



Lecturer of the course

Contact information of the lecturer (e-mail)

Course page on eLearn

COURSE SYLLABUS

«Statistics»

Degree of higher education - Bachelor

Specialty: 051 “Economics”

Academic programme “International Economics”

Academic year 1-2, semester 2,3

Form of Study Full-time (full-time, extramural)

Number of ECTS credits 6

Language of instruction English (Ukrainian, English, German)

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<https://elearn.nubip.edu.ua/course/view.php?id=1722>

COURSE DESCRIPTION

Today Ukraine has a vector of association to the European world space and the creation of a European higher education. Educational activities of each institution of higher education should be aimed at training professionals that could quickly adapt to real conditions and put into practice the theoretical knowledge's acquired during the training.

In the system of economic education statistics is as a place of study subjects due to its role in the research and practice community.

Statistics as social science studies the quantitative aspect of mass public phenomenon's in close connection with their qualitative side, investigates the quantitative expression patterns of social development in specific circumstances of time and place.

Studied the subject “Statistics” will allow students of economic specialties to learn the basic techniques and methods of evaluation of mass social-economical phenomena's and processes taking place in the society and in Ukraine in particular, to explore domestic and international experience in the implementation of statistical surveys.

The main **purpose** of the study course “Statistics” is the formation in students theoretical knowledge's and practical skills in statistical analysis of mass socio- economic phenomena's and processes as a basis for developing and supporting management decisions that provide knowledge about method of collecting, processing and analysis, identification and assessment patterns

development and interaction inherently complex socio-economic phenomena's and processes.

Tasks of the course are study the major categories, concepts, systems, tools and algorithms for statistics; acquirement practical skills solving specific statistical tasks; acquaintance with the scientific principles of fundamental laws of statistical techniques and methodologies; develop abilities of creative search the ways to improve production and business enterprises, socio-economic development with the use of key indicators, techniques and methods of statistics.

Acquisition of competencies:

Integrated competency (IC): the ability to solve complex specialized tasks and practical problems in the economic sphere, which are characterized by the complexity and uncertainty of conditions, which involves the application of theories and methods of economic science.

General competencies (GC):

GC 3. Ability to abstract thinking, analysis and synthesis.

GC 7. Information and communication skills technologies.

GC 8. Ability to search, process and analyze information from various sources.

Special (professional) competencies (SC):

SC 6. Ability to apply economic and mathematical methods and models for solving economic problems.

SC 7. Ability to use computer technologies and data processing software to solve economic tasks, information analysis and preparation analytical reports.

SC 8. The ability to analyze and solve problems in the field of economic and social and labor relations.

SC 9. Ability to predict based on standard theoretical and econometric models of socio-economic processes.

Program learning outcomes (PLO):

PLO 5. Apply analytical and methodical toolkit for substantiating proposals and acceptance management decisions by various economic agents (individuals, households, enterprises and by state authorities).

PLO 8. Apply relevant economic and mathematical methods and models for solving economic problems.

PLO 19. Use information and communication technologies to solve socio-economic problems, prepare and present analytical reports.

COURSE STRUCTURE

Topic	Hours (lectures/ labs, practical classes, seminars)	Learning outcomes	Tasks	Assessment
Semester 2				
Module 1				
Topic 1. Methodological Principles of Statistics	2/2	<p>To know object of Statistics, its main category. Statistical methodology.</p> <p>To be able doing statistical observation as method of information providing. Program-methodology questions of statistical observation. Organize questions of statistical observation. Forms, kinds and methods of observation.</p> <p>To know the essence of statistical bunching, classification and grouping. Principles of forming groups. Statistical tables.</p> <p>Essence and kind of statistical indexes. Absolute statistical value. Relative values. Average indexes. System of statistical indexes.</p>	<p>Delivery of laboratory or practical work. Writing tests, essays. Doing independent work (including in elearn system) Problem solving, etc.</p>	<p>Execution and delivery of practical works - credited.</p> <p>Module: descriptive part 100; test part 30 * 0.1; Independent work - according to the evaluation journal in eLearn</p>
Topic 2. Statistical observation	2/2			
Topic 3. Compilation and grouping (bunching) of statistical data. Statistical tables	2/4			
Topic 4. Analysis of the forms of statistical series distribution and their graphical representation	2/2			
Topic 5. Generalizing statistical indicators	2/2			
Topic 6. Analysis of variation	2/4			
Topic 7. Forms of statistical distribution	2/2			
Module 2				
Topic 8. Statistical methods for measuring correlation	2/2	<p>To know kinds of interconnections. Regression analysis. Value of tightness and verification of the essence of correlation connection. Rang correlation.</p> <p>To know Characteristics of main tendency of development. Value of fluctuation and dynamic constancy. To be able doing correlation of dynamic row.</p> <p>To know essence and functions of indexes. Methodological bases of bunching indexes</p>	<p>Delivery of laboratory or practical work. Writing tests, essays. Doing independent work (including in elearn system) Problem solving, etc.</p>	<p>Execution and delivery of practical works - credited.</p> <p>Module: descriptive part 100; test part 30 * 0.1; Independent work - according to the evaluation journal in eLearn</p>
Topic 9. Statistical methods for measuring correlation	6/6			
Topic 10. Time series and their analysis	4/4			
Topic 11. Analysis of trends and fluctuations	2/4			
Topic 12. Statistical tables and graphs	2/2			

		structure. Aggregate form of indexes and average weighted indexes. Interconnection of indexes. Average indexes. To know role and meaning of graphical method. Main elements of graphics. Rules of structure of statistical graphs. Kinds of statistical graphs.		
Total for 2 Semester				70
Test				30
Semester 3				
Module 3				
Topic 13. Subject and method of agricultural statistics	2/4	To know object, tasks and system of statistics for animal husbandry. Statistics of quantity and structure of agrarian animals. Indexes of movement and reproduction of animals. Natural indexes of livestock production. Modern organize of statistical observation of livestock in Ukraine. Main directions and methods of economic-statistical analysis about pattern and development of animal husbandry. To know indexes of statistics of fixed assets. Statistics of production and energetic equipment. Statistics of productivity and remuneration. Statistics of agricultural production efficiency.	Delivery of laboratory or practical work. Writing tests, essays. Doing independent work (including in elearn system) Problem solving, etc.	Execution and delivery of practical works - credited. Module: descriptive part 100; test part 30 * 0.1; Independent work - according to the evaluation journal in eLearn
Topic 14. Index Analysis	4/4			
Topic 15. Crop statistics	2/4			
Topic 16. Livestock statistics	2/4			
Topic 17. Statistics of production resources and efficiency of agricultural production	4/4			
Module 4				
Topic 18. Statistics of agricultural products	4/4	To know subject and task of agricultural products. Gross product, its composition and methods of determining. Estimation of gross output. Indicators of income and profitability To study the essence and types of prices. Indicators of the level	Delivery of laboratory or practical work. Writing tests, essays. Doing independent work (including in elearn system) Problem	Execution and delivery of practical works - credited. Module: descriptive part 100; test part 30 * 0.1; Independent
Topic 19. Statistics of market goods and services	4/4			
Topic 20. Finance statistics	4/4			
Topic 21. Price and inflation statistics	2/4			
Topic 22. Statistics of investments and securities	2/3			

	and structure of prices. Indicators of price dynamics and inflation. To know subject of market statistics and services. Basic concepts and classifications. Statistics of commodity flows. Statistical monitoring of commodity market conjuncture. To learn and know the state budget statistics. Money circulation statistics. Statistics of investment activity. Statistics of credit activity. Statistics of insurance activity.	solving, etc.	work - according to the evaluation journal in eLearn
In total for the 3rd semester, $0.7 \cdot (R(1)CM + \dots + R(n)CM)$ educational work			70
Opportunity to get extra points	Additional points can be achieved for presentation and participation in a student conference, article publication, participation in the 1st round of the olympiads, etc.		up to 10
Exam			30
Total for the course $R_{course} = R_{edw} + R_{ex}$			100

ASSESSMENT POLICY

<i>Policy regarding deadlines and resits</i>	Assignments submitted after the deadline without valid reasons will be graded lower. Resitting of modules will be allowed with the permission from the lecturer and in the presence of valid reasons (e.g. medical reasons).
<i>Academic honesty policy:</i>	Cheating during tests and exams is strictly prohibited (including the use of mobile devices). Coursework and research papers must contain correct citations for all sources used.
<i>Attendance policy</i>	Class attendance is mandatory. In case of objective reasons (such as illness or international internships), individual learning may be allowed (in online format by the approval of the dean of the faculty).

SCALE OF ASSESSMENT OF STUDENT KNOWLEDGE

Student rating, points	National grade based on exam results	
	exams	credits
90-100	excellent	credited
74-89	good	
60-73	satisfactory	
0-59	unsatisfactory	not credited

RECOMMENDED SOURCES OF INFORMATION

1. Anderson D.R., Sweeney D.J., Williams T.A. Statistics for Business & Economics, 14th Edition, Cengage Learning, 2019, 1120 p.
2. Hamulczuk M., Makarchuk O., Kuts T. Time-Varying Integration of Ukrainian Sunflower Oil Market with the EU Market. *Agris on-line (Papers in Economics and Informatics)*. 2021. Vol. XIII, №3. P. 35-49.
URL: <https://doi.org/10.7160/aol.2021.130304>
3. Hamulczuk M., Cherevyk D., Makarchuk O., Kuts T., Voliak L. Integration of Ukrainian grain markets with foreign markets during russia's invasion of Ukraine. *Zagadnienia Ekonomiki Rolnej Problems of Agricultural Economics*. 2023. Vol. 377(4). P. 1-25. URL: <https://doi.org/10.30858/zer/177396>
4. Illukkumbura A. Introduction to Regression Analysis (Easy Statistics), 2020, 121 p.
5. Kuts T., Makarchuk O. Environmental Awareness of students of National University of Life And Environmental Sciences (Nules) of Ukraine in the context of modern challenges, *Papers: Management, Economic Engineering in Agriculture & Rural Development*. 2023. Vol. 23 Issue 16, P. 363-370.
URL: https://managementjournal.usamv.ro/pdf/vol.23_2/Art42.pdf
6. Makarchuk O., Kuts T., Voliak L. Green economy in Ukraine: analysis and modelling of development in agriculture. *Grail of Science*, 2024. №46, pp. 264-270. URL: <https://archive.journal-grail.science/index.php/2710-3056/issue/view/29.11.2024/34>
7. Makarchuk O., Kuts T., Labenko O., Kuts O. Market evaluation of rapessed in Ukraine: perspectives and challenges. *Scientific Papers Series Management, Economic Engineering in Agriculture and Rural development*. 2024. Vol. 24 (4), pp. 505-513.
URL: https://managementjournal.usamv.ro/pdf/vol.24_4/volume_24_4_2024.pdf
8. Makarchuk O. Sunflower oil market in Ukraine: state and challenges. *Біоекономіка і аграрний бізнес*. 2022 р., НУБіП України. 2022. №2. С. 100-110. URL: <https://economicscience.com.ua/uk/journals/t-13-2-2022/rinok-sonyashnikovoyi-oliyi-v-ukrayini-stan-ta-vikliki>
9. Quirk T. *Excel 2019 in Applied Statistics for High School Students: A Guide to Solving Practical Problems (Excel for Statistics) 2nd ed.*, Springer, 2021, 264 p.
10. Вінничук О. Ю., Григорків М. В., Маханець Л. Л. Статистика: тестові завдання: навч. посібник. Чернівці : Чернівецький нац. ун-т, 2023. 180 с.
11. Горкавий В.К. Статистика: підручник. Третє вид., переробл. і доповн. Київ: Алерта, 2020. 644 с.
12. Городянська Л.В., Сизов А.І. Статистика для економістів: навчальний посібник. Київ: Нац. ун-т ім. Т.Шевченка, 2019. 350 с.
13. Григорків В.С., Вінничук О.Ю., Григорків М.В., Маханець Л.Л. Статистика: основи теорії та практиcum: навчальний посібник. Чернівці: Чернівец. нац. ун-т, 2022. 304 с.
14. Козирєва О.В., Федорова В.О. Статистика: навчальний посібник. Х.: Видавництво Іванченка І.С., 2021. 187 с.

15. Кушнір Н.Б. Статистика: навчальний посібник. Київ: Центр учбової літератури, 2019. 208 с.
16. Мармоза А.Т. Практикум з теорії статистики і сільськогосподарської статистики: Навч.посіб. Центр навчальної літератури, 2019. 664 с.
17. Мармоза А.Т. Теорія статистики: Навч. посібник. К.: ЦУЛ, 2019.592 с.
18. Методологічні положення зі статистики.
URL: https://ukrstat.gov.ua/metod_polog/old/titul_old.html
19. Опря А.Т., Дорогань-Писаренко Л.О., Єгорова О.В., Кононенко Ж.А. Статистика (модульний варіант з програмованою формою контролю знань). Навчальний посібник. Підручник. К.: Центр навчальної літератури, 2019. 536 с
20. Офіційний сайт Державної служби статистики України.
URL: <http://ukrstat.gov.ua/>
21. Офіційний сайт Державної служби України з питань праці.
URL: <https://dsp.gov.ua/>
22. Офіційний сайт Євростату.
URL: <http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home>
23. Офіційний сайт Кабінету Міністрів України.
URL: <http://www.kmu.gov.ua/control/>
24. Офіційний сайт Міністерства економічного розвитку і торгівлі України. URL: <http://www.kmu.gov.ua>
25. Офіційний сайт Продовольчої та сільськогосподарської організації ООН (ФАО). URL: <http://www.fao.org/>
26. Офіційний сайт Світового банку. URL: <http://www.worldbank.org/>
27. Педченко Г. П. Статистика: навчальний посібник. Мелітополь: Колор Принт, 2018. 266 с.
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29. Провост Ф., Фоусет Т. Data Science для бізнесу. Як збирати, аналізувати і використовувати дані. Видавництво: Наш формат, 2019 . 400 с.
30. Скрипник А. В., Галаєва Л. В., Коваль Т. В., Шульга Н. Г. Практикум «Теорія ймовірностей». Навч. пос. Київ: ВЦ «Компринт», 2019. 464 с.
31. Статистика : підручник. Колектив авторів: С. І. Пирожков, В. В. Рязанцева, Р. М. Моторин та ін. Київ : Київ. нац. торг.-екон. ун-т, 2020. 328 с.
32. Статистико-аналітичне забезпечення управління інноваційним розвитком економічних суб'єктів. За заг. ред. В.К. Савчука. К.: ФОП Ямчинський О. 2020. 385 с.
33. Ткач Є. І., Сторожук В. Загальна теорія статистики: підручник. Київ: Центр навчальної літератури, 2019. 442 с.
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36. Чекотовський Е. В. Статистика з Microsoft Excel 2016: навч. посіб. Київ: Знання України, 2019. 811 с.