

## Description of Discipline

Title of Discipline: <i>Econometrics</i>					
Semester	Duration	Type of Discipline	ECTS Credits	Academic Workload	Language of Instruction
5	180 hrs.	optional	6	50 hours of classroom training, 130 hours of self-study	Ukrainian

Learning Outcomes	Teaching Methods	Evaluation Methods
LO7. The ability to apply economic and mathematical methods and models to solve economic problems.	Lectures, presentation, watching videos, doing exercises, practice	Colloquium, reports, graphic methods, exam
LO 11. To identify sources and understand the methods to determine and obtain social-economic data, collect and analyze relevant information, calculate economic and social indicators.	Lectures, explanation, watching videos, work with literary sources, exercises and practice	Oral and written evaluation, reports, exam
LO16. The ability of abstract thinking, analysis and synthesis to identify key characteristics of economic systems of different levels as well as behavior features of their business entities.	Presentation, explanation, exercises, problem educational tasks	Combined evaluation, presentations, reports, exam

Title of Discipline / <b>Econometrics</b>				
Semester	Duration	Type of Discipline	ECTS Credits	Student Workload
5	150 hrs.	mandatory	5	40 hours of teaching, 110 hours of self-study

Requirements for Participation	Type of examination (oral, written, term paper, etc.)	Methods of teaching and learning (lectures, seminars, etc.)	Discipline Coordinator
Complete general secondary education	Written exam	Lectures, laboratory work	Yu. Peretiatko

Learning Outcomes
GC3. Ability to abstract thinking, analysis and synthesis.

GC4. Ability to apply knowledge in practical situations.  
GC5. Ability to communicate in the state language both orally and in writing.  
GC7. Skills in the use of information and communication technologies.  
GC8. Ability to search, process and analyze information from various sources.  
GC9. Ability to adapt and act in a new situation.  
GC11. Ability to make informed decisions.

SC1. Ability to show knowledge and understanding of the problems of the subject area, the basics of the modern economy at the micro, meso, macro and international levels.  
SC4. Ability to explain economic and social processes and phenomena on the basis of theoretical models, analyze and interpret the results.  
SC6. Ability to apply economic and mathematical methods and models to solve economic problems.  
SK7. Ability to use computer technology and data processing software to solve economic problems, analyze information and prepare analytical reports.  
SC9. Ability to predict socio-economic processes on the basis of standard theoretical and econometric models.  
SC10. Ability to use modern sources of economic, social, managerial, accounting information for the preparation of official documents and analytical reports.  
SC11. Ability to substantiate economic decisions on the basis of understanding the laws of economic systems and processes and using modern methodological tools.  
SC12. The ability to independently identify problems of an economic nature in the analysis of specific situations, to suggest ways to solve them.  
SC14. Ability to analyze in depth problems and phenomena in one or more professional areas, taking into account economic risks and possible socio-economic consequences.  
SC17. Have methods, techniques and tools for assessing the results of the functioning and development of economic systems at the micro, meso, macro levels.  
SC27. Ability to prepare information, choose the type of model, calculate its parameters and assess adequacy.

PLO5. Apply analytical and methodological tools to substantiate proposals and make management decisions by various economic agents (individuals, households, enterprises and public authorities).  
PLO6. Use professional reasoning to convey information, ideas, problems and ways to solve them to professionals and non-specialists in the field of economic activity.  
PLO7. Apply appropriate economic and mathematical methods and models to solve economic problems.  
PLO9. To analyze the functioning and development of economic entities, to determine the functional areas, to calculate the relevant indicators that characterize the effectiveness of their activities.  
PLO11. Identify sources and understand the methodology for determining and methods of obtaining socio-economic data, collect and analyze the necessary information, calculate economic and social indicators.  
PLO15. Use information and communication technologies to solve socio-economic problems, prepare and present analytical reports.  
PLO16. Be able to think abstractly, apply analysis and synthesis to identify key characteristics of economic systems at different levels, as well as the behavior of their subjects.  
PLO31. Master the skills of oral and written professional communication in state and foreign languages.  
PLO36. Ability to present and discuss the results obtained and transfer the acquired knowledge.

## Contents

### **MODULE 1. THE ESSENCE AND METHODOLOGICAL FOUNDATIONS OF ECONOMETRIC MODELING**

Topic 1. The subject of econometrics. Methods of econometric research  
Topic 2. Simple and multiple linear regression. The method of least squares.  
Topic 3. Multiple linear regression. Hypotheses testing

### **MODULE 2. THE MAIN ASSUMPTIONS OF MULTIVARIATE REGRESSION ANALYSIS**

Topic 4. Multicollinearity and its impact on assessing model parameters

Topic 5. Heteroscedasticity. Generalized method of least squares.  
 Topic 6. Construction of auto-correlated econometric model  
 Topic 7. Economic dynamic models with continuous time

**Exemplary Literature**

**Primary**

1. Lukyanenko I.G., Krasnikova L.I. Econometrics: Workshop using a computer.- K .: TV "Knowledge", KOO, 1998. - 220p.
2. Nakonechny S.I., Tereshchenko T.O., Romanyuk T.P. Econometrics: Textbook.-2nd ed. - K.: KNEU, 2000. - 296p.
3. Nakonechny S.I., Tereshchenko T.O., Romanyuk T.P. Econometrics: Textbook.-Ed. 3rd. - K.: KNEU, 2004. - 520 p.
4. Nazarenko O.M. Fundamentals of econometrics: Textbook.- Kyiv: Center for Educational Literature, 2004. - P. 255-259.

**Supplementary**

5. Karimov I.K. Information and computing systems in economics: Textbook - 2nd ed. - Dniprodzerzhynsk: DSTU, 2013. - 279

**Web resources**

1. State Statistics Service of Ukraine - [ukrstat.gov.ua](http://ukrstat.gov.ua)

Academic staff

<b>Name</b>	<b>Academic degree</b>	<b>Position</b>	<b>Qualification / Academic Discipline</b>	<b>Full-time / Part-time</b>	<b>Area of Teaching</b>
Peretiatko Yuliia Mytrofanivna	PhD in Economics	Associate Professor at the Department of Accounting, Taxation and Audit	Chernihiv National University of Techonology (2006), specialty – Accounting and Audit, qualification – Specialist in Accounting and Audit; PhD in Economics, 08.00.09 Accounting, Analysis and Audit (by the types of economic activity)	Full-time	Econometrics