



Syllabus Course Program



Blockchain Technologies and Cryptotrading

Specialty

072 – Finance, banking, insurance and stock market

Educational program

Finance and Banking

Level of education

Master's degree

Semester

2

Institute

Institute of Management Economics and International Business

Chair

Accounting and finance (205)

Type of discipline

Profile training

Language of teaching

English

Lecturers and course developer



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Doctor of Economics, Professor of the Department of Accounting and Finance (NTU "KhPI")

Author of more than 250 scientific and educational publications. Leading lecturer in the courses: "International Stock Market, Blockchain Technologies and Crypto Trading, Financial Management. [Learn more about the teacher on the department's website](#)

General information

Summary

The course "Blockchain technologies and cryptotrading" provides students with the basic functionality, structure and features of Blockchain technologies and cryptotrading

Course objectives and goals

The initial discipline is the acquisition of theoretical foundations, the formation of future master's degrees in the use of blockchain technologies, economical deposits based on cryptocurrencies and smart contracts.

Format of classes

Lectures, practical classes, consultations. Final control - exam.

Competences

GC1. Ability to think abstractly, analyze and synthesize.

GC 3. Ability to conduct research at the appropriate level.

GC 5. Ability to make informed decisions.

GC 6. Interpersonal interaction skills.

GC 8. Ability to work in an international context.

SC1. Ability to use the fundamental laws of development of finance, banking and insurance in combination with research and management tools for 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 justify management decisions in the field of finance, banking and insurance.

SC7. Ability to search, use and interpret information necessary for solving professional and scientific problems in the field of finance, banking and insurance

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

Special (professional) competencies for electives unit

03 «Stock Market and Cryptotrading» (defined by higher education institution) |

PC 3. Ability to form complex financial products, to evaluate risks of their introduction and operation in the context of globalization and internationalization of international stock markets, taking into account structural changes associated with the introduction of innovative financial technologies. **Learning outcomes**

PL02. Know, at the same time as new ones, the basic concepts and methodology of scientific knowledge in the field of finance, banking and insurance.

PL04. Collect, collect, systematize and analyze information necessary for advanced professional and scientific tasks in the field of finance, banking and insurance.

PL08. Consider establishing innovative approaches in the field of finance, banking, insurance and their management.

PL12. Encourage the selection of options for management decisions in the financial, banking and insurance sectors and evaluate their effectiveness in relation to the objectives, regulatory and ethical aspects.

Learning outcomes of educational program for electives unit 03 “Stock Market and Cryptotrading” (defined by the standard of higher education for the major)

PL 3 Ability to develop complex financial instruments, to analyze the benefits and risks of their implementation in the context of the implementation of innovative financial technologies in the international financial market and to evaluate opportunities and threats of arbitrage transaction |

Student workload

The total scope of the discipline is 120 hours. (4 ECTS credits): lectures – 32 hours, practical activities – 16 hours, self-study – 72 hours. |

Course prerequisite

“Financial Management, Management Information Systems in Finance and Accounting. |

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

Lectures are conducted interactively using multimedia technologies. Practical classes use a project-based approach to learning, game methods |

Program of educational discipline

Topics of lectures

Topic 1. Introduction to blockchain technologies

Significance to the blockchain. History of blockchain development. Basic principles of robotics.

Topic 2. Smart contracts: significance and application wikiristan

What are smart contracts? Apply the smart contract wiki. Video program for creating smart contracts.

Topic 3. Technical aspects of blockchain

Cryptographic fundamentals. Consensus protocols. Private and public blockchains.

Topic 4. Interconnections between blockchain and finance

Infusion into the blockchain for financial services. ICO (Initial Coin Offering) and STO (Security Token Offering). Regulation of cryptocurrencies and ICOs.

Topic 5. Blockchain implementation

Practical aspects of blockchain in the current economy. New classes of assets – digital cryptocurrencies; protocol tokens; service tokens; security tokens; natural asset tokens; collection of crypto assets; held tokens and stablecoins. Blockchain in Ukraine.

Topic 6. The essence and types of cryptocurrencies

The value of cryptocurrencies. Technical features of cryptocurrencies. Popular cryptocurrencies: Bitcoin, Ethereum and others.

Topic 7. Basics of crypto trading

Basic understanding of crypto trading. Technical analysis and fundamental analysis in crypto trading. Platforms for crypto trading.

Topic 8. Reviews and blogs Blockchain technology and crypto trading

Cybersecurity and malice. Regulation and legal aspects. Scalping, hedging and other crypto trading strategies.

Topics of practical classes

Topic 1. Introduction to blockchain technologies

Topic 2. Smart contracts: significance and application wikiristan

Topic 3. Technical aspects of blockchain

Topic 4. Interconnections between blockchain and finance

Topic 5. Blockchain implementation

Topic 6. The essence and types of cryptocurrencies

Topic 7. Basics of crypto trading

Topic 8. Reviews and blogs Blockchain technology and crypto trading

Topics of laboratory works

Laboratory works within the discipline are not provided.

Self-study

The course involves completing an individual assignment - an essay on the problematic issues of the course. The result of the essay is formalized in a written report and a presentation is prepared. Students are also recommended additional materials (videos, articles) for independent study and analysis.

Course materials and recommended reading

Basic literature:

1. Kravchenko P. Blokchein i detsentralizovani systemy : navch. posibnyk u 3 ch. Ch. 1 / P. Kravchenko, B. Skriabin, O. Dubinina. – Kharkiv : PROMART, 2019. – 452 s.
2. Vcheni zapysky Tavriiskoho Natsionalnoho Universytetu Imeni V.I. Vernadskoho Tom 30 (69) №2 2019 Chastyna 1: Tyshchenko O.S., Humen T.F., Trapezon K.O. Doslidzhennia osoblyvostei tekhnolohii blockchain v informatsiinykh merezhakh peredavannia danykh. 2019. 77 s.
3. Kravchenko P., Skriabin B., Dubinina O. Blokchein i detsentralizovani systemy .: navchve posibnyk dlia stud.zavedenii vyssh.obrazovaniia: v 3 chastynakh - Kharkiv: «promartili», 2018, - 400 s.
4. Blockchain-tekhnolohii : laboratornyi praktykum / S.P. Yevseiev, A.O. Korchenko., V.M. Hrebenuk – K. : NAU, 2021. – 66 s
5. Tapskott D., Tapskott A. Blokchein-revoliutsiia. Yak tekhnolohiia, shcho lezhyt v osnovi bitkoina ta inshykh kryptovaliut, zminiuie svit / Per. z anhl.: Yuliia Hryhorenko, Hanna Leliv; nauk. red.: Mykhailo Demkiv, Keit Shchekhlova. Lviv: Litopys, 2019. – 492 s.

Additional literature:

1. Zakon Ukrainy «Pro platizhni systemy ta perekaz koshtiv v Ukraini» vid 05.04.2001 r. za № 2346-III - <https://zakon.rada.gov.ua/laws/show/2346-14#Text>
2. Zakon Ukrainy «Pro zapobihannia ta protydui lehalizatsii (vidmyvanniu) dokhodiv, oderzhanykh zlochynnym shliakhom, finansuvanniu teroryzmu ta finansuvanniu rozpovsiudzhennia zbroi masovoho znyschennia» vid 06.12.2019 r. za № 361-IX - <https://zakon.rada.gov.ua/laws/show/361-20#Text>
3. Zakon Ukrainy «Pro platizhni posluhy» vid 30.06.2021 r. za № 1591- IKh - <https://zakon.rada.gov.ua/laws/show/1591-20#Text>
4. Zakon Ukrainy «Pro virtualni aktyvy» vid 08.09.2021 r. (proekt)
5. Kravchenko P. Blokchein za 20 mynut. – Distributed Lab, 2019 – 20 s.

6. Van Hijfte, Stijn. (2020). Decoding Blockchain for Business: Understand the Tech and Prepare for the Blockchain Future. 10.1007/978-1-4842-6137-8.

Assessment and grading

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

100% of the final grade consists of the results of the assessment in the form of: a final test - 40%; completion of an individual calculation task - 30%; completion of independent work of the student on each of the topics covered in the discipline - 30%. The exam is written and includes: 2 theoretical tasks of different levels of complexity, and 1 case study.

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
Tetiana NAZAROVA