QUALIFICATION DESCRIPTION

PhD Program	Computer systems, complexes and networks
Educational and Scientific Degree	PhD degree, level 8 under the National Qualifications Framework
Area	5. Technical Sciences
Professional field	5.3. Communication and computer equipment
Form of education	Full time / Part-time / Self-study / Under Art. 21, para. 7 of the Higher Education Act
Duration of study	Full time up to 3 years/Part-time up to 4 years/ Self-study and Under Art. 21, para. 7 of the Higher Education Act up to 5 years
Form of graduation	Defense of PhD Thesis

OBJECTIVES OF THE TRAINING

The doctoral program "Computer Systems, Complexes and Networks" aims to prepare highly qualified specialists in the field of computer and communication systems and technologies who can apply their knowledge and skills in various scientific and applied fields. The program focuses on developing research skills, critical thinking, and the ability to solve complex problems through the analysis and development of algorithms, the exploration of innovative communication protocols and systems, and the application of engineering and mathematical methods and techniques.

Objectives of the doctoral program.

- Creation of highly qualified scientific, research and teaching staff with experience in experimental activities in the field of computer and communication systems and technologies, who are given freedom of study and research, taking into account the differences in their interests;
- Integration of research and training of PhD students through the reproduction and multiplication of new knowledge and market-based scientific products;
- Sustainable development of academic activities in accordance with international quality standards in the training of doctoral students;
- Activation of the academic initiative and scientific potential of IICT for the implementation of projects and research arising from the new market needs and the challenges of the changing environment.

CONTENT OF THE TRAINING

The doctoral program in "Computer systems, complexes and networks" has been developed following the requirements and provisions of the Higher Education Act, the 3rd Higher Education Act and the Regulations on the Conditions and Procedure for Acquiring Scientific Degrees and Academic Positions at the Bulgarian Academy of Sciences and the Regulations on the Specific Conditions for Acquiring Scientific Degrees and Occupying Academic Positions at IICT-BAS. The

discussion and adoption took place at a meeting of the Scientific Council of the Institute. The training of PhD students is conducted according to an individual educational plan tailored to the chosen topic of their dissertation. In the individual plan, according to the Program of the doctoral program, the mandatory for the PhD student is noted in detail the general educational, language, IT and specialized courses, scientific research (literature research, empirical research), approbation of the results on the topic of the dissertation (participation in doctoral and scientific forums, publications in reputable journals), etc. PhD students submit an annual attestation of the work done according to their individual plan and, if necessary, its update. The yearly attestation of each PhD student is discussed and adopted at a meeting of the National Assembly of the Institute. According to the Law on Dissertations, full-time PhD students also submit quarterly reports on the work carried out on the dissertation.

KNOWLEDGE, SKILLS AND PROFESSIONAL COMPETENCES

Basic competencies consisting of:

- In-depth knowledge of theories, concepts, principles and models related to computer, communication and information sciences;
- ability to make comparative analyses and choose an appropriate solution from among alternative solutions;
- Ability to propose new concepts, principles, and models for solving a specific problem.

Scientific and specialized competencies (in the scientific field) – presenting knowledge and skills necessary for the dissertation research:

- carrying out research in the field of communications, computer and technical sciences;
- conducting interdisciplinary research;
- formulating and preparing proposals for research projects;
- dissemination of the acquired knowledge in the form of publications.

Additional skills:

- ability to work together as members of scientific teams and develop organizational skills;
- Being interested in modern trends and innovations in technology and maintaining stable professional growth and self-improvement;
- Good presentation skills.

In addition to specific knowledge, emphasis is also placed on the acquisition of skills such as use of specialized literature (including in a foreign language); systematization, generalization and analysis of existing statements; independent conduct of scientific and applied research; shaping and presenting the results in an understandable, logical, precise and correct way.

Dissertation topics are formulated based on real problems that companies face. PhD students are encouraged to focus their research activities in promising areas that meet the public expectations and needs of the country, which would also favor their own realization after the successful completion of this educational and scientific degree.

PROFESSIONAL REALIZATION

The knowledge and skills accumulated in the educational cycle allow realization in

research, production, implementation and design units dealing with increasing the efficiency of existing and innovative productions. The training provides knowledge and skills for solving complex scientific problems, managing design, technological, and scientific units, as well as training students in higher education institutions.

After completing this doctoral program, doctors can pursue further studies in postdoctoral programs at home or abroad.

The Scientific Council of IICT-BAS approves the Qualification description on 26.3.2025 (Record № 3).

Approved by:

corr. mem. Sv. Margenov