

**MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
STATE UNIVERSITY OF INFORMATION AND COMMUNICATION
TECHNOLOGIES**

**EDUCATIONAL-PROFESSIONAL PROGRAM
SOFTWARE ENGINEERING
BACHELOR'S LEVEL (FIRST CYCLE) OF HIGHER
EDUCATION**

Specialty F2 Software engineering

Branch of knowledge F Information technology

Qualification Bachelor of software engineering

APPROVED BY THE ACADEMIC COUNCIL OF THE
UNIVERSITY
Protocol № 3 of March 17, 2026
Order № 03.07 of March 20, 2026
Rector _____ Volodymyr SHULHA

The educational program will be implemented from September 1, 2026



Київ-2026

**LETTER OF AGREEMENT
EDUCATIONAL-VOCATIONAL PROGRAM
OF TRAINING OF HIGHER EDUCATION STUDENTS**

Specialty	F2 Software engineering
Branch of knowledge	F Information technology
Level of higher education	Bachelor's Level (First Cycle)
Qualification	Bachelor of software engineering

1. First Vice-Rector



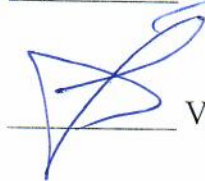
Oleksandr KORCHENKO

2. Vice-Rector for Educational Work



Arthur GUDMANIAN

3. Head of the Educational and
Methodological Department



Vadym VLASENKO

4. Academic Council of the Educational and Scientific Institute
of Information Technologies
Protocol №10 of February 24, 2026

Chairman of the Educational and Scientific
Institute of Information Technologies



Kateryna NESTERENKO

Department of Software Engineering
Protocol №7 of February 11, 2026

Head of the Department of
Software Engineering



Iryna ZAMRII

Chairman of the Student Council of the Educational
and Scientific Institute of Information
Technologies



Maksym MARCHENKO

Reviews from external stakeholders (partner companies):

1. Limited Liability Company "SIGMA SOFTWARE".
2. Borys Grinchenko Kyiv Metropolitan University

FOREWORD

Developed by the working group comprising:

**Guarantor of the Educational
and Professional Program**

Yurii ZADONTSEV

– Candidate of Technical Sciences, Associate Professor
of the Department of Software Engineering

**Members of the working
group:**

Iryna ZAMRII

– Doctor of Technical Sciences, Professor, Head of the
Department of Software Engineering;

Danylo KOVALENKO

– Doctor of Philosophy in Computer Engineering,
Associate Professor of the Department of Software
Engineering;

Bohdan KHUDIK

– Doctor of Philosophy in Computer Engineering,
Associate Professor of the Department of Software
Engineering;

Valeriia LAPUTSKA

– applicant of the first (Bachelor's) level of higher
education, specialty 121 Software Engineering;

Olga OSEREDCHUK

– University Programs Manager, Sigma Software LLC.

The Educational and Professional Program complies with the Standard of Higher Education for specialty 121 Software Engineering at the first (Bachelor's) level of higher education, approved by Order of the Ministry of Education and Science of Ukraine No. 1166 of 29.10.2018

Educational Program Profile

1 – General Information	
Full name of the higher education institution and structural unit	State University of Information and Communication Technologies, Educational and Scientific Institute of Information Technologies
Degree of higher education and name of qualification in the original language	Bachelor Educational qualification – Bachelor in Software Engineering
Official name of the educational program	Educational and Professional Program "Software Engineering"
Type of diIPHma and volume of the educational program	Bachelor's degree, single. The scope of the educational program: – based on complete general secondary education is 240 ECTS credits (duration of study: 3 years 10 months full-time).
Accreditation status	The educational program is being introduced for the first time. It will be in effect from 01.09.2026.
Cycle/level	NQF of Ukraine – level 6 / Bachelor, QF-EHEA – first cycle, EQF-LLL – level 6
Prerequisites	A certificate of complete general secondary education or a junior bachelor's / junior specialist's diIPHma
Language(s) of instruction	Ukrainian, English
Validity period of the educational program	The program was launched in 2026 and developed in accordance with the Regulations on the Implementation and Update of Educational Programs at the State University of Information and Communication Technologies, Minutes of the Academic Council No. 3 dated March 17, 2026. The program will be implemented from 01.09.2026. The program remains valid for the duration of the state standards of higher education and may be adjusted in accordance with the current regulatory documents of the State University of Information and Communication Technologies.
Internet address of the permanent location of the educational program description	https://duikt.edu.ua/ua/1774-osvitno-profesiyni-programi-kafedra-inzhenerii-programnogo-zabezpechennya [in Ukrainian]

2 – Purpose of the Educational Program

Formation and development of general and professional competences in graduates with the educational degree of "Bachelor" in specialty F2 "Software Engineering", capable of solving complex tasks and practical problems of designing, developing and testing software systems, creating and maintaining software of various purposes, and supporting and ensuring software quality.

The uniqueness of the educational program (EP) lies in its orientation toward increasing the competitiveness of graduates in the labor market through the development of promising areas such as game-application development for various hardware and software platforms, the use of software tools based on computer graphics technologies, the implementation of high-performance computing based on cloud services and technologies, and parallel and distributed computing.

3 – Characteristics of the Educational Program

Subject area, direction (field of study, specialty)

Object: software, processes, tools and resources for software development, maintenance and quality assurance.

Learning objective: training of specialists capable of setting and solving tasks related to the development, maintenance and quality assurance of software of a general and special nature.

Theoretical content of the subject area: basic mathematical, informational, physical, and economic principles of software creation and maintenance; the fundamentals of domain analysis, modeling, design, construction, and maintenance of software.

Methods, techniques and technologies: methods and technologies of software development; collection, processing and interpretation of the results of research in software engineering.

Tools and equipment: software, hardware and instrumental means for software development, maintenance and operation.

Orientation of the educational program

Educational-professional. 100% of the volume of the educational program is aimed at ensuring general and professional (field-specific) competences in specialty F2 Software Engineering, as defined by the Standard of Higher Education.

The program has an applied nature and is aimed at meeting the needs of the labor market, in particular in the IT sector.

Main focus of the educational program and specialization	The educational program has an applied nature and is aimed at research in the field of information technology, at training specialists capable of using and implementing the latest technologies related to the development, maintenance and quality assurance of software, the development of game applications for various hardware and software platforms, the use of software tools based on computer graphics technologies, the implementation of high-performance computing based on cloud services and technologies, parallel and distributed computing technologies, and technologies for the design and administration of databases and data warehouses. Keywords: software engineering, programming languages, software development technologies, computer graphics, game development, high-performance computing, cloud technologies, databases and data warehouses.
Features of the program	Teaching of selected topics of the educational components of the professional training cycle in English. Close cooperation with IT companies makes it possible to teach modern software development technologies through real-world examples delivered by specialists in the field of software engineering, and to complete practical training (educational, production, and pre-diPHma) by carrying out real IT projects. The program places a particular emphasis on modern languages (C++, C#, Java, Python, JavaScript, HTML, CSS, SQL, etc.) and software development technologies (Agile and Scrum). Opportunity to obtain certificates within the educational process for the following courses: C#, TFS, WF, ADO.NET, HTML, CSS, JS – CyberBionic Systematics certificate; C++ – Cisco certificate; Python – Cisco certificate.
4 – Suitability of Graduates for EmPHment and Further Study	
Suitability for emPHment	Work in the field of software development and in the field of informatization of processes and phenomena of various kinds. Software engineering specialists may work at enterprises of all forms of ownership, of various profiles and levels, as well as in design organizations, consulting centers, and scientific and educational institutions.

	A Bachelor in Software Engineering is capable of performing professional work according to the National Classifier of Occupations of Ukraine, NCO 003:2010 (ДК003:2010). Primary: 3121. Software Development and Testing Specialist. Additional: 3121. Software Technician; 3121. Information Technology Specialist; 3121. Computer Graphics (Design) Specialist; 3121. Computer Programs Development Specialist
Further study	Opportunity to continue studies at the second (Master's) level of higher education. Acquisition of additional qualifications within the postgraduate education system.
5 – Teaching and Assessment	
Teaching and learning	The teaching is conducted in English. The teaching is aimed at acquiring knowledge, skills and abilities for their further application in practice. The main means of teaching the content of the educational program are lectures, practical, laboratory and individual classes, consultations, solving situational tasks, testing, presentations, as well as educational, industrial and pre-diploma practice.
Assessment	The assessment of the competences formed is carried out during control measures envisaged by this educational program and specified in the curriculum. The criteria for assessing the knowledge, skills and abilities of higher education applicants are developed in accordance with the applicable legislation and are approved in the Regulations on the Organization of the Educational Process at the State University of Information and Communication Technologies (Положення про організацію освітнього процесу у Державному університеті інформаційно-комунікаційних технологій).
6 – Program Competences	
Integral competence	The ability to solve complex specialized tasks or practical problems of software engineering characterized by complexity and uncertainty of conditions, through the application of theories and methods of information technology.

General Competences (3K)	3K 1. Ability to engage in abstract thinking, analysis, and synthesis. 3K 2. Ability to apply knowledge in practical situations. 3K 3. Ability to communicate in the state language both orally and in writing. 3K 4. Ability to communicate in a foreign language both orally and in writing. 3K 5. Ability to learn and master contemporary knowledge. 3K 6. Ability to search for, process, and analyse information from various sources. 3K 7. Ability to work in a team. 3K 8. Ability to act on the basis of ethical considerations. 3K 9. Commitment to the preservation of the environment. 3K 10. Ability to act in a socially responsible and conscious manner. 3K 11. Ability to exercise one's rights and duties as a member of society, to be aware of the values of a civil (free democratic) society and of the need for its sustainable development, the rule of law, and the rights and freedoms of persons and citizens in Ukraine. 3K 12. Ability to preserve and enhance the moral, cultural, and scientific values and achievements of society on the basis of an understanding of the history and regularities of development of the subject area, its place within the overall system of knowledge of nature and society and within the development of society, engineering, and technology; to use various forms and types of physical activity for active recreation and for leading a healthy lifestyle. 3K 13. Ability to make decisions and act in accordance with the principle of intolerance of corruption and of any manifestations of dishonesty. 3K 14. Ability to be aware of constitutional rights and duties, and to protect the sovereignty, independence, and territory of Ukraine.
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Professional (field-specific) Competences (CK)	CK 1. Ability to identify, classify, and formulate requirements for software. CK 2. Ability to participate in software design, including the modelling (formal description) of its structure, behaviour, and operational processes. CK 3. Ability to develop architectures, modules, and components of software systems. CK 4. Ability to formulate and ensure software quality requirements in accordance with customer requirements, technical specifications, and standards. CK 5. Ability to comply with specifications, standards, rules, and recommendations in the professional field when implementing lifecycle processes. CK 6. Ability to analyse, select, and apply methods and tools for ensuring information security (including cybersecurity). CK 7. Knowledge of information data models; ability to create software for the storage, retrieval, and processing of data. CK 8. Ability to apply fundamental and interdisciplinary knowledge to the successful solution of software-engineering tasks. CK 9. Ability to assess and take into account the economic, social, technological, and ecological factors that affect the field of professional activity. CK 10. Ability to accumulate, process, and systematise professional knowledge concerning the creation and maintenance of software, and to recognise the importance of lifelong learning. CK 11. Ability to implement the phases and iterations of the lifecycle of software systems and information technologies on the basis of relevant software-development models and approaches. CK 12. Ability to carry out the system integration process, and to apply standards and change-management procedures to maintain the integrity, overall functionality, and reliability of software. CK 13. Ability to make well-grounded choices and to master tools for software development and maintenance. CK 14. Ability to engage in algorithmic and logical thinking. CK 15. Ability to make well-grounded choices and to master tools for creating modern game applications for various hardware and software platforms. CK 16. Ability to implement high-performance computing based on cloud services and technologies and on parallel and distributed computing in the development and operation of distributed systems for parallel information processing.
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7 – Program Learning Outcomes

IPPH 1. Analyze and purposefully search for and select the information and reference resources and knowledge necessary to solve professional tasks, taking into account modern achievements in science and technology.

IPPH 2. Know the code of professional ethics, understand the social significance and cultural aspects of software engineering, and adhere to them in professional activity.

IPPH 3. Know the main processes, phases, and iterations of the software life cycle.

IPPH 4. Know and apply professional standards and other regulatory and legal documents in the field of software engineering.

IPPH 5. Know and apply appropriate mathematical concepts, methods of domain, system, and object-oriented analysis, and mathematical modeling for software development.

IPPH 6. Ability to select and use a software development methodology appropriate to the task.

IPPH 7. Know and apply in practice the fundamental concepts, paradigms, and basic principles of the functioning of the language, tool, and computational means of software engineering.

IPPH 8. Be able to develop a human-machine interface.

IPPH 9. Know and be able to use methods and means of gathering, formulating, and analyzing software requirements.

IPPH 10. Conduct a pre-design survey of the subject area and a system analysis of the object being designed.

IPPH 11. Select input data for design, guided by formal methods of requirements description and modeling.

IPPH 12. Apply in practice effective approaches to software design.

IPPH 13. Know and apply methods of algorithm development, software construction, and data and knowledge structures.

IPPH 14. Apply in practice software tools for domain analysis, design, testing, visualization, measurement, and documentation of software.

IPPH 15. Motivatedly choose programming languages and development technologies to solve tasks of creating and maintaining software.

IPPH 16. Have skills in team development, coordination, formatting, and release of all types of software documentation.

IPPH 17. Be able to apply methods of component-based software development.

IPPH 18. Know and be able to apply information technologies for data processing, storage, and transmission.

IPPH 19. Know and be able to apply methods of software verification and validation.

IPPH 20. Know approaches to software quality assessment and assurance.

IPPH 21. Know, analyze, select, and competently apply means of ensuring information security (including cybersecurity) and data integrity in accordance with the applied tasks being solved and the software systems being created.

IPPH 22. Know and be able to apply methods and means of project management.

IPPH 23. Be able to document and present the results of software development.

IPPH 24. Be able to calculate the economic efficiency of software systems.

IPPH 25. Be able to apply tools for creating modern gaming applications for various hardware and software platforms.

IPPH 26. Be able to perform parallel and distributed computations, apply numerical methods and algorithms for parallel structures, and parallel programming languages in the development and operation of parallel and distributed software.

IIPH 27. Ability to defend the Motherland, independence, and territorial integrity of Ukraine.

8 – Resources for Program Implementation

Staffing

The implementation of the educational and professional program involves academic and teaching staff with a high level of educational-methodological, research, and professional activity, as well as specialists from partner firms. The staffing of the educational program complies with the Licensing Conditions for Conducting Educational Activities, approved by the Cabinet of Ministers of Ukraine.

Leading specialists in the field of software engineering are invited to deliver guest lectures.

Material and Technical Support

To conduct practical and laboratory classes aimed at the formation of professional competences in specialty 121 Software Engineering, the resources of the State University of Information and Communication Technologies are used, including the laboratories of the Department of Software Engineering and other educational classrooms and laboratories of the University, in particular:

- the "Devops" educational laboratory;
- the "Epam and Project Management" educational laboratory;
- the "Programming Languages" educational laboratory;
- the "Artificial Intelligence Technologies" educational laboratory;
- the "Digital Technologies" educational laboratory;
- the "Robotics" educational laboratory;
- the "Oracle Technologies" educational laboratory;
- the "Mathematics + IT" Educational Laboratory of Computer Modeling and Intellectual Development.

Separate classes in specialized disciplines are held at the offices of IT companies — partners of the Department of Software Engineering — using the companies' material and technical resources.

Information and Educational-Methodological Support

All disciplines of the curriculum are provided with information and educational-methodological materials and are hosted on the Google Workspace for Education distance-learning system, including access to the electronic library.

9 – Academic Mobility

National Credit Mobility

The existence of bilateral agreements between the State University of Information and Communication Technologies and higher education institutions of Ukraine ensures national credit mobility.

International Credit Mobility	The content of the educational and professional program complies with the Standards of Higher Education, which makes it possible to participate in double-degree programs and to be competitive on the global labor market.
Education of Foreign Higher Education Applicants	-

1. 1. List of Components of the Educational and Professional / Scientific Program and Their Logical Sequence

1.1. 2. Content of Preparation under the Educational Program, Competences, and Learning Outcomes

No.	Discipline	Code	Competence	Learning Outcome
I. Cycle of General Preparation Disciplines				
1	Ukrainian Language for Professional Purposes	OK1	3K3, 3K6, 3K7, 3K8	ПРН 1, ПРН 23
2	Philosophy	OK2	3K1, 3K8, 3K11, 3K12	ПРН 1
3	English for professional communication	OK3	3K4	ПРН 1, ПРН 23
4	Higher Mathematics	OK4	3K1, 3K2, 3K5, 3K6, CK8, CK14	ПРН 1, ПРН5
5	Management and Entrepreneurship in IT	OK5	3K2, 3K6, 3K10, CK9	ПРН 3, ПРН4, ПРН16, ПРН22, ПРН24
6	Group Dynamics and Communications	OK6	3K7, 3K8, 3K10, 3K13	ПРН 1, ПРН 16
7	Theoretical Training of Basic General Military Training**	OK7	3K9, 3K14	ПРН 27
8	Computer Discrete Structures	OK8	3K1, 3K2, 3K5, 3K6, CK8, CK14	ПРН 1, ПРН 5
9	Operations Research	OK9	3K2, CK8, CK14	ПРН1, ПРН 5
10	Fundamentals of Databases	OK10	3K6, CK7	ПРН10, ПРН11, ПРН18
11	IT project management	OK 11	3K7, CK8, CK10	ПРН1, ПРН16
II. Cycle of Professional and Practical Preparation Disciplines				
12	Programming	OK12	3K1, 3K2, CK1, CK3, CK7, CK11, CK14	ПРН3, ПРН6, ПРН12, ПРН15
13	Fundamentals of Software Engineering	OK13	3K1, 3K2, 3K6, 3K13, CK4, CK5, CK10	ПРН1, ПРН2, ПРН3, ПРН7
14	Algorithms and Data Structures	OK14	3K1, CK1, CK7, CK14	ПРН13, ПРН15
15	UX/UI Design Technologies	OK15	3K2, 3K6, 3K10, CK1, CK2, CK4, CK8	ПРН7, ПРН8, ПРН10, ПРН11, ПРН12
16	Web design and Web technologies	OK16	CK4, CK10	ПРН 8, ПРН15, ПРН18
17	Software Requirements Analysis	OK17	3K2, 3K6, CK1, CK4, CK9	ПРН9, ПРН10, ПРН11
18	Object-Oriented Programming C#	OK18	3K1, 3K2, CK1, CK3, CK8, CK11, CK13, CK14	ПРН3, ПРН6, ПРН12, ПРН14, ПРН17
19	Game Development	OK19	3K2, 3K5, 3K6, CK1, CK3, CK7, CK11, CK13, CK14, CK15	ПРН3, ПРН6, ПРН12, ПРН17, ПРН25
20	Software Modeling and Design	OK20	3K1, 3K6, CK1, CK2, CK3, CK5, CK11, CK13, CK14	ПРН3, ПРН7, ПРН10, ПРН11, ПРН12, ПРН23

21	Software Construction in JAVA	OK21	3K1, 3K6, CK1, CK3, CK5, CK7, CK11, CK12	ПРН3, ПРН4, ПРН6, ПРН7, ПРН12, ПРН13, ПРН15
22	Design and Administration Technologies for Databases and Data Warehouses	OK22	3K1, 3K6, CK7, CK13	ПРН10, ПРН11, ПРН18
23	Mobile Device Programming	OK23	3K2, CK1, CK3, CK4, CK7, CK11	ПРН3, ПРН6, ПРН12, ПРН15
24	Empirical Methods of Software Engineering	OK24	3K1, 3K2, 3K5, 3K6, CK8	ПРН1, ПРН5, ПРН7
25	Certification and Licensing of Software Products	OK25	3K6, 3K10, 3K11, 3K13, CK5, CK12	ПРН4, ПРН23
26	Software Quality and Testing	OK26	3K2, 3K6, CK4, CK5, CK9, CK12, CK13	ПРН9, ПРН14, ПРН20
27	Artificial Intelligence	OK27	3K1, 3K6, CK7, CK8	ПРН1, ПРН5, ПРН 8
28	Cloud Technologies	OK28	3K6, CK7, CK8, CK16	ПРН1, ПРН18, ПРН26
29	Security of Software and Data	OK29	3K6, 3K10, CK2, CK4, CK6, CK12, CK13	ПРН1, ПРН11, ПРН15, ПРН18, ПРН21
30	Professional Practice of Software Engineering	OK30	3K2, 3K5, 3K7, 3K13, CK2, CK5, CK8, CK9, CK10	ПРН2, ПРН3, ПРН4, ПРН18, ПРН 19, ПРН22, ПРН23
31	Fundamentals of Cybersecurity and Information Protection	OK31	3K2, 3K6, 3K13, CK6	ПРН4, ПРН10, ПРН21
32	Industrial Practice	OK32	3K2, 3K3, 3K6, 3K7, 3K11, 3K13, CK3, CK5, CK11, CK12	ПРН1, ПРН2, ПРН3, ПРН14, ПРН15, ПРН16, ПРН17, ПРН23
33	Pre-Diploma Practice	OK33	3K2, 3K3, 3K6, 3K13, CK4, CK8, CK10, CK12, CK13	ПРН1, ПРН2, ПРН3, ПРН6, ПРН22
34	Qualification Work, FA	OK34	3K2, 3K3, 3K6, 3K13, CK1, CK2, CK3, CK8, CK10, CK12, CK13	ПРН1, ПРН2, ПРН3, ПРН6, ПРН15

* In the curricula for foreigners and stateless persons, the Foreign Language course is replaced with Ukrainian Language for Professional Purposes.

** In the curricula for the extramural (part-time) form of study and for persons exempted from basic general military training, instead of MC8 "Theoretical Training of Basic General Military Training" the discipline MC8* "Application of Information and Communication Technologies" is taught.

1.2. List of Components of the Educational Program

Course Code	Components of the Educational Program (disciplines, course projects (works), practical training, qualification work)	Number of ECTS credits	Form of Final Assessment
1	2	3	4
Mandatory Components of the Educational Program			
OK1	Ukrainian Language for Professional Purposes	4	Pass/Fail
OK2	Philosophy	4	Examination
OK3	English for professional communication	6	Pass/Fail
OK4	Higher Mathematics	15	Pass/Fail / Pass/Fail / Examination
OK5	Management and Entrepreneurship in IT	3	Pass/Fail
OK6	Group Dynamics and Communications	3	Pass/Fail
OK7	Theoretical Training of Basic General Military Training**	3	Pass/Fail
OK8	Computer Discrete Structures	7	Examination / Examination
OK9	Operations Research	4	Examination
OK10	Fundamentals of Databases	4	Pass/Fail
OK11	IT project management	4	Examination
OK12	Programming	8	Examination / Examination
OK13	Fundamentals of Software Engineering	6	Examination
OK14	Algorithms and Data Structures	4	Examination
OK15	UX/UI Design Technologies	4	Pass/Fail
OK16	Web design and Web technologies	3	Pass/Fail
OK17	Software Requirements Analysis	4	Examination
OK18	Object-Oriented Programming C#	9	Examination / Examination / CW
OK19	Game Development	6	Examination
OK20	Software Modeling and Design	7	Examination / Examination
OK21	Software Construction in Java	8	Examination / Examination / CW
OK22	Design and Administration Technologies for Databases and Data Warehouses	9	Examination/CP/ Pass/Fail
OK23	Mobile Device Programming	4	Examination
OK24	Empirical Methods of Software Engineering	4	Examination
OK25	Certification and Licensing of Software Products	4	Examination
OK26	Software Quality and Testing	4	Examination
OK27	Artificial Intelligence	4	Pass/Fail
OK28	Cloud Technologies	4	Pass/Fail
OK29	Security of Software and Data	4	Examination
OK30	Professional Practice of Software Engineering	5	Pass/Fail
OK31	Fundamentals of Cybersecurity and Information Protection	3	Pass/Fail
OK32	Industrial Practice	6	Pass/Fail
OK33	Pre-Diploma Practice	6	Pass/Fail
OK34	Qualification Work, FA	6	

Total Volume of Mandatory Components:		180	180
Elective Components of the Educational Program			
BK1	<i>Student's Free Choice Course</i>	5	Pass/Fail
BK2	<i>Student's Free Choice Course</i>	5	Pass/Fail
BK3	<i>Student's Free Choice Course</i>	5	Pass/Fail
BK4	<i>Student's Free Choice Course</i>	5	Pass/Fail
BK5	<i>Student's Free Choice Course</i>	5	Pass/Fail
BK6	<i>Student's Free Choice Course</i>	5	Pass/Fail
BK7	<i>Student's Free Choice Course</i>	5	Pass/Fail
BK8	<i>Student's Free Choice Course</i>	5	Pass/Fail
BK9	<i>Student's Free Choice Course</i>	5	Pass/Fail
BK10	<i>Student's Free Choice Course</i>	5	Pass/Fail
BK11	<i>Student's Free Choice Course</i>	5	Pass/Fail
BK12	<i>Student's Free Choice Course</i>	5	Pass/Fail
Total Volume of Elective Components:		60	60
TOTAL VOLUME OF THE EDUCATIONAL PROGRAM		240	240

2.3 Structural and Logical Scheme of the Educational Program



2. Form of Attestation of Higher Education Applicants

Forms of Attestation of Higher Education Applicants	Attestation of higher education applicants is carried out in the form of a public defense of the qualification work.
Requirements for the Qualification Work	The defense of the qualification work is held openly and publicly. The qualification work involves solving a complex specialized task or a practical problem of software engineering characterized by complexity and uncertainty of conditions, using theories and methods of information technology. The qualification work must be checked for plagiarism in accordance with the Regulations on the Prevention of Academic Plagiarism at the State University of Information and Communication Technologies and published in the University repository.

4. Matrix of Correspondence of Program Competences to Components of the Educational Program

		OK1	OK2	OK3	OK4	OK5	OK6	OK7	OK8	OK9	OK10	OK11	OK12	OK13	OK14	OK15	OK16	OK17	OK18	OK19	OK20	OK21	OK22	OK23	OK24	OK25	OK26	OK27	OK28	OK29	OK30	OK31	OK32	OK33	OK34	
3K1			+		+				+				+	+	+				+		+	+	+		+											
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CK6																															+		+			
CK7											+		+		+					+		+	+	+					+	+						
CK8				+					+	+		+				+			+										+	+		+			+	+
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CK12																						+				+	+				+			+	+	+
CK13																			+	+	+		+				+			+				+	+	
CK14				+					+	+			+		+				+	+	+															
CK15																				+																
CK16																														+						

5. Matrix of Program Learning Outcomes (PPH) Coverage by Components of the Educational Program

Educational Program																																			
	OK1	OK2	OK3	OK4	OK5	OK6	OK7	OK8	OK9	OK10	OK11	OK12	OK13	OK14	OK15	OK16	OK17	OK18	OK19	OK20	OK21	OK22	OK23	OK24	OK25	OK26	OK27	OK28	OK29	OK30	OK31	OK32	OK33	OK34	
ПРН1	+	+	+	+		+		+	+		+		+												+			+	+	+		+	+	+	
ПРН2													+																		+	+	+	+	
ПРН3					+							+	+					+	+	+	+		+							+		+	+	+	
ПРН4					+															+					+					+	+				
ПРН5				+				+	+																+			+							
ПРН6												+						+	+		+		+				+						+	+	
ПРН7													+		+					+	+		+		+								+	+	
ПРН8															+	+					+	+			+			+							
ПРН9																	+									+									
ПРН10										+					+		+			+		+									+				
ПРН11										+					+		+			+		+							+						
ПРН12												+			+			+	+	+	+		+												
ПРН13														+							+														
ПРН14																		+								+							+		
ПРН15												+		+		+					+		+				+			+			+	+	
ПРН16				+	+						+																						+		
ПРН17																		+	+														+		
ПРН18										+						+						+						+	+	+					
ПРН19																															+				
ПРН20																										+									
ПРН21																													+	+		+			
ПРН22				+																										+		+		+	
ПРН23	+	+																		+					+					+		+			
ПРН24				+																													+		
ПРН25																			+																
ПРН26																												+							
ПРН27						+																													

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