

SYLLABUS OF THE ACADEMIC DISCIPLINE «USING MS EXCEL IN BIG DATA»

Educational program component – elective (3 credits)

Educational and professional	Information technology and project management
program	
Specialty	122 – Computer science
Discipline	12 – Information technology
Level of higher education	first (bachelor's)
Language of instruction	English
Teacher(s) profile	Piddubna Larysa Andriivna, Candidate of Physical
	and Mathematical Sciences, Associate
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Course page in Moodle	https://moodle.chnu.edu.ua/course/view.php?id=3797
Consultations	By arrangement

SUMMARY OF THE COURSE

The purpose of the course: Big Data in information technology is a set of information (both structured and unstructured) of such large sizes that traditional methods and approaches (mostly based on business analytics solutions and database management systems) cannot be applied to them.

The ultimate goal of this processing is to obtain results that are easily perceived by a person and are effective in conditions of continuous growth and distribution of information across numerous nodes of a computer network.

This course describes the concept of Big Data, data processing methods. Special attention is paid to MS Excel tools and its add-ons.

The purpose of this course is to develop the following competencies in students:

ZK1. Ability to abstract thinking, analysis and synthesis.

ZK2. Ability to apply knowledge in practical situations.

FC7. Ability to apply theoretical and practical foundations of modeling methodology and technology to study the characteristics and behavior of complex objects and systems, conduct computational experiments with processing and analysis of results.

FC15. Ability to analyze and functionally model business processes, build and practically apply functional models of organizational, economic and production and technical systems, methods for assessing the risks of their design.

Learning outcomes:

PRN8. Use the methodology of systems analysis of objects, processes and systems for the tasks of analysis, forecasting, management and design of dynamic processes in macroeconomic, technical, technological and financial objects.

EDUCATIONAL CONTENT OF THE EDUCATIONAL COMPONENT MODULE 1. FUNDAMENTALS OF BIG DATA THEORY

MODULE I, I OLDIMELTILLO OF DIO DATA THEORI	
Topic 1	Basic concepts and definitions of BigData. Technologies and trends in
	working with Big Data.
Topic 2	General methods of processing big data. Selection of algorithms, data
	structures, tools. Overview of software for working with Big Data.
Topic 3	MODULE 2. TOPIC 3. MS EXCEL SPREADSHEET. BASIC
	CONCEPTS. WORKING WITH LISTS
MODULE 2. MS EXCEL SPREADSHEET. BASIC CONCEPTS.	
WORKING WITH LISTS	
Topic 4	Introduction to Power BI Desktop.
Topic 5	Power Query, loading data. Main scenarios for using Power Query.
Topic 6	Working with calculation context, using simple measures, creating
	simple tables and calculated columns.
Topic 7	Basic visualizations and their options. Power View: additional
	visualization capabilities.

FORMS, METHODS AND EDUCATIONAL TECHNOLOGIES OF TEACHING

(description of forms, methods and technologies of teaching,

which are used in the process of studying the academic discipline)

By the source of transmission and perception of educational information by students:

o verbal (lecture, explanation, conversation, instruction);

o visual (illustration, demonstration);

o practical (projects).

By the logic of transmission and perception of educational information by students:

o informational-receptive;

o reproductive;

o problem-based;

o partially-search (heuristic).

By stimulation of educational and cognitive activity:

o methods of stimulating cognitive needs and interests;

o methods of stimulating duty and responsibility.

FORMS AND METHODS OF CONTROL AND ASSESSMENT

Current control: The forms of current control are laboratory work. Final control - The form of final control is a test.

LEARNING OUTCOMES ASSESSMENT CRITERIA

The system of assessing the level of educational achievements is based on the principles of ECTS and is cumulative. Knowledge assessment is carried out on a 100-point scale. The results of work during the academic semester are assessed during current and modular

control in the range from 0 to 70 points in total, and the results of final control (test) - from 0 to 40 points.

During the semester, students perform 5 laboratory works, each of which is a continuation of the previous one. Laboratory works are assessed with points: 15, 15, 10, 15, 15 for the full completion of tasks.

Performing laboratory tasks involves independent processing of additional information sources and home completion of tasks started in the classroom. In case of insignificant errors in completing tasks, 1-2 points are deducted, and significant ones, unsubstantiated application of methods or failure to complete tasks - 3-5 points. In case of completing certified courses on educational platforms and timely submission of certificates, it is possible to transfer a certificate instead of laboratory work on the relevant topic. Additionally, you can get up to 14 points for completing additional tasks.

The final control in the discipline is a test in the form of a test in the moodle system. The test option contains 20 questions with one correct answer, each of which is estimated at 1 point.

The final grade is given based on the results of the sum of points scored on substantive modules during the semester and the final module (test).

ACADEMIC INTEGRITY POLICY

Adherence to the academic integrity policy by participants in the educational process when studying an academic discipline is regulated by the following documents:

- ✓ "Code of Ethics of Yuriy Fedkovych Chernivtsi National University" <u>https://www.chnu.edu.ua/media/jxdbs0zb/etychnyi-kodeks-chernivets</u> kohonatsionalnoho-universytetu.pdf
- ✓ "Regulations on the detection and prevention of academic plagiarism at Yuriy Fedkovych Chernivtsi National University" <u>https://www.chnu.edu.ua/media/n5nbzwgb/polozhennia-chnu-pro-plahi</u> at-2023plusdodatky-31102023.pdf

The applicant is obliged to complete all received tasks in a timely and highquality manner; if necessary, in order to clarify all unclear issues during independent and individual work, to attend consultations with the teacher. Students are also obliged to adhere to the rules of academic integrity in accordance with the "Code of Ethics of the ChNU". The policy of observing academic integrity (in accordance with the Law of Ukraine "On Education") is that teaching an academic discipline is based on the principles of academic integrity - a set of ethical principles and rules defined by law, which should be guided by participants in the educational process during training, teaching and conducting scientific (creative) activities in order to ensure trust in the results of training and/or scientific (creative) achievements. The presence of academic plagiarism in student works is grounds for assigning a negative grade. Cheating by students during testing is grounds for early termination of its completion and assigning a negative grade

INFORMATION RESOURCES

1. <u>https://moodle.chnu.edu.ua/course/view.php?id=3798</u>

2. <u>https://docs.microsoft.com/en-us/power-bi/fundamentals/desktop-what-is-desktop</u>

3. <u>https://www.techtarget.com/searchcontentmanagement/definition/Microsoft-Power-BI</u>

4. <u>https://www.udemy.com/course/microsoft-power-bi-up-running-with-power-bi-desktop/</u>

5. https://www.linkedin.com/learning/learning-power-bi-desktop-

<u>16568640?replacementOf=learning-microsoft-power-bi-desktop-2021</u>

6.

https://www2.microstrategy.com/producthelp/Current/MSTRWeb/WebHelp/Lang_1033 /Content/PowerBI_connector.htm