ECONOMETRICS

COURSE SYLLABUS ABSTRACT

Speciality **6-05-0411-02 «Finance and credit»**
Profiling **«Banking», «Taxes and taxation»**

Speciality **6-05-0311-02 «Economics and management»**
Profiling **«Economics and management in industrial, trade and transport enterprises»**

	STUDY MODE	
	full-time	part-time
Year	3	3
Semester	5	5
Lectures, hours	34	8
Laboratory classes, hours	34	8
In-class test, semester (hours)	–	5 (2 hours)
Exam, semester	5	5
Contact hours	68	18
Independent study, hours	40	90
Total course duration in hours / credit units	108 / 3	

	STUDY MODE	
	full-time	part-time
Year	3	3
Semester	5	5
Lectures, hours	34	8
Practical classes, hours	16	4
Laboratory classes, hours	16	4
Exam, semester	5	5
Contact hours	68	16
Independent study, hours	40	92
Total course duration in hours / credit units	108 / 3	

1. Course outline

Subject of econometrics. Repetition of probability theory and mathematical statistics. Covariance and correlation – a mathematical tool for assessing the relationships of economic phenomena. Linear regression with one explanatory variable (paired regression). Evaluation of the quality of classical linear regression. Linear regression with several explanatory variables (multiple regression). Testing the assumptions of the least squares method. Heteroscedasticity. Testing the assumptions of the least squares method. Autocorrelation of random components. Multicollinearity. Nonlinear regression. Regression models with variable structure (dummy variables). Time series and forecasting.

2. Course learning outcomes

Upon completion of the course, students will be expected

to know:

– the methods of statistical estimation of parameters and hypothesis testing used in constructing econometric models of the regression type;

– the methods of statistical analysis, modeling and forecasting of stationary economic time series and non-stationary economic time series with deterministic and stochastic trends;

be able to:

– construct the main types of econometric models of economic and financial processes;

– analyze the adequacy of the constructed econometric models;

– apply econometric models to analyze cause-and-effect relationships between economic variables, forecast the values of economic variables, construct and select options (strategies) for economic policy based on experiments with the model;

to possess a skill:

– to use the basics of econometric analysis, modeling and forecasting;

– to use elements of economic analysis of modeled processes, econometric models and results of econometric modeling;

– to construct and use econometric models using standard econometric software.

3. Competencies

Apply concepts, methods of econometrics, economic models and tools for quantitative assessment of statistical dependencies of indicators of socio-economic development.

4. Requirements and forms of midcourse evaluation and summative assessment

Midcourse evaluation: protection of laboratory works. Summative assessment: exam.