SYLLABUS OF THE COURSE
ECONOMIC AND MATHEMATICAL METHODS AND MODELS

Level of higher education first (bachelor's).
Specialty 051 Economics, 071 Accounting and taxation, 072 Finance, banking and insurance, 073 Management, 075 Marketing, 076 Entrepreneurship, trade and exchange activities, 241 Hotel and restaurant business, 242 Tourism, 281 Public administration and administration
Educational program Economics, International Economics, Marketing, Public Administration
Discipline status - required.

Lecturer of the Department of Marketing and Communication Design Ponomarenko IV, Associate Professor

1. Course abstract
Semester: _____5_____.
Amount: total number of hours - 180 of them: lectures - 34 hours, laboratory - 56 hours, independent work of the student - 90 hours; number of ECTS credits - 6
Course purpose - acquisition of competencies: "ability to identify, pose and solve problems", "ability to search, process and analyze information from various sources", "ability to use modern information and communication technologies, general and special purpose software packages", "ability to provide the appropriate level development and use of management products, services or processes "," ability to provide information and analytical support of management processes using modern information resources and technologies "," ability to use electronic document management system "," ability to research and exploration in public administration and administration ».

Learning outcomes of the discipline:
to know: the essence of economic and mathematical modeling and its stages; methods: testing of economic information, estimation of parameters of economic model, estimation of reliability of models and its parameters, estimation of forecast properties of model,
to be able: "Be able to search and summarize information, draw conclusions and formulate recommendations within their competence" to search and generalize information, draw conclusions and formulate recommendations within their competence; use modern methods of scientific knowledge and carry out research in the field of public administration and administration.
to be able to demonstrate: "Demonstrate a wide range of cognitive and intellectual skills in the formation, improvement and implementation of information support of public administration and administration", a wide range of cognitive and intellectual skills in the formation, improvement and implementation of information support of public administration and administration; the ability to ensure the appropriate level of development and use of management products, services or processes; ability to research and exploration in the field of public administration
have the skills: "Have computer skills, use information technology to implement accounting procedures using specialized information systems and computer technology", "use modern methods of scientific knowledge and conduct research in the field of public administration and administration" work with a computer , use information technology to implement accounting procedures using specialized information systems and computer technology; ability to carry out information and analytical support of management processes with the use of modern information resources and technologies and the ability to use the system of electronic document management.
decide for yourself: tasks of building economic and mathematical models and critically comprehend problems and solve complex problems in the field of public administration, "critically comprehend problems and solve complex problems in the field of public administration".

Required training components (prerequisites, co-requisites, post-requisites):economic informatics; information systems and technologies in economics; higher and applied mathematics; statistics

Course content: Topic 1. Subject, method and objectives of the course "econometrics". Topic 2. Methods of constructing a general linear model. Topic 3. Multicollinearity. Topic 4. Heteroskedasticity. Topic 5. Autocorrelation. Topic 6. Distributed lag models. Topic 7. Subject, features and areas of application of optimization methods and models in economics. Topic 8. General formulation of the problem of linear programming. Geometric interpretation and graphical method for solving linear programming problems. Topic 9. Simplex method of solving the problem of linear programming. Rationale for the method. Algorithm for obtaining valid and optimal plans. Topic 10. The concept of duality in linear programming. Statement of a dual problem of linear programming. Communication with a direct problem. The rule of constructing dual problems. Topic 11. Statement of the transport problem. Finding a valid baseline plan. Topic 12. The method of "branches and boundaries".

Forms of final control: exam (semester 5).

Tools for diagnosing learning success: individual tasks, calculation works, questions for current control, tests, questions for final control.

Language of instruction: Ukrainian, English.

2. Evaluation

Distribution of points received by applicants for higher education

Ongoing assessment and independent work												MK (test)	Examination	Sum
T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12			
5	5	5	5	5	5	10	10	10	10	5	5	10	10	100

The form of distribution of points in the discipline

Types of work evaluated in points	**T1**	**T2**	**T3**	**T4**	**T5**	**T6**	**T7**	**T8**	**T9**	**T10**	**T11**	**T12**	**Total**
Execution and protection of laboratory work etc.	-	10	10	10	10	10							80
Graphic works	-	-	-	-	-	-							-
Presentations / essays / exercises, etc.	-	-	-	-	-	-							-
Modular / current / thematic control	10												10
Examination	10												10
Total from the discipline													**100**

Exam evaluation criteria

The points on the exam are distributed as follows: 2 questions - 4 points, 3 tasks - 6 points.

Compliance with the scales for assessing the quality of learning material

Score on the national scale for the exam, KP, KR / credit /	Score in points	Assessment on the ECTS scale	Explanation
Excellent / credited	90-100	**AND**	**Perfectly** (excellent performance with only a small number of errors)
Good / credited	82-89	**IN**	**Very good** (above average with multiple errors)

	74-81	**WITH**	**Fine** (in general correct execution with a certain number of significant errors)
Satisfactory / credited	64-73	**D**	**Satisfactorily** (not bad, but with a significant number of shortcomings)
	60-63	**IS**	**Enough** (performance meets minimum criteria)
Unsatisfactory / not credited	35-59	**FX**	**Unsatisfactorily** (with the possibility of re-assembly)
	0-34	**F**	**Unsatisfactorily** (with mandatory re-study of the discipline)

3. Course policy:

3.1 Mandatory observance of academic integrity by applicants for higher education, namely:

- independent performance of all types of works, tasks, forms of control provided working program of this discipline;
- links to sources of information in the case of the use of ideas, developments, statements, information;
- compliance with the legislation on copyright and related rights;
- providing reliable information about the results of their own educational (scientific, creative) activities, used research methods and sources of information.

3.2 Recognition of learning outcomes obtained in non-formal education 10 points for taking a modeling course on the DataCamp platform is allowed.

3.3 To obtain a positive grade in the discipline, it is necessary to obtain the minimum number of points for each type of work, which is evaluated in points.

3.4 In case of untimely performance of works points are deducted according to duration of terms of a delay.

3.5 Postponement of delivery / re-submission:

- for good reasons (hospital, academic mobility, etc.).
- without good reason is assessed with a decrease in scores.

3.6 When plagiarism is detected, laboratory work is not counted.

3.7 Missed classes are practiced in accordance with the schedule of practice in the afternoon.

3.8 The evaluation appeal is conducted in accordance with the regulations of the Kyiv National University of Technology and Design.