Learning outcomes and competencies for master program in Applied statistics

1. Description of general and subject-specific competencies of students.

Students who complete graduate studies in applied statistics at the University of Novi Sad become masters of applied statistics - experts who are trained to use modern scientific achievements in the field of statistics, quantitative analysis, to know to apply analytical tools and to handle mathematical and statistical methods and models to apply the contemporary information technology.

The competences of students cover four main areas: statistics in the narrow sense, substantive knowledge, communication skills and IT skills. Statistics in the narrow sense contains necessary mathematical knowledge, computing and practical skills connected with the data and statistics. Substantive knowledge covers knowledge in a particular field of specialization, that is connected to a chosen module (social sciences, economy, biomedicine or engineering). Communication skills are connected with abilities to read and understand material in English, to produce texts in English connected with statistics, presentation skills and skills to communicate effectively with other experts in the selected areas. IT skills involve practical expertise with the most used statistical software packages and with work with databases.

Graduate professionals of this study program can be employed in various economic and scientific fields and in all areas where the skills of statistical analysis are needed, especially in the economy, biomedicine, engineering, marketing, public administration or social sciences in general. The graduates of applied statistics studies can independently participate in the processes of analysis, planning, formulating strategies of development, decision-making, governing and management, and independent making of tactical and strategic decisions related to the statistical research.

2. Description of learning outcomes

After finishing graduate academic studies, a certificate which confirms completion of the acquisition of academic title - Master of Applied Statistics in accordance with the Law is issued to students. Competencies that a graduate student gains are the adopting the

methodology, quantitative and qualitative knowledge of basic mathematical and statistical disciplines (probability theory, principles of statistical analysis, multivariate analysis, the theory of the samples), the necessary IT skills (databases, statistical software) and different statistical disciplines that are particularly applicable in the field of economics (time series analysis, econometrics, microeconomic models, financial engineering), biomedicine (biostatistics, epidemiology, longitudinal data analysis, Bayesian methods), engineering (quality control, experimental design, Monte-Carlo method) and the social sciences (structural equation). Students acquire knowledge and master skills necessary for highly technical, managerial and analytical work over a wide area of statistical research and statistical analysis. Jobs that an applied statistician can perform in the labor market might be tasks of planning and analysis, quantitative analysis, forecasting variations of observed phenomena in the future, and similar activities in the field of economics, medicine, engineering, social sciences, marketing and public administration. In addition, the students will be able to communicate their research to wider scientific community, to make decisions based on research results and to communicate with other experts in the selected areas.