



The syllabus of the discipline
«Mathematical methods and models of financial management»

Specialty	<i>051 «Economics»</i>
Educational program	<i>Economic Cybernetics</i>
Educational level	<i>second (master's)</i>
Discipline status	<i>Mandatory</i>
Language	<i>Ukrainian, English</i>
Year / semester	<i>IM course, 1 semester</i>
Number of ECTS credits	<i>Number of credits according to the curriculum – 5</i>
Distribution by types of classes and hours of study	<i>Lectures - 20 hours Laboratory - 20 hours Individual work - 110 hours</i>
Form of final control	<i>Examination</i>
Department	<i>Department of Economic Cybernetics and Systems Analysis, rm. 419 (main building), (057)702-06-74 (ext. 3-56), https://ek.hneu.edu.ua/</i>
Lecturer	<i>Guryanova Lidiya Semenivna, Head of Department of Economic Cybernetics and Systems Analysis, Doctor in Science, professor Gvozdytskyi Vitalii Serhiyovych, PhD</i>
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Class days	<i>Lessons schedule: http://services.hneu.edu.ua:8081/schedule/selection.jsf</i>
Consultations	<i>Consultation schedule: https://ek.hneu.edu.ua/</i>
The purpose of the discipline	
<p>The purpose of the discipline is to master the theoretical knowledge and mathematical tools for modelling the management of financial resources of enterprises, generalization of legislative aspects of enterprises in the financial market, substantiation of patterns and objective trends of interaction of total value of funds involved in the reproduction process and total money capital.</p>	
Prerequisites for training	
<p><i>List of previously listened disciplines: Business Economics, Management, Marketing, Finance, Accounting, Econometrics, Forecasting of socio-economic processes, Operations research and optimization methods</i></p>	
The content of the discipline	
<p>Content module 1. Theoretical and methodological aspects of financial management Theme 1. Theoretical and organizational foundations of financial management. The concept of the value of cash flows over time and its use in financial calculations Theme 2. Conceptual model of financial management system Theme 3. Methods of financial forecasting and planning of the enterprise Theme 4. Methods and models of analysis of financial statements Theme 5. Methods and models of cash flow management in the enterprise Theme 6. Methods and models of investment management Content module 2. Methods and models of financial management as a special branch of management Theme 7. Methods and models of asset management Theme 8. Cost and optimization of capital structure</p>	



Theme 9. Methods and models of profit management

Theme 10. Methods of financial risk management

Theme 11. Methods and models of crisis financial management in the enterprise

Software packages

MS Excel, Statistica, EViews, Vensim

**Course page on the Moodle platform
(personal training system (PTS))**

PTS contains: working program of the discipline, technological map, lecture notes, tasks for laboratory works and methodical recommendations for their performance, tasks for independent preparation, tasks for current and final control
<https://pns.hneu.edu.ua/enrol/index.php?id=4145>

Assessment of studying outcomes

The system of assessment of formed competencies of students takes into account the types of classes, which in accordance with the curriculum of the discipline include lectures, laboratory classes, as well as individual work. Assessment of the formed competencies of students is carried out according to the accumulative 100-point system.

The current control of this discipline is carried out in the following forms:

- active work in lectures;
- active participation in laboratory tasks;
- protection of individual homework;
- presentation of an individual research task;
- conducting current testing.

The current test control is conducted 7 times per semester. The test includes single and multiple choice questions to test knowledge of the main categories of the discipline.

Modular control in this discipline is conducted in the form of written control works 2 times per semester and includes theoretical and practical tasks of different levels of complexity in accordance with the themes of the content module. Thus, after studying themes 1-6 (module 1), students perform tasks to module 1. Accordingly, after studying themes 7-11 (module 2) – tasks to module 2.

Final control of knowledge and competencies of students in the discipline is carried out on the basis of a semester exam, the task of which is to test students' understanding of the program material in general, of a logic and relationships between individual sections, of an ability to creatively use accumulated knowledge, of an ability to formulate their attitude to a particular problem of the discipline, etc.

The examination ticket covers the program of the discipline and provides for the determination of the level of knowledge and the degree of mastery of competencies by students. Each examination ticket consists of 20 test stereotypical tasks, diagnostic and heuristic tasks, which involve solving typical professional tasks of a specialist in the workplace and allow diagnosing the level of theoretical training of the student and the level of his competence in the discipline. The result of the semester exam is evaluated in points (maximum number - 40 points, the minimum number of credits – 25 points) and is affixed in the appropriate column of the examination "Statement of academic performance".

The student should be considered as attested, if a sum of points, obtained by the results of the final / semester revision of academic performance, equals 60 or is higher than 60. The minimum number of points for the current and modular control for the semester is 35 and the minimum number of points for the examination is 25.

The final grade in the discipline is calculated taking into account the points obtained during the exam and the points obtained during the current control by accumulative system. The total result in points for the semester is: "60 or more points - credited", "59 or less points - not credited" and is entered in the credit " Statement of academic performance " of the discipline.

More detailed information regarding assessment is provided in the technological map of the discipline.



Accumulation of rating points in the discipline (example)			
Types of educational work		Max number of points	
Work on lectures		5	
Active participation in laboratory tasks		5	
Protection of individual tasks		10	
Presentation of an individual research task		12	
Current control works (express survey)		4	
Colloquium		24	
Exam (if available)		40	
Max number of points		100	
1 – 34	F		
Discipline policies			
<i>Academic Integrity Policy:</i> defined by Simon Kuznets Kharkiv National University of Economics Code of Academic Integrity https://www.hneu.edu.ua/kodeks-akadem-dobrochesnosti/			
<i>Policy for the performance of tasks later than the deadline:</i> during the assessment of individual tasks attention is paid to the quality, independence and timeliness of delivery of completed tasks to the lecturer, according to the schedule of the educational process. If any of the requirements are not met, the points will be reduced by 50%.			
<i>Policy on recognition of learning outcomes obtained in non-formal and informal education:</i> defined by the Regulation on the procedure for recognition of learning outcomes obtained in non-formal and informal education in S. Kuznets KNUE https://www.hneu.edu.ua/wp-content/uploads/2020/02/Polozhennya-pro-neformalnu-inf-osvitu.pdf			
More detailed information on competencies, learning outcomes, teaching methods, forms of assessment, independent work is given in the Working program of the discipline http://repository.hneu.edu.ua/bitstream/123456789/22343/1/2019-%D0%A0%D0%9F%D0%9D%D0%94-%D0%93%D1%83%D1%80%27%D1%8F%D0%BD%D0%BE%D0%B2%D0%B0%20%D0%9B.%D0%A1.%D0%9C%D0%9C%D1%96%D0%9C%D0%A4%D0%9C.pdf			

The syllabus was approved at the meeting of the department «25» 06 2021 Protocol №21