



SYLLABUS OF THE ACADEMIC DISCIPLINE

Data Analysis

Educational program component – mandatory (3.0 credits)

Educational and Professional Program	Information technology and project management
Specialty	122 – Computer Science
Field of knowledge	12 – Information technology
Level of higher education	first (bachelor's)
Language of teaching	Ukrainian
Teacher profile	Cherevko Igor Mykhailovych Head of the Department of Mathematical Modeling, Doctor of Physics and Mathematics, Professor https://mathmod.chnu.edu.ua/pro-nas/spivrobitnyky/cherevko-igor-mykhailovych/
Contact phone number	+38037-258-48-25
E-mail:	i.cherevko@chnu.edu.ua
Course page in Moodle	https://moodle.chnu.edu.ua/course/view.php?id=4599
Consultations	Wednesday, 14:20 – 16:00

ANNOTATION OF THE ACADEMIC DISCIPLINE

The goal and objectives of the discipline "Data Analysis" is the systematic study of problems related to the stages of data processing, the construction and evaluation of mathematical models of experimental data, the application of modern statistical software for processing statistical data on a computer. This is a basic course for future analysts. Thanks to the knowledge gained, they will be able to conduct primary statistical analysis of data, put forward hypotheses and evaluate them based on the collected data. The analysis and application of the aforementioned approaches is the main content of this course.

EDUCATIONAL CONTENT OF THE EDUCATIONAL DISCIPLINE

MODULE 1. Data preprocessing	
Topic 1	Data preprocessing tasks
Topic 2	Modeling pseudo-random numbers
Topic 3	Empirical data distribution
Topic 4	Research on the laws of distribution of experimental data
MODULE 2. Analysis of experimental data and statistical models	
Topic 5	Linear regression models.
Topic 6	Nonlinear multivariate regression models.
Topic 7	Experiment planning in identification problems
Topic 8	Data analysis in the system "Statistica".
Topic 9	Statistical analysis of time series

FORMS, METHODS AND EDUCATIONAL TECHNOLOGIES OF TEACHING

Learning and teaching methods: lectures, laboratory classes, e-learning using the Moodle system, testing, completing INDS tasks.

FORMS AND METHODS OF CONTROL AND EVALUATION

Types and forms of control

1. Current (oral questioning, solving problems)
2. Modular (tests, laboratory work).

Assessment tools: - tests; team projects; analytical reports on the performance of laboratory work, individual tasks and independent work.

Final control - exam.

CRITERIA FOR ASSESSING LEARNING RESULTS

The system for assessing the level of educational achievements is based on the principles of ECTS and is cumulative. During the semester, students complete two tests and 3 laboratory works. Each test is evaluated with a maximum of 5 points, and laboratory works are evaluated with a maximum of 20 points. The final control in the discipline is an oral exam (30 points).

POLICY ON ACADEMIC INTEGRITY

Adherence to the policy on academic integrity 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»
<https://www.chnu.edu.ua/media/jxdfs0zb/etychnyi-kodeks-chernivetskoho-natsionalnoho-universytetu.pdf>
- ✓ «Regulations on the detection and prevention of academic plagiarism at Yuriy Fedkovych Chernivtsi National University»
<https://www.chnu.edu.ua/media/n5nbzwgb/polozhennia-chnu-pro-plahiat-2023-plusdodatky-31102023.pdf>

INFORMATION RESOURCES

1. <https://moodle.chnu.edu.ua/course/view.php?id=4599>
2. Data analysis – Prometheus.– <https://prometheus.org.ua> › dataanalysis
3. Cherevko I. M. Data analysis: Part 1. Preliminary processing of experimental data. Methodological recommendations and tasks for laboratory works / Compiled by: I.M. Cherevko. Chernivtsi: Chernivtsi. nat. University, 2023. 28 p.
<https://archer.chnu.edu.ua/handle/123456789/8458>