regression and correlation. Choice of regression function. Simple linear regression. Estimation of regression parameters. Linear correlation. Inference on regression and correlation parameters. Coefficient of determination. Index numbers. Individual and group indices. Prices-weighted group indices and weighted group indices of the physical volume of production. Production value index. Time series analysis.
Types of times series. Decomposition of times series. Trend: method of moving averages and linear trend method. Seasonal fluctuation analysis. Seasonal indices.
Practical Instruction: Tutorials
The fundamentals of statistics. Analysis of numerical series. Theoretical distributions. Distribution of sample parameters. Statistical inference. Point and interval estimation of arithmetic mean and proportion. Hypothesis testing. Regression and correlation. Index numbers. Time series analysis.

Required Reading:

Mann, P. S. (2010): Introductory Statistics ,Wiley & Sons
Islam M.A., Al-Shina A. (2018): Foundations of Biostatistic, Springer
Anderson D., Sweeney D., Williams T. (2010): Essential of Statistics for Business and Economics, South-Western Cengage Learning

Weekly Contact Hours:		**Lectures:** 3		**Practical work:** 3

Teaching Methods: Lectures and tutorials, introduction to statistical software, homework, consultations, tests.

Knowledge Assessment (maximum of 100 points):

Pre-exam obligations	points	Final exam	points
Lecture attendance	**5**	(Test 1 + Test 2) or written exam	**40**
Practical work	**5**	Oral part exam	**50**
Test 1	**20**		
Test 2	**20**		

The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.