



## Syllabus Course Program



# Financial technologies (FinTech)

### Specialty

072 – Finance, banking, insurance and stock market

### Educational program

Finance and banking,

### Level of education

Master's degree

### Semester

2

### Institute

Institute of Economics, management and international business

### Department

Accounting and finance (205)

### Course type

Mandatory

### Language of instruction

English, Ukrainian

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## Lecturers and course developers



### Oleksandr Manoylenko

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D.Sc. in Economics, Professor, Head of the Department of Accounting and Finance

Work experience - 24 years. Author of over 250 scientific and educational publications.

Leading lecturer on the courses: "Financial Engineering", "Blockchain Technologies and Crypto Trading", "Financial Management".

[More about the lecturer on the department's website](#)



### Olha Mashchenko

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D.Sc. in Economics, Professor of Accounting and Finance Department

Author and co-author of more than 85 scientific and methodological publications. Courses: " Insurance and insurance business", " Financial markets", " Bank management", "Financial services industry", " Financial risk management", "Theory of international finance".

[More about the lecturer on the department's website](#)

## General information

### Summary

The course "Financial Technologies" (FinTech) develops knowledge about the peculiarities of the application of financial technologies in the context of digital transformation of socio-economic relations and skills in analyzing financial processes and making management decisions, taking into account the use of innovative financial services, financial engineering tools, crowd technologies based on the digitalization of operations and services and the expansion of financial inclusion of subjects of the national economy.

## Course objectives and goals

Mastering theoretical knowledge and practical skills in the field of introducing and using innovative technologies in the financial services market.

## Format of classes

Lectures, practical work, independent work, consultations. The final control is an exam.

## Competencies

GC1. Ability to think abstractly, analyze and synthesize.

GC3. Ability to conduct research at the appropriate level.

GC4. Ability to identify, formulate and solve problems.

SC1. Ability to use the fundamental laws of finance, banking and insurance development in combination with research and management tools to carry out professional and scientific activities.

SC2. Ability to use theoretical and methodological tools for diagnosing and modeling the financial activities of business entities.

SC3. Ability to apply management skills in the field of finance, banking and insurance.

SC4. Ability to evaluate the effectiveness of scientific, analytical and methodological tools to substantiate management decisions in the field of finance, banking and insurance.

SC6. Ability to apply interdisciplinary approaches in solving complex tasks and problems in the field of finance, banking and insurance.

SC8. Ability to apply innovative approaches in the field of finance, banking and insurance.

SC9. Ability to develop technical tasks for the design of information systems in the field of finance, banking and insurance.

## Learning outcomes

PL02. To know at the level of the latest achievements the main concepts and methodologies of scientific knowledge in the field of finance, banking and insurance.

PL03. To adapt and modify existing scientific approaches and methods to specific situations of professional activity.

PL08. To be able to apply innovative approaches in the field of finance, banking and insurance and manage them.

## Student workload

The total volume of the course is 150 hours (5 ECTS credits): lectures - 32 hours, practical classes - 32 hours, self-study - 86 hours.

## Course prerequisites

To successfully complete the course, you must have knowledge and practical skills in the following disciplines: "Financial Management", "Insurance Management", "Tax Management", "Management Information Systems in the Financial and Accounting Sector".

## Features of the course, teaching and learning methods, and technologies

Lectures are conducted remotely using interactive teaching methods using multimedia technologies. Practical classes use a project-based approach to learning, game methods, and focus on the use of information technologies.

## Program of the course

### Topics of the lectures

Topic 1. The essence and tools of financial technologies (FinTech)

The meaning of the concept of "financial technologies". Stages of development of financial technologies (FinTech). Functions of financial technologies (FinTech). Financial technologies (FinTech) as an ecosystem.

Topic 2. The emergence, essence and schemes of virtual currency

The reasons for the emergence of virtual currency. The essence of virtual currency. Virtual currency schemes and their participants.

Topic 3. Cryptocurrency

The essence and features of cryptocurrency. Types of cryptocurrencies and their characteristics.

Regulation of cryptocurrency transactions. National digital currencies. Signs of digital currency. E-hryvnia. Prospects for the development of the cryptocurrency market in the world.

Topic 4. Financial technologies (FinTech) in the insurance market

The essence of insurance technologies (InsurTech). Application of FinTech tools in insurance. Main directions of development of insurance technologies (InsurTech).

Topic 5. Financial technologies (FinTech) in the field of banking

The essence of financial technologies in the banking sector. The role of the National Bank of Ukraine in the process of regulating the FinTech market. Banking products based on digital technologies. Risks for banks under the influence of FinTech.

Topic 6. Innovation technologies in the sphere of public finance and public administration

The essence and objectives of the application of FinTech tools in the sphere of public administration. E-governance. FinTech tools in public finance.

Topic 7. Financial technology tools (FinTech) in the investment sphere

Modernization of the investment sphere in the conditions of digitalization. Application of FinTech tools in the investment sphere.

Topic 8. Financial technology (FinTech) in the payment services market

The essence of payment services. Advantages of cashless payments. Alternative payment services and their types. FinTech tools in the sphere of payment services. Promising directions of development of the application of FinTech in the sphere of payment services.

Topic 9. Crowdfunding

The essence and types of crowdfunding. Crowdfunding models. Features of crowdfunding platforms in Ukraine and abroad.

Topic 10. Crowdlending

The essence of crowdlending. Stages of crowdlending development. Types of crowdlending. State regulation of crowdlending in the world.

Topic 11. Innovative supervisory technologies (SupTech)

The emergence and content of supervisory technologies (SupTech). Characteristics and key features of supervisory technologies (SupTech). Advantages of supervisory technologies (SupTech). Main areas of use of supervisory technologies (SupTech).

Topic 12. Regulatory technologies (RegTech) in the financial technology system

The essence of regulatory technologies (RegTech). Evolution of regulatory technologies (RegTech). Main areas of use of regulatory technologies (RegTech).

## **Topics of the workshops**

Topic 1. The essence and tools of financial technologies (FinTech)

Topic 2. The emergence, essence and schemes of virtual currency

Topic 3. Cryptocurrency

Topic 4. Financial technologies (FinTech) in the insurance market

Topic 5. Financial technologies (FinTech) in the banking sector

Topic 6. Innovation technologies in the field of public finance and public administration

Topic 7. Financial technologies (FinTech) in the investment sector

Topic 8. Financial technologies (FinTech) in the payment services market

Topic 9. Crowdfunding

Topic 10. Crowdlending

Topic 11. Innovative supervisory technologies (SupTech)

Topic 12. Regulatory technologies (RegTech) in the financial technology system

## Topics of the laboratory classes

Laboratory work is not provided within the discipline.

## Self-study

The course involves the completion of an individual calculation task. The results of calculations, justifications and conclusions are drawn up in a written report.

Applicants for higher education are also recommended additional materials (videos, articles) for independent study and analysis.

## Course materials and recommended reading

### Main literature

1 Kohut Y. Blockchain technologies and cryptocurrency: risks and cybersecurity. textbook. Kyiv: Sidcon. 2022. 316 p.

2 Nasibova O. V. Digital technologies of financial support of the social sphere. Economic Bulletin of the University. 2021. No. 49. P. 200–208. Doi: <https://doi.org/10.31470/2306-546X-2021-49-200-208>

3 Teslyuk S. A. Digital finance: lecture notes (electronic edition). Lutsk: Lesya Ukrainka Volyn National University, 2022. 98 p.

### Additional literature

1 Analytical material of the Ukrainian Association of Fintech and Innovative Companies. Ukrainian fintech catalog. URL: <https://fintechua.org/>

2 Concept of development of digital competencies by 2025 and its significance. URL: <https://everlegal.ua/kontseptsiya-rozvytku-tsyfrovykh-kompetennostey-do-2025-roku-ta-yiyi-znachennya>

3 Concept of development of innovative supervisory and regulatory technologies. URL: [https://bank.gov.ua/admin\\_uploads/article/%D0%A1oncept\\_development\\_Suptech\\_Regtech.pdf?v=9](https://bank.gov.ua/admin_uploads/article/%D0%A1oncept_development_Suptech_Regtech.pdf?v=9)

4 Manoylenko O., Kuznetsova S. Development of digital financial instruments and their use in the activities of entities of the pharmaceutical industry of Ukraine. *Ekonomia – Wroclaw Economic Review*. 30/2. 2023. P. 77-91. URL: <https://doi.org/10.19195/2658-1310.29.2.5>

5 Strategy for development of the financial sector of Ukraine. Kyiv: Official Internet representation of the National Bank of Ukraine. URL: [https://bank.gov.ua/admin\\_uploads/article/Strategy\\_finsector\\_NBU.pdf?v=7](https://bank.gov.ua/admin_uploads/article/Strategy_finsector_NBU.pdf?v=7)

6 Strategy for the development of fintech in Ukraine until 2025. Kyiv: Official Internet representation of the National Bank of Ukraine. URL: <https://bank.gov.ua/ua/files/DDWIAwXTdqdClp>

7 Digital finance. European Commission survey. URL: [https://finance.ec.europa.eu/digital-finance\\_en](https://finance.ec.europa.eu/digital-finance_en)

## Assessment and grading

### Criteria for assessment of student performance, and the final score structure

The final grade can be given as a result of accumulating grades from individual modules during the semester if the applicant completes all types of current control measures or based on the results of the exam.

100% of the final grade consists of assessment results in the form of:

- final test work (20%);
- individual work (30%);
- independent work (50%)

Exam: written assignment (20 test tasks of varying difficulty).

### Grading scale

Total points	National	ECTS
90-100	Excellent	A
82-89	Good	B
75-81	Good	C
64-74	Satisfactory	D
60-63	Satisfactory	E
35-59	Unsatisfactory (requires additional learning)	FX
1-34	Unsatisfactory (requires repetition of the course)	F

## Norms of academic integrity and course policy

The student must adhere to the Code of Ethics of Academic Relations and Integrity of NTU "KhPI": to demonstrate discipline, good manners, kindness, honesty, and responsibility. Conflict situations should be openly discussed in academic groups with a lecturer, and if it is impossible to resolve the conflict, they should be brought to the attention of the Institute's management.

Regulatory and legal documents related to the implementation of the principles of academic integrity at NTU "KhPI" are available on the website: <http://blogs.kpi.kharkov.ua/v2/nv/akademichna-dobrochesnist/>

## Approval

Approved by

Date, signature

**Head of the department**  
Oleksandr MANOYLENKO

Date, signature

**Guarantor of the educational program**  
Tatiana NAZAROVA