Syllabus
Course Program

Introductory practice at the "Innovation Campus"

Specialty
122 – Computer Science

Institute
Institute of Computer Science and Information Technology

Educational program
Computer Science and Intelligent Systems

Department
Software Engineering and Management Intelligent Technologies (321)

Level of education
Bachelor's level

Course type
Special (professional), Mandatory

Semester
2

Language of instruction
English, Ukrainian

Lecturers and course developers

Iryna Liutenko

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Candidate of Technical Sciences (PhD), Associate Professor, Associate Professor of the Department of Software Engineering and Management Intelligent Technologies of NTU "KhPI"

Prepared and published more than 60 publications, 1 collective monograph, 1 textbook with the university stamp, 3 articles in publications indexed in Scopus (Google Scholar: https://scholar.google.com/citations?user=9EhcsRcAAAAJ; ORCID: https://orcid.org/0000-0003-4357-1826).
More about the lecturer on the department's website

Mariia Bilova

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Candidate of Technical Sciences (PhD), Associate Professor, Associate Professor of the Department of Software Engineering and Management Intelligent Technologies of NTU "KhPI"

Prepared and published more than 50 publications (Google Scholar: https://scholar.google.com/citations?user=b3YLGToAAAAJ; ORCID- https://orcid.org/0000-0001-7002-4698; Scopus https://www.scopus.com/authid/detail.uri?authorId=57190442390).
More about the lecturer on the department's website

General information

Summary

Introductory practice is a part of the educational process and is conducted in the 1st year of study in the 2nd semester for full-time students. The duration of the internship is 90 hours (3 credits). Introductory practice is aimed at providing students with the opportunity to get acquainted with the practical aspects of the chosen field, improve professional skills and understand the real requirements and challenges of this specialty. During the internship, students will have the opportunity to participate in various processes and see how theoretical knowledge is transformed into practical skills in a real work

environment. The internship will help students identify their interests and goals in professional development, as well as gain valuable experience necessary for their future career.
The introductory practice serves as a selection criterion for the Innovation Campus and takes place at the Innovation Campus training laboratory of the National Technical University "Kharkiv Polytechnic Institute".

Course objectives and goals

Developing the skills of independent work, teamwork, time management, and the ability to follow the terms of reference.

Format of classes

Self-study. Final control in the form of a credit.

Competencies

GC1. Ability to think abstractly, analyze and synthesize.
GC2. Ability to apply knowledge in practical situations.
GC3. Knowledge and understanding of the subject area and understanding of professional activities.
GC4. Ability to communicate in the state language both orally and in writing.
GC5. Ability to communicate in a foreign language.
GC6. Ability to learn and master modern knowledge.
GC7. Ability to search, process and analyze information from various sources.
GC8. Ability to generate new ideas (creativity).
GC9. Ability to work in a team.
GC12. Ability to evaluate and ensure the quality of work performed.
GC13. Ability to act on the basis of ethical considerations.
PC3. Ability to think logically, build logical conclusions, use formal languages and models of algorithmic computing, design, develop and analyze algorithms, evaluate their effectiveness and complexity, solvability and intractability of algorithmic problems for adequate modeling of subject areas and creation of software and information systems.
PC8. Ability to design and develop software using various programming paradigms: generalized, object-oriented, functional, logical, with appropriate models, methods and algorithms of computation, data structures and control mechanisms.

Learning outcomes

PLO1. To apply knowledge of the basic forms and laws of abstract and logical thinking, the basics of the methodology of scientific knowledge, forms and methods of extracting, analyzing, processing and synthesizing information in the subject area of computer science.
PLO5. Design, develop and analyze algorithms for solving computational and logical problems, evaluate the effectiveness and complexity of algorithms based on the use of formal models of algorithms and computable functions.
PLO9. Develop software models of subject environments, choose a programming paradigm from the standpoint of convenience and quality of application for the implementation of methods and algorithms for solving problems in the field of computer science.

Student workload

The total volume of the course is 90 hours (3 ECTS credits): self-study - 90 hours.

Course prerequisites

Students must complete the mandatory general and specialization courses in the 1st semester of study in full.

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

The practice involves the use of modern educational technologies: peer-to-peer, teamwork, gamification, Challenge Based Learning (CBL), automated testing using LMS (Learning Management System).

Program of the course

Topics of the lectures

Lectures are not provided as part of the practice.

Topics of the workshops

Workshops are not provided as part of the practice.

Topics of the laboratory classes

Laboratory classes are not provided as part of the practice.

Self-study

During the internship, students must:
- fully fulfill the tasks provided by the internship program;
- study and comply with the rules of labor protection, safety and industrial sanitation;
- participate in the social life of the training laboratory "Innovative Campus";
- be responsible for the work performed on an equal footing with all students participating in the internship.

Course materials and recommended reading

Training materials and assignments are provided by the internship supervisors.

Assessment and grading

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

The main assessment measures are:
- presentation of the developed software to the commission formed from the staff of the Innovative Campus training laboratory and other higher education students undergoing internship;
- review of the project practice report and the practice diary by the practice supervisor and the commission.

The project practice report must contain:
- introduction: this part should provide a brief overview of the goals and object of the practice, indicate the period and duration of the practice, and describe the context and conditions in which it took place;
- description of technologies: provide a description of the technologies used by the student during the introductory practice;
- results: provide examples of the developed software and the results of its operation on various test data;
- conclusions: summarize the results of the internship and highlight the results obtained, indicate what skills and knowledge were acquired, how they meet academic goals, and their application in practice.

The main stages of work on the practice tasks should be properly presented in the practice diary.
The internship defense takes place in the "Innovation Campus" training laboratory.

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 08.06.2023 Head of the department
Ihor HAMAIUN

08.06.2023 Guarantor of the educational program
Andrii KOPP