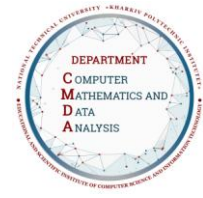




# Syllabus

## Course Program



## Basics of Business Analytics

### Specialty

113 Applied mathematics

### Educational program

Intelligent Data Analysis

### Level of education

Bachelor's level

### Semester

6

### Institute

Institute of Computer Science and Information Technology

### Department

Computer mathematics and data analysis

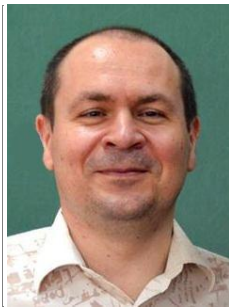
### Course type

Special (professional), Selective

### Language of instruction

Ukrainian

## Lecturers and course developers



### Dmytro Yelchaninov

[dmytro.yelchaninov@khpi.edu.ua](mailto:dmytro.yelchaninov@khpi.edu.ua)

Candidate of Technical Sciences, Associate Professor, Associate Professor of the Department of Computer Mathematics and Data Analysis

He has 24 years of experience. Author of 150 scientific and educational works. Leading lecturer in the following disciplines: "Methods and tools of computational mathematics", 'Principles and paradigms of Python', 'Development of web services in Python', 'Algorithmic languages', 'Mathematical modeling of complex systems', 'Design of consolidated information systems', 'Fundamentals of business analytics', 'Analysis of expert information'.

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

## General information

### Summary

This course covers the generally accepted practices of business analysis. Develops the skills necessary for the successful execution of business analysis work

### Course objectives and goals

Mastering the business analysis methods and technologies.

### Format of classes

Lectures, practical classes, essays, self-study, consultations. Final control – test.

### Competencies

GC 6. Ability to think abstractly, analyze and synthesize.

GC 9. Ability to communicate with members of other professional groups of different levels (with experts from other fields of knowledge/ types of economic activity)

GC 10. Skills in the use of information and communication technologies.

SC 7. Ability to solve professional problems with the help of computer equipment, computer networks and the Internet, in the environment of modern operating systems, using standard office applications. |

### **Learning outcomes**

|LO 7. Be able to carry out practical research and find solutions to incorrect problems.

LO 8. Combine mathematical and computer modeling methods with informal expert analysis procedures to find optimal solutions.

LO 19. Collect and interpret relevant data and analyze complexities within their area of specialization to make judgments that reflect relevant social and ethical issues. |

### **Student workload**

|The total volume of the course is 90 hours (3 ECTS credits): lectures – 28 hours, practical classes – 16 hours, self-study – 46 hours. |

### **Course prerequisites**

|Successful completion of the course requires knowledge and skills in the following courses: “Fundamentals of Economic Theory”, “Mathematical Statistics.” |

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

|Lectures are conducted interactively with the use of multimedia technologies. The Microsoft Visio diagram editor is used in practical classes. |

## **Program of the course**

### **Topics of the lectures**

|Topic 1. Guide to the Business Analysis Body of Knowledge (BABOK)

Topic 2. Fundamentals of systemological analysis

Topic 3. Sustainable development

Topic 4. Balanced scorecard system

Topic 5. Functional modeling

Topic 6. Data flow diagrams

Topic 7. Use cases and scenarios

Topic 8. Sequence diagrams

Topic 9. Activity diagrams |

### **Topics of the workshops**

|Topic 1. Balanced scorecard system

Topic 2. Functional modeling

Topic 3. Data flow diagrams

Topic 4. Use cases and scenarios

Topic 5. Sequence diagrams

Topic 6. Activity diagrams |

### **Topics of the laboratory classes**

|There are no laboratory classes in the curriculum. |

### **Self-study**

|An essay on the balanced scorecard of a particular organization. |

### **Non-formal education**

|Fundamentals of Business Analysis. <https://www.coursera.org/learn/fundamentals-of-business-analysis> |

## Course materials and recommended reading

1. The Business Analysis Standard.  
<https://www.iiba.org/career-resources/a-business-analysis-professionals-foundation-for-success/the-foundation-for-effective-business-analysis/>
2. Lenssen, G.G., Smith, N.C. (2019). Managing Sustainable Business. Springer, Dordrecht.  
<https://www.dbooks.org/managing-sustainable-business-9402411445/read/>
3. Balanced Scorecard Basics. <https://balancedscorecard.org/bsc-basics-overview/>
4. Cardona, P., Rey, C. (2022). Management by Missions. Palgrave Macmillan, Cham.  
<https://doi.org/10.1007/978-3-030-83780-8>
5. Federal Information Processing Standards Publication: integration definition for function modeling (IDEF0). <https://nvlpubs.nist.gov/nistpubs/Legacy/FIPS/fipspub183.pdf>
6. Noran, Ovidiu S. (2022) Business Modelling: UML vs. IDEF.  
<https://www.area-c54.it/public/business%20modelling%20-%20uml%20vs%20idef.pdf>
7. UML. <https://www.uml.org/>
8. Visio. <https://www.microsoft.com/uk-ua/microsoft-365/visio/flowchart-software>

## Assessment and grading

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

To evaluate the work of students during the semester, the final grade is calculated as the sum of the grades for the control measures (maximum 100 points):

- a) completion of tasks in workshops: the maximum grade is 80 points;
- b) completion of an essay: the maximum grade is 15 points;
- c) passing the test: the maximum grade is 5 points.

### 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  
29.08.2024

Head of the Department  
Olena Akhiezer

Date, signature  
29.08.2024

Guarantor of the Educational Program  
Olena Akhiezer