PJSC "Higher Educational Institution
"INTERREGIONAL ACADEMY OF PERSONNEL MANAGEMENT"

МАУП

SYLLABUS
of the academic discipline

STATISTICS

Level of higher education: first (bachelor's) level

Field of knowledge: D Business, Administration and Law

Specialty: D3 Management

Study program: Management

IAPM 2025

General information about the academic discipline

Name of the academic discipline	Statistics
Code and name of the specialty	D3 Management
Level of higher education	First (bachelor's) level
Discipline status	Compulsory
Number of credits and hours	4 credits/120 hours Lectures: 34 hours Practical classes: 16 hours Independent work: 70 hours
Terms of study of the discipline	3 semester
Language of instruction	Ukrainian
Final control type	Exam

General information about the instructor. Contact information.

Full name of the instructor	
Academic degree	
Position	
Areas of scientific research	
Links to the registers of identifiers for scientists	
Contact information	
E-mail:	
Department phone	
Instructor's portfolio on the website	

Discipline's description.

The course "Statistics" aims to provide students with a systematic understanding of methods for collecting, processing, analysing and interpreting statistical data. The course covers the basic concepts and categories of statistics, including descriptive statistics, sampling theory, elements of probability theory, as well as methods of analysis of variance, correlation and regression. Particular attention is paid to the application of statistical methods in the practice of socio-economic research and enterprise management.

The course includes both theoretical training and practical skills in working with statistical data, including the use of modern software for analysis (e.g., Excel, SPSS,

R). The course promotes the development of analytical thinking and the ability to make informed decisions based on statistical conclusions.
Upon completion of the course, students will be able to independently perform statistical analysis, interpret research results, and apply the knowledge gained in their professional activities.

The subject of the discipline: quantitative and qualitative aspects of mass socio-economic, social, and natural phenomena and processes that are closely related to the specific conditions of the place and time of their occurrence and development.

The aim of the discipline: to train highly qualified specialists capable of solving practical problems and complex specialised tasks in entrepreneurship, trade and stock exchange activities, to provide knowledge of statistical methods for researching economic and social processes in society, skills in the practical solution of statistical problems using modern computer technology and problem-oriented application software packages.

The objectives of the discipline:

1. Familiarization with the theoretical foundations of statistics — formation of knowledge about methods of studying mass phenomena, their quantitative characteristics and patterns;
2. Acquisition of practical skills in data collection, processing and analysis — the ability to work with primary information, compile tables, graphs, calculate statistical indicators;
3. Study methods of analysing the structure, variation, dynamics and interrelationships of phenomena — using average, relative, variation and index indicators, as well as methods of correlation and regression analysis;
4. Mastering the methodology of statistical generalisations — studying the sampling method, estimating the parameters of the general population, constructing confidence intervals, testing statistical hypotheses;
5. Formation of analytical thinking — the ability to interpret the results of statistical analysis and make informed conclusions for management decisions;
6. Application of statistical methods in professional activities — the use of statistics for the study of socio-economic processes, business analytics, enterprise management or the development of public policy.

Prerequisites for the discipline:
microeconomics, macroeconomics, advanced mathematics.

Post-requisites for the discipline:
the following disciplines continue the study of this subject: “Finance”, “Financial Statistics”, “Business Analysis”, “Business Economics”, “Fundamentals of Scientific Research”, “Business Reporting”, “Insurance”.

Program competences

General competencies	GC3. Ability for abstract thinking, analysis, and synthesis. GC4. Ability to apply knowledge in practical situations. GC8. Skills in using information and communication technologies. GC10. Ability to conduct research at the appropriate level.
Special competences	SC2. Ability to analyze the performance results of an organization and compare them with the influencing factors of the external and internal environment. SC12. Ability to analyze and structure organizational problems and develop well-founded decisions. SC17. Ability to independently identify economic problems and propose ways to solve them for analysis, forecasting, planning and optimization in management.
Intended learning outcomes	ILO6. Demonstrate skills in searching for, collecting, and analyzing information, and calculating indicators to justify managerial decisions. ILO11. Demonstrate the ability to analyze situations and communicate effectively across various areas of organizational activity. ILO19. Demonstrate the ability to initiate, develop and implement business projects and start-ups using the principles of project management, methods of strategic analysis and business intelligence to ensure the competitiveness of the organization.

Content of the academic discipline

№	**Topics**	**Number of hours, of which :**			**Teaching methods /assessment methods**
		Lectures	**Seminars**	**Independent work**	
3rd semester **Content module 1. Subject and methods of statistical science, main stages of statistical research, introduction to statistical indicators**					**Teaching methods**: verbal (lecture; conversation; educational discussion); inductive method; deductive method; tradutive method; analytical; synthetic; practical (working with legal case studies); explanatory-illustrative; reproductive;
Topic 1	Subject and methods of statistical science.	3	2	6	
Topic 2	Organisation of statistical observation.	3	1	8	

Topic 3	Compilation and grouping of statistical data.	3	1	6	problem-based teaching method; partial-search; research; interactive methods (situation analysis; discussions, debates, polemics; dialogue, synthesis of opinions; brainstorming; skills practice; situational modelling, working through discussion questions); modelling professional activity; innovative teaching methods (competence-based; project-based research); case method. **Assessment methods**: oral assessment (oral questioning, assessment of participation in discussions and other interactive teaching methods); written assessment (tests, independent work, essays); test assessment (closed-form tests: multiple-choice tests, matching tests); self-assessment and self-evaluation method; assessment of case studies.
Topic 4	Statistical indicators: absolute, relative and average values.	4	2	8	
Topic 5	The significance of average values in economic analysis.	4	2	6	
Content module 2. Conducting statistical research analysis using basic statistical methods and indicators					
Topic 6	Variation indicators and the basics of variance analysis.	3	1	6	
Topic 7	Selective observation, reasons and conditions for its application.	4	1	8	
Topic 8	Dynamic series.	3	2	8	
Topic 9	Application of the index method	3	2	8	
Topic 10	Statistical methods for measuring communication.	4	2	6	
Modular test					
Total:		34	16	70	
Final assessment: exam					

Technical equipment and/or software – official website of IAPM:

http://IAPM.com.ua The educational process involves the use of classrooms, a library, a multimedia projector, and a computer for conducting lectures and seminars with presentation elements. Studying individual topics and completing practical tasks requires access to internet resources, which is provided through a free Wi-Fi network.

Forms and methods of assessment.

Assessment of students' academic performance is divided into ongoing and final (semester) assessment.

Ongoing assessment is conducted during practical (seminar) classes and is aimed at systematically checking the understanding and assimilation of theoretical material, as well as the ability to apply theoretical knowledge when completing practical tasks. The possibilities of ongoing assessment are extensive: it can support learning motivation, stimulate educational and cognitive activity, enable a differentiated approach to teaching, and ensure individualization of the learning process.

Forms of student participation in the educational process subject to ongoing assessment include:

- oral reports;
- comments and questions to the speaker;

- consistent performance in seminar classes and active participation in discussions;
- participation in debates and interactive learning activities;
- analysis of legislation and academic literature;
- written assignments (tests, quizzes, creative tasks, essays, etc.);
- preparation of theses and summaries of academic or scientific texts;
- independent study of course topics.

Methods of ongoing assessment include: oral assessment (interview, discussion, report, presentation, etc.); written assessment (tests, essays, written presentations on assigned topics, etc.); combined assessment; presentation of independent work; observation as a method of assessment; testing; analysis of problem situations.

Grading system and requirements.
Table of distribution of points received by students

	Ongoing knowledge assessment										Modular assessment task	Exam	Total points
Topics	Topic 1	Topic 2	Topic 3	Topic 4	Topic 5	Topic 6	Topic 7	Topic 8	Topic 9	Topic 10	20	40	100
Work in a seminar	3	3	3	3	3	3	3	3	3	3			
Independent work	1	1	1	1	1	1	1	1	1	1			

The table contains information about the maximum points for each type of assignment.

When assessing the mastery of each topic within ongoing educational activities, students receive marks in accordance with the approved assessment criteria for the respective discipline.

The criteria for evaluating learning outcomes and the distribution of points are regulated by the Regulations on the Assessment of Students' Academic Achievements at PJSC "HEI IAPM".

Modular assessment. Modular assessment in the discipline "Statistics" is conducted in written form as testing using closed-type test items, including alternative and matching formats.

Criteria for evaluating the modular test in the academic discipline "Statistics":

When evaluating the modular test, the volume and correctness of the completed tasks are taken into account:

- the grade "excellent" (A) is given for the correct completion of all tasks (or more than 90% of all tasks);
- the grade "good" (B) is given for the completion of 80% of all tasks;
- the grade "good" (C) is given for the completion of 70% of all tasks;
- the grade "satisfactory" (D) is given if 60% of the proposed tasks are completed correctly;
- the grade "satisfactory" (E) is given if more than 50% of the proposed tasks are completed correctly;
- the grade "unsatisfactory" (FX) is given if less than 50% of the tasks are completed.

Absence from the modular test work - 0 points.

The above grades are transformed into rating points as follows:
"A" - 18-20 points;
"B" - 16-17 points;
"C" - 14-15 points;
"D" - 12-13 points.
"E" - 10-11 points;
"FX" - less than 10 points.

The final semester assessment in the academic discipline “Statistics” is a mandatory form of evaluating student learning outcomes. It is conducted within the period established by the academic schedule and covers the volume of material defined in the course syllabus.

The final assessment is administered in the form of an exam. A student is admitted to the exam only if all required coursework specified in the syllabus has been completed.

The final (semester) grade for a discipline assessed by examination consists of two components: the results of ongoing assessment and the exam grade.

The maximum number of points for ongoing assessment is 60, and the maximum for the exam is 40.

The minimum number of points required to pass the exam is 25.

The grade for ongoing assessment is formed as the sum of rating points earned by the student during seminar/practical classes and any incentive (bonus) points, if applicable.

After evaluating a student’s exam responses, the instructor adds the exam score to the points earned for ongoing assessment to determine the final grade for the course.

Scale for the assessment of exam tasks

Scale	Total points	Criteria
Excellent level	30–40	The task is completed with high quality; the student has achieved the maximum score in the assessment of theoretical knowledge.

Good level	20–29	The task is completed with high quality and a sufficiently high proportion of correct answers.
Satisfactory level	10–19	The task is completed with an average number of correct answers; the student has demonstrated theoretical knowledge with significant errors.
Unsatisfactory level	0–9	The task is not completed; the student has demonstrated theoretical knowledge with major errors.

Assessment of additional (individual) types of educational activities. Additional (individual) types of educational activity include student participation in scientific conferences, research societies and problem groups, preparation of publications, and other activities beyond the tasks defined in the syllabus of the academic discipline.

By decision of the department, students who engage in research work or complete certain types of additional (individual) educational activities may receive incentive (bonus) points for a specific educational component.

Incentive points are not mandatory and are not included in the standard point distribution table or the main assessment scale.

A single event may serve as the basis for awarding incentive points for only one educational component – the one to which it is most relevant.

Assessment of independent work

The total number of points earned by a student for completing independent work is one of the components of academic performance in the discipline. Independent work for each topic, in accordance with the course program, is evaluated within the range of 0 to 1 points using standardized and generalized knowledge assessment criteria.

Scale for evaluating the performance of independent work (individual tasks)

The maximum possible assessment of independent work (individual tasks)	Execution level			
	Excellent	Good	Satisfactory	Unsatisfactory
1	1	0,75	0,5	0

Forms of assessment include: ongoing assessment of practical work; ongoing assessment of knowledge acquisition based on oral responses, reports, presentations, and other forms of participation during practical (seminar) classes; individual or group projects requiring the development of practical skills and competencies (optional format); solving situational tasks; preparation of summaries on independently studied topics; testing or written examinations; preparation of draft articles, conference abstracts, and other publications; other forms that ensure comprehensive assimilation of the study program and contribute to the gradual development of skills for effective independent professional (practical, scientific, and theoretical) activity at a high level.

To assess the learning outcomes of a student during the semester, a 100-point, national and ECTS assessment scale is used

Summary assessment scale: national and ECTS

Total points for all types of learning activities	ECTS assessment	National scale assessment for exam, course project (work), internship	
		National scale assessment for exam, course project (work), internship	For pass/fail (credit)
90 – 100	A	excellent	pass
82 – 89	B	good	
75 – 81	C		
68 – 74	D	satisfactory	
60 – 67	E		
35 – 59	FX	unsatisfactory with the possibility of retaking	fail unsatisfactory with the possibility of retaking
0 – 34	F	unsatisfactory with mandatory re-study of the discipline	fail unsatisfactory with mandatory re-study of the discipline

Discipline's Policy:

- regularly attend lectures and practical classes;
- work systematically and actively in lectures and practical classes;
- catch-up on missed classes;
- perform the tasks required by the syllabus in full and with appropriate quality;
- perform control and other independent work;
- adhere to the norms of academic behaviour and ethics.

The academic discipline "Statistics" requires adherence to the principles of ethics and academic integrity, with particular emphasis on preventing plagiarism in all its forms. All written assignments, reports, essays, abstracts, and presentations must be original, authored by the student, and not overloaded with quotations, which must be accompanied by references to primary sources. Violations of academic integrity include academic plagiarism, self-plagiarism, fabrication, falsification, copying, deception, bribery, and biased evaluation.

Student assessment is based on participation and activity in seminar/practical classes, completion of independent work tasks, and performance of assignments aimed at developing practical skills and competencies. Additional (bonus) points may be awarded for activities such as participation in round-table discussions, scientific conferences, or student research competitions.

Methodological support of the academic discipline

Teaching and methodological support for the discipline includes lecture notes, methodological guidelines for conducting practical (seminar) classes, and methodological recommendations for students' independent work in the academic discipline "Statistics".

Recommended sources of information:

Basic literature:

1. Begun S. I. Statistics: textbook. Lutsk: Volyn University named after Lesya Ukrainka, 2022. 230 p.
2. Haidenko S. M., Kostyuk V. O. Business Statistics: Textbook. Kharkiv: O. M. Beketov National University of Urban Economy, 2023. 190 p.
3. Gerasymenko, S. S., Golubova, G. V., Potapova, M. Yu., Chervona, S. P. Statistics: textbook. / Edited by O. G. Osauhlenko. Kyiv: NASAA, 2022. 265 p.
4. Godia I. Statistics: Methodological Publication for First-Year (Bachelor's) Students. Uzhhorod: UzhNU, 2023.
5. Gorkavyi V. K. Statistics: textbook. 3rd ed., revised and supplemented. Kyiv: Alerta, 2020. 644 p.
6. Dorogan-Pysarenko L. O., Yegorova O. V., Rudych A. I. Statistics: textbook. Poltava: RVV PDAU, 2021. 300 p.
7. Kozyreva O. V., Fedorova V. O. Statistics: textbook. Kharkiv: Ivanchenko I. S. Publishing House, 2021. 187 p.
8. Pedchenko G. P., Zavadskikh G. M., Prus Yu. O. Statistics: lecture course. Melitopol: Lux, 2021. 223 p.

Additional literature:

1. Karpenko L. M. Statistics: textbook. Odessa: ORIDU NADU, 2019. 184 p.
2. Oprya A. T. Statistics: Textbook. Kyiv: TsNL, 2012. 448 p.
3. Pidlypna R., Pidlypny Y., Indus K. The use of statistical methods in financial management to optimise management decision-making. *Young Scientist*, 2024. No. 4(128). pp. 215–220.
4. Chmut A. V. Business Statistics: Textbook. For 1st (bachelor's) level students, specialisation 073 "Management". Ivano-Frankivsk, 2023.
5. Shenderivska L. P., Huk O. V., Mokhonko G. A. Business Statistics: Recommendations for Coursework. Kyiv: I. Sikorsky KPI, 2023.
6. Bruce P., Bruce A., Gedeck P. Practical Statistics for Data Scientists. 2nd ed. O'Reilly Media, 2020. 340 p.
7. Mendenhall W., Beaver R. J., Beaver B. M. Introduction to Probability and Statistics. 15th ed. Cengage Learning, 2020.

Information resources:

1. State Statistics Service of Ukraine (SSSU) – official web portal of statistical data of Ukraine. URL: https://stat.gov.ua./
2. National Bank of Ukraine (NBU). URL: https://bank.gov.ua./
3. Eurostat – statistical agency of the European Union. URL: https://ec.europa.eu/eurostat
4. International Monetary Fund (IMF) – official website with macroeconomic data URL: https://www.imf.org/en/Home
5. United Nations Statistics Division. URL: https://unstats.un.org/UNSDWebsite/
6. International Statistical Institute (ISI). URL: https://isi-web.org/