



Syllabus of the educational component

Program of educational discipline



Pre-diploma Practice

Code and name of specialty

113 Applied mathematics

Institute

Educational and Scientific Institute of Computer Science and Information Technology

Educational program

Intelligent data analysis

Department

Computer mathematics and data analysis

Level of education

Master

Type of discipline

Special (professional), Mandatory

Semester

3

Language of teaching

English

Teachers and developers



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Author and co-author of over 20 scientific and methodological publications. Courses: "Project", "Innovative Entrepreneurship and Startup Project Management", "Methods and Technologies of Big Data Work", "Mathematical Models and Methods of Knowledge Representation".

[Детальніше про викладача на сайті кафедри](#)

General information

Annotation

Pre-graduate practice aims to systematize, expand and consolidate professional knowledge, deepen and consolidate theoretical knowledge obtained by higher education students in the process of completing the educational program, familiarize themselves directly in the enterprise with modern production processes, in particular the IT industry, obtain and improve practical skills and abilities in the specialty, as well as collect material for completing a qualifying master's thesis.

Purpose and objectives of the disciplines

The purpose of studying the discipline is to develop the ability to independently formulate and solve practical forecasting tasks based on mathematical methods and intelligent information technologies to support decision-making in conditions of uncertainty.

Format of classes

Independent work. Final control – test.

Competences

GC 3. Ability to continuously learn, and acquire new knowledge and skills, including in a field other than professional.

GC 4. Ability to identify, pose, and solve problems in professional activities.

GC 5. Ability to generate new ideas (creativity) and non-standard approaches to their implementation, flexible adaptation to real professional situations, show a creative approach, and initiative.

GC 6. Ability to critically evaluate and rethink accumulated experience (own and others), and analyze one's professional and social activities.

GC 7. Ability to work with information: find and use information from various sources necessary for solving professional tasks.

GC 8. Ability to effectively build communication, based on the goals and situation of communication.

GC 9. Ability to prepare and conduct public speeches with a presentation of the results obtained, and prepare scientific and technical publications based on the results of the research, including in a foreign language.

GC 10. Ability to carry out professional scientific and project-innovative activities in an international environment.

GC 11. Ability to social and professional interaction and cooperation in a team, teamwork.

SC 6. Ability to organize the work of a team of performers to conduct research develop projects, and make appropriate and economically justified organizational and managerial decisions.

SC 7. Ability to search, study, and analyze scientific and technical information, domestic and foreign experience related to the application of mathematical methods for the study of processes and systems.

SK 8. Ability to participate in the preparation of scientific and technical reports on completed design or research work and in the implementation of the results of research and development.

SK 9. Ability to effectively communicate professionally in written and oral technical and scientific communication in the subject area in Ukrainian and one of the common European languages. |

Learning outcomes

LO 7. Be able to apply modern technologies of programming and software development, software implementation of numerical and symbolic algorithms.

LO 8. Be able to apply specialized software products and software systems of computer mathematics, big data analysis, etc. in practical work.

LO 9. Demonstrate skills in interacting with other people, effective communication with specialists and society, ability to work in groups and teams, conflict, and stress management.

LO 10. Be able to collect, process, analyze, and systematize scientific and technical information, while avoiding plagiarism, form and make judgments, and develop presentations and publications.

LO 11. Demonstrate skills in professional communication, oral and written communication in Ukrainian and at least one other European language |

Scope of the discipline

|The total volume of the discipline is 330 hours (11 ECTS credits). |

Prerequisites for studying the discipline

|Disciplines of general and special training in 1-3 semesters of study following the list of educational components. |

Features of the discipline, methods, and technologies of education

|Practice involves the individual work of students of higher education. During the practice, applicants must study the structure of the enterprise, the functions of its divisions, organizational and informational relationships between them, the corresponding scheme of information flows; technological processes of the enterprise, in particular, information processing processes; the main characteristics of modern equipment and means of development, testing, and maintenance of software systems used; means of organization and planning of work based on the practice; means of labor protection and safety.

To manage the practice of each applicant, the department appoints pre-diploma practice managers. The responsibilities of the practice managers are to develop and provide applicants with individual tasks and other instructions for completing the practice; monitor the timeliness of the formation and implementation of individual practice schedules; advice on the implementation of the individual practice task and the execution of practice documents; timely preparation of feedback and preliminary assessment of the applicant's work in practice based on the verification of the practice report and the results of the individual task.

To manage the practice of each applicant, the head of the enterprise - the practice base appoints a pre-diploma practice manager. The responsibilities of the practice managers from the enterprise are to monitor the applicants' compliance with labor discipline and safety regulations; develop and provide applicants with individual tasks and other instructions for completing the practice; monitor the timeliness of the formation and implementation of individual practice schedules; advise on the implementation of the individual practice task and the execution of practice documents; creating conditions for high-quality implementation of the internship program and assisting applicants in obtaining materials for the report and improving their qualifications; timely preparation of feedback (evaluating the attitude to work, compliance with labor discipline, level of theoretical and practical training, etc.) and preliminary assessment of the applicant's work in practice based on checking the internship report, results of the individual task, and other internship documents. |

Program of educational discipline

Topics of lectures

|Lectures are not provided within the discipline. |

Topics of practical classes

|Practical classes within the discipline are not provided. |

Topics of laboratory work

|Laboratory work is not provided within the discipline. |

Self-learning

|An individual task is drawn up with the participation of the practice supervisor from the university, and the practice supervisor from the enterprise and is agreed upon with the supervisor of the final qualification work after the distribution of interns to jobs. The working hours of the internship are 30 hours per week.

During the practice, applicants must:

- fully perform the tasks stipulated in the practice program;
- study and adhere to the rules of labor protection, safety, and industrial sanitation;
- participate in the social life of the enterprise - the internship base;
- be responsible for the work performed on an equal basis with all employees.

Upon completion of the internship, the applicant must prepare all necessary reporting documentation, which includes an internship diary, a practice report, and a presentation. |

Literature and educational materials

| Training materials and tasks are provided by practice supervisors |

Evaluation system

Criteria for evaluating student performance and distribution of points

The main tasks of the pre-graduate practice are reflected in the Practice Diary in which the applicant records the content and scope of the work performed, as well as its results throughout the practice. The actual implementation is certified by the practice supervisor from the enterprise, who, upon completion of the practice, prepares a response to the implementation of the practice program. The main document on the implementation of the pre-graduate practice program is the applicant's written Report, which, together with the Practice Diary, is submitted for review to the practice supervisor from the department within the period regulated by regulatory and methodological documents on the organization and conduct of the practice.

Based on the results of the Report review, the head of the practice from the department writes a general review and determines the grade with which the Report is recommended for defense before the commission. The summary of the pre-diploma practice is made in the form of a differentiated assessment, which is accepted by the commission, the composition of which is determined by the head of the department (at least 2 members of the commission).

The applicant's points are calculated according to the following ratio:

The head's review from the enterprise - 40% of the total grade;

The head's review from the department - 30% of the total grade;

The defense of the pre-diploma practice - 30% of the total grade..|

Rating scale

Total points	National assessment	ECTS
90–100	Perfectly	A
82–89	Good	B
75–81	Good	C
64–74	Satisfactorily	D
60–63	Satisfactorily	E
35–59	Unsatisfactorily (further study required)	FX
1–34	Unsatisfactorily (further study required)	F

Norms of academic ethics and policy of the course

| The student must adhere to the "Code of Ethics of Academic Relations and Integrity of NTU "KhPI": show discipline, education, benevolence, honesty, and responsibility. Conflict situations should be openly discussed in study groups with the teacher, and if it is impossible to resolve the conflict, it should be brought to the attention of the employees of the institute's directorate.

Regulatory and legal support for the implementation of the principles of academic integrity of NTU "KhPI" is posted on the website: <http://blogs.kpi.kharkov.ua/v2/nv/akademichna-dobrochesnist/> |

Approval

Syllabus approved by

Date of approval, signature
31.08.2023.



Head of the department
Olena AKHIEZER

Date of approval,
signature
31.08.2023



Guarantor of Educational
Program
Leonid LYUBCHYK