SYLLABUS OF THE ACADEMIC DISCIPLINE
"Economic-mathematical methods and models"

Level of Higher Education **-** "Bachelor"
Field of Knowledge: 07 "Management and Administration"
Specialty: 072 "Finance, banking and insurance"
Educational and professional program of Study "Finance and Credit"
Year of Study**:** 3, Semester**:** 6
The form of study**:** Full-time study
The number of ECTS credits**:** 4
Language of instruction: English

Course Lecturer	**Liudmyla Galaieva (Галаєва Людмила Валентинівна)** Associate Professor, Ph.D., Department of Economy Cybernetics
Contact Information (e-mail)	**Office Phone:** 527-85-67; mob. (+38) 098 - 905 - 63 - 95 **e-mail:** lgalaeva@nubip.edu.ua
Virtual Office Hours (eLearn)	https://elearn.nubip.edu.ua/course/view.php?id=701

DESCRIPTION OF THE COURSE

The Academic Discipline "Economic-mathematical methods and models" belongs to series of disciplines that form the profile of the future specialist, equipping him with basic knowledge of the theory and practice in the application of economic and mathematical methods and models, because economic systems can't be effectively studied without using the modern theoretical methods and practical experiment.

The purpose of studying this course is to form future specialists in modern thinking and give them a system of fundamental theoretical knowledge of economic-mathematical methods and models, and applied practical skills using information technology tools (including MS Excel, etc.); acquiring skills in research and analysis of economic, financial processes and phenomena to make efficient management decisions.

The task of studying the discipline is theoretical and practical training of students on the methodology and methods of researching the economic, financial processes and phenomena using the tools of economic and mathematical modeling.

The discipline provides the formation of a number of competencies:

General competencies (GC):

GC2. Ability to apply knowledge in practical situation.
GC5. Skills in the use of information and communication technologies.
GC6. Ability to conduct research at the appropriate level.
GC8. Ability to search, process and analyze information from various sources.
GC12.The ability to work independently (autonomously).

Professional competencies of the specialty - Special competencies (SC):

SC4. Ability to apply economic and mathematical methods and models to solve financial problems.

SC6. Ability to use modern information and software to obtain and process data in the field of finance, banking and insurance.

SC7. Ability to compile and analyze financial statements

SC13. Ability to analyze and forecast the main trends in the agricultural sector with appropriate financial and credit support and insurance protection

Program learning outcomes (PLO):

PLO6. Apply economic and mathematical methods and models to solve financial problems.

PLO8. Apply specialized information systems, modern financial technologies and software products.

PLO9. Form and analyze financial statements and correctly interpret the information obtained.

PLO13. Possess general scientific and special methods of research of financial processes.

PLO16. Apply the acquired theoretical knowledge to solve practical problems and interpret the results meaningfully.

COURSE STRUCTURE

Topics	Hours (lectures / laboratory classes)	Learning outcomes	Tasks	Knowledge assessment
Semester # 6				
Module # 1				
Topic 1. The Subject of Mathematical Programming	1/2	To know the main concepts of Mathematical Programming: the modern theory; theorems, methods; essence and history of the academic discipline; studying the main methods for solving the problems of the course; realization of formal research received by the solver.	Performing practical tasks, self-study work using information technology tools in elearn.	10
Topic 2. Simplex Method. Dual Problem in Linear Programming.	2/4			20
Topic 3. Transportation Problem.	2/4			20
Topic 4. Special Tasks.	2/5			20
Test and task to Module # 1				30
Total (on the content of module # 1)				100
Module # 2				
Topic 5. Theoretical Basis of Mathematical Modelling.	2/5	To know the main concepts of Mathematical Modelling: the modern theory, studying the main types of models for solving the problems of the course; realization of formal research	Performing practical tasks, self-study work using information technology	20
Topic 6. The System of Models at research	2/5			20

of Production Processes in Agriculture.		received by the solver; performance of the analysis of the solution.	tools in elearn.	
Topic 7. Some sections of the Economic and Mathematical Modelling.	4/5			30
Test to Module # 2				**30**
Total (on the content of module # 2)				**100**
Total for educational work	$R_{EW} = \dfrac{0{,}7 \cdot (R_{MOD\,1} + R_{MOD\,2})}{2}$			**70**
Certification (**Exam**)				**30**
Total	$R_{DIC} = R_{EW} + R_{CER}$			**100**

EVALUATION POLICY

Deadline and reassembly policy:	Works that are submitted in violation of deadlines without good reason are evaluated at a lower grade. Relocation of modules takes place with the permission of the teachers who provide the course, if there are serious reasons (for example, hospital).
Academic Integrity Policy:	Copying of the text during written tests and exams is prohibited. The use of mobile devices is allowed only with the permission of the teacher during online testing and preparation of practical tasks. Self-Study works in the form of abstracts, reports, presentations must have correct text links to the information sources used.
Attendance Policy:	Attendance is mandatory. For objective reasons (for example, illness, international internship) training can take place individually at a distance (online form in agreement with the dean of the faculty and the lecturer of the course).

STUDENT EVALUATION SCALE

National Grade	Rating of the Higher Education Learners, Score
"Excellent"	90 - 100
"Good"	74 - 89
"Satisfactory"	60 - 73
"Failed"	0 - 59