Study program(s): **Economics and business management; Business informatics**

Type and level of studies: **Master academic studies**

Course name: **Applied Statistics**

Teacher(s): **Marina Milanović & Milan Stamenković**

Language of instruction: English

ECTS: 8

Prerequisites: Passed course – *Fundamentals of Statistics*

Semester (*Winter Semester or Summer Semester*): Winter Semester

Course Objective: Enabling students to independently conduct empirical research based on the validapplication of selected methods of applied statistics in the analysis of macroeconomic and microeconomic data using appropriate software solutions.

Learning outcomes of the Course:

- Critical understanding of key theoretical-methodological concepts, methods and techniques of multivariate data analysis and time series analysis;
- Creative selection of the optimal combination of methods, models and techniques that will be used in the implementation of specific empirical research;
- Acquisition of analytical skills for valid implementation of elaborated statistical methods and correct interpretation of obtained results, from the perspective of specific economic phenomena and business problem situations;
- Acquisition of relevant knowledge necessary for the implementation of applied statistics methods in the software environment.

Course Content:

- Key determinations of univariate, bivariate and multivariate data analysis
- Procedure of work in selected programs for statistical data analysis
- Data preparation for multivariate analysis
- Factor analysis
- Cluster analysis
- Multivariate analysis of variance (MANOVA)
- Classical regression analysis - specific aspects
- Logistic regression analysis
- Time series analysis and forecasting – a modern approach

Course teaching also includes: (a) Problem solving and analysis of practical examples from different areas of economics; (b) Elaboration of topics of interest in the form of seminar papers; (c) Intensive use of appropriate software support for statistical data processing.

Literature:

Shmueli, G., Patel, N. & Bruce, P. (2010). *Data Mining for Business Intelligence: Concepts, Techniques & Applicationsin Microsoft Office Excel with XLMiner*, 2nd edition. Hoboken, N.J.: Wiley.

Hair, J., Black, W., Babin, B. & Anderson, R. (2014). *Multivariate data analysis*, 7th ed. Harlow: Pearson Education.

George, D. & Mallery, P. (2016). *IBM SPSS Statistics 23 – step by step, 14th edition*. NY: Taylor & Francis

Number of active teaching hours				Other classes
Lectures: 2	Practice: 2	Other forms of classes:	Independent work:	

Teaching method(s):

For five and less students – mentoring system; more than five students – classroom lectures.

Examination methods (maximum 100 points)

Exam prerequisites	**No. of points**	**Final exam**	**No. of points**
Student's activity during lectures		written examination	
Practical classes / tests	**35**	oral examination	**30**
Seminars / homework	**35**		
Project			

Grading system		
Grade	**No. of points**	**Description**
10	**91–100**	Excellent
9	**81–90**	Exceptionally good
8	**71–80**	Very good
7	**61–70**	Good
6	**51–60**	Passing
5	**0–50**	Failing