Econometric Research
B.1.2.1.3.

Degree: Master
Year: 1
Semester: module 3
General workload: 4 ECTS credits, 144 hours

Goals and objectives of the course
The course goal is to acquire new theoretical knowledge and practical skills needed to make specifications, develop procedures for assessing and verifying the relevancy of regression models for financial and economic systems. The knowledge and skills are sufficient for taking special and applied courses and for performing analysis of financial and economic entities and processes based on the use of modern econometric software.
The objectives of the course are the following:
1) To learn about the principles of constructing an economic object specification (description) using the language of random disturbance-based mathematical models reflecting the impact of factors not included in the model;
2) To examine the way econometric models that are based on homoscedastic, heteroscedastic and autocorrelated random disturbance are assessed;
3) To examine the procedure used for forecasting the values of explanatory variables in econometric models based on random disturbance probability figures;
4) To examine the most popular models of stationary and non-stationary time series and their identification, and to build the foundations for time series new model development.

Key didactic units
Introduction to econometrics. Paired linear regression, method of least squares. Multiple linear regression model: two explanatory variables and k explanatory variables. Variables transformations in regression analysis. Dummy variables. Linear regression model specification. Heteroscedasticity. Autocorrelated random disturbance. Simultaneous equations. Time series data-based modelling. Panel data models.

Place of the discipline within the curriculum
The course is a mandatory discipline in the professional training unit within the curriculum of program 38.04.01. in Economics (concentration: International Finance). The course builds the theoretical and methodological foundation for further study of economic and mathematical disciplines taught to master students majoring in Economics (concentration: International Finance).

Upon completing the course, the students should:
Know:
- Modern econometric analysis methods;
- Key latest research findings published in the leading econometrics journals;
- Modern software products needed to solve economic and statistical problems;

Be able to:
- Apply modern mathematical tools for solving complex economic problems;
- Use modern software to solve economic, statistical and econometric problems;

- Forecast specific economic process development scenarios at the micro- and macro-level;
- Make a specification of the financial and economic object econometric model;
- Gather the necessary statistical data about the original object for model assessment purposes;
- Examine the probability of random residues in the behavioral equations through the use of appropriate tests and assess and adjust the model using appropriate techniques;
- Check the appropriateness of the assessed model and, if the model is appropriate, examine the original object;

Have:

- Knowledge of professional research methods and techniques;
- Independent research skills;
- Skills in microeconomic and macroeconomic modeling based on the use of modern tools;
- Knowledge of the modern econometric model construction methodology.

Course structure: lectures, seminars, independent student work

Summative assessment: examination