

**Bachelor Educational Program**

Information Technology

**Degree To Be Awarded:**

**Bachelor of Information Technologies 0612**

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**Teaching Language:**

Georgian

**Program Volume (ECTS):**

240 credits

**Program Directors:**

Nona Otkhozoria, Candidate of Engineering Sciences, Associate Professor

Lili Petriashvili - Candidate of Engineering Sciences, Associate Professor

Revaz Khaindrava - Doctor of Economics, Associate Professor

**Program Objective:**

The goal of the bachelor's program is to prepare competitive, high-level specialists with broad theoretical knowledge and practice-oriented transferable skills necessary for professional activity in the field of modern information technologies in both local and international labor markets:

- Use of software for secure data acquisition, processing, transmission, and analysis, communication networks, and computer systems;
- Construction of computer networks adapted to modern requirements, development of end-user software, design of database management systems, administration of software and hardware systems, and service provision;
- Solving tasks and problems in information technologies with consideration of ethical and social responsibility, both individually and in a team environment.

**Program Learning Outcomes:**

1. Has relevant theoretical and practical knowledge of information systems and technologies.

2. Using standard and latest methods based on systemic knowledge identifies and formulates tasks to be solved in the main areas of information technologies;
3. Uses information technologies, multimedia systems, computer systems and networks, software engineering and web technologies' software and instrumental means to solve the problems posed before them;
4. Implements the design, security, development, and management of software systems, databases, web systems, and computer networks according to predetermined instructions and conditions;
5. Ensures effective communication in various professional contexts.
6. Upholds the values characteristic of professional activity in the field and shares them with others while adhering to ethical norms;

#### Prerequisites for Program Admission:

Citizens of Georgia with a state certificate/diploma confirming complete general education or an equivalent document are eligible for enrollment in the bachelor's educational program based on the results of the Unified National Examinations.

Without the results of the Unified National Examinations, the admission/enrollment of students in the bachelor's educational program is carried out following the procedures established by current legislation.

Enrollment in the bachelor's educational program through mobility is possible within the deadlines set by the Ministry of Education, Science, Culture and Sports of Georgia, subject to mandatory procedures and the rules established by the university.

Enrollment in the undergraduate educational program or transfer from a recognized higher education institution of a foreign country is carried out based on the decision of the Ministry of Education, Science, Culture and Sport of Georgia.

#### Program Structure

The undergraduate program is built based on the ECTS system, is student-oriented, and is based on the academic workload required to achieve the educational program's objectives.

The undergraduate educational program includes 240 ECTS credits, with 60 credits per year. Thus, the standard duration of the undergraduate program is 4 years or 8 semesters.

Depending on the student's workload, the number of credits per year may be less than or more than 60 but not exceeding 75.

1 ECTS credit equals 25 credit hours, including student contact hours (lecture, seminar, practicum, etc.) and independent work time (for midterm and final assessments and credit hours allocated for homework preparation and presentation).

The program is structured as follows:

- ✓ Mandatory courses in the main field of study 150 ECTS

- ✓ Elective courses in the main field of study - 30 ECTS
- ✓ Free mandatory courses - 40 ECTS.
- ✓ Free components - 20 ECTS.

The structure of the program's curriculum by semesters is as follows:

First semester	<ol style="list-style-type: none"> <li>1. Mandatory courses in the main field of study - 15 ECTS;</li> <li>2. Free mandatory courses 15 ECTS</li> </ol>
Second semester	<ol style="list-style-type: none"> <li>1. Mandatory courses in the main field of study - 15 ECTS;</li> <li>2. Free mandatory courses 15 ECTS</li> </ol>
Third semester	<ol style="list-style-type: none"> <li>1. Mandatory courses in the main field of study - 25 ECTS</li> <li>2. Free mandatory courses - 5 ECTS;</li> </ol>
Fourth semester	<ol style="list-style-type: none"> <li>1. Mandatory courses in the main field of study 25 ECTS</li> <li>2. Free mandatory courses - 5 ECTS;</li> </ol>
Fifth semester	<ol style="list-style-type: none"> <li>1. Mandatory courses in the main field of study 20 ECTS</li> <li>2. Elective courses in the main field of study - 10 ECTS</li> </ol>
Sixth semester	<ol style="list-style-type: none"> <li>1. Mandatory courses in the main field of study 10 ECTS</li> <li>2. Elective courses in the main field of study - 15 ECTS</li> <li>3. Free component - 5 ECTS</li> </ol>
Seventh semester	<ol style="list-style-type: none"> <li>1. Mandatory courses in the main field of study 25 ECTS</li> <li>2. Elective courses in the main field of study - 5 ECTS;</li> </ol>
Eighth semester	<ol style="list-style-type: none"> <li>1. Mandatory courses in the main field of study 15 ECTS</li> <li>2. Free component - 15 ECTS</li> </ol>

#### Teaching-Learning Methods:

In the learning process, depending on the specifics of a particular course, the following teaching methods are used:

- ✓ Verbal, so-called oral.
- ✓ Written work
- ✓ Explanation
- ✓ Action-oriented
- ✓ Project development and presentation
- ✓ Discussion/debates
- ✓ Cooperative learning //
- ✓ Collaborative work

- ✓ Case study
- ✓ Brainstorming
- ✓ Demonstration method

The teaching-learning methods of a specific course are reflected in the corresponding course syllabus.

### **Student Knowledge Assessment System:**

Credit can only be obtained after the student has achieved the learning outcomes planned in the syllabus, which the assessment results must confirm. The learning-teaching process of the courses offered by the undergraduate educational program involves the active participation of students and is based on the principle of continuous assessment of acquired knowledge. The mastery of the topics provided in the completed course program will be assessed on a 100-point system, which consists of the contribution of the components involved in the educational process.

The assessment of the level of achievement of the student's learning outcome in the educational program's learning component includes assessment forms - interim (one-time or multiple) and final assessment, the sum of which represents the final assessment (100 points). Of these:

- Interim assessment - 70 points
- Final assessment - 30 points

Each form and assessment component has a defined share in the final assessment from the total score (100 points), which is reflected in the specific syllabus and communicated to the student at the beginning of the academic semester.

### **The assessment system includes five types of positive and two types of negative assessments:**

#### **Positive assessments are:**

- (A) Excellent - 91-100 points;
- (B) Excellent - 81 – 90 points;
- (C) Good - 71 – 80 points;
- (D) Satisfactory - 61 – 70 points;
- (E) Sufficient - 51 - 60 points.

#### **Negative assessments are:**

(FX) did not pass - 41 - 50 points, which means that the student needs to work more to pass and is given the right to take an additional exam once, through independent work, in the same semester, no less than 5 days after the announcement of the results of the final exam. Considering the assessment received in the additional exam, if a score of 0-50 points is obtained in the final assessment of the educational component, the student will be assigned a grade of F - 0 points.

(F) Failed - 40 points and below, which means that the work done by the student is insufficient and they need to study the subject again.

The relevant syllabus defines the structure of the assessment of the undergraduate thesis.

### **The Program's Material and Technical resources:**

To achieve the learning outcomes envisaged by the program, the infrastructure and material-technical resources of the higher education institution, which are freely accessible to students without restrictions, are used, specifically:

- Properly equipped classrooms and conference halls;
- Library equipped with computer technology and information-communication technologies;
- Computer classes, computer technology connected to the internet and local network, and adequate computer programs for the learning/teaching process;
- Various technical devices.

Appropriate textbooks and methodological literature support the educational program. The higher education institution's library provides students with relevant printed and digital textbooks outlined in the course syllabi, teaching-methodological and scientific literature, the library's book fund database and a digital catalogue posted on the higher education institution's website.

The material resources owned and possessed by the higher educational institution ensure the realization of bachelor's educational program objectives and achievement of planned learning outcomes.

**Buildings** - The educational program is carried out in buildings owned and possessed by the higher educational institution, where sanitary-hygienic and safety norms are observed. The building fully meets the technical requirements for higher educational institutions and is equipped with appropriate technology and inventory (projector, chairs, desks, smart boards, etc.) for lecture and practical activities.

**Library** - The library of the higher educational institution maintains program-relevant printed and electronic collections accessible to students, invited students, and academic staff. The library has a reading hall with appropriate inventory (chairs, tables, computers, printer, copier, scanner). Students can use the internet and international digital resources in the reading room. In the library, it is possible to access textbooks and other internet resources online. Among them are 9 international EBSCOHost (<http://search.epnet.com>) Cambridge University Journals (<http://journals.cambridge.org>) digital libraries.

**Academic staff workspace** - A working environment equipped with appropriate inventory and technology (chairs, tables, cabinets, internet-connected computer, multifunctional photocopier) has been created for academic staff.

### **Information and Communication Technologies**

The HEI uses information and communication technologies to support the implementation and administration of the bachelor's educational program. There is software corresponding to the bachelor's program, and the existing computer equipment meets modern requirements. It is connected to the internet and accessible to students, academics, invited staff, and administrative staff. An electronic system for student knowledge assessment and learning organization is used to make grades accessible to students for the administration to monitor student's academic performance and support the learning process. Through the higher education institution's website, which contains the catalog of educational programs, information related to the implementation of educational programs and the conduct of the learning process, and other information, the HEI ensures information publicity and accessibility.

**Employment fields and opportunities for further study:**

After completing the bachelor's program, students can continue their studies at the second level of higher education.

The obtained degree will allow the graduate to be employed in any state and private organization where the administration of computer systems, computer networks, service provision, database design, implementation and servicing of information technologies, centralized data processing, centralized trading, emergency management, and ensuring information security are carried out.

N	Subject Code	Prerequisite	Subject/Module	ECTS Credit/Hour								Student's Learning Workload		
				I Year		Year II		Year III		Year IV		Contact hours	Independent subjects	
				I	II	III	IV	V	VI	VII	VIII			
				Free (mandatory) subjects										15
1	<b>SFB.1</b>	Without prerequisites	Academic writing	5/125									35	90
	<b>SFB.1.6</b>		Academic Writing (Eng)											
2	<b>SFB.2</b>	Without prerequisites	Information Technology	5/125									49	76
3	<b>SFB.3</b>	Without prerequisites	History of Philosophy (Conceptual Issues)		5/125								49	76
4	<b>SFB.4</b>	Without prerequisites	Democracy and Citizenship		5/125								49	76
	<b>SFB.5</b>		Foreign Language Module <sup>1</sup>											
			Foreign (English) Language Component <sup>2</sup>	5	5	5	5							
5.1	<b>SFB.5.1.1</b>	Without prerequisites	Practical English Language Course (B2.1)	5/125									64	61
	<b>SFB.5.1.2</b>	SFB.5.1.1	Practical English Language Course (B2.2)		5/125								64	61
	<b>SFB.5.1.3</b>	SFB.5.1.2	Practical English Language Course (B2. FCE1)			5/125							64	61
	<b>SFB.5.1.4</b>	SFB.5.1.3	Practical English Language Course (B2.FCE2)				5/125						64	61

<sup>1</sup> The foreign language module implies the student's achievement of the corresponding level in English. The student chooses the component for which the corresponding level was determined as a result of the test conducted by the center.

<sup>2</sup> Foreign (English) Language Component - for students of the Bachelor's program in Information Technology, who were determined to have a B1 level of English proficiency as a result of the English language proficiency assessment conducted by the foreign language learning center at the educational university.

N	Subject Code	Prerequisite	Subject/Module	ECTS Credit/Hour								Student's Learning Workload	
				I Year		Year II		Year III		Year IV		Contact hours	Independent subjects
				I	II	III	IV	V	VI	VII	VIII		
			Foreign (English) Language Component 3										
5.2	<b>SFB.5.1.5</b>	Without prerequisites	Practical course in the English language (B1.1)									64	61
	<b>SFB.5.1.6</b>	SFB.5.1.5	Practical course in the English language (B1.2)									64	61
	<b>SFB.5.1.1</b>	SFB.5.1.6	Practical course in the English language (B2.1)									64	61
	<b>SFB.5.1.2</b>	SFB.5.1.1	Practical course in the English language (B2.2)									64	61
			Foreign (English) Language Component <sup>4</sup>										
5.3	<b>SFB.5.1.7</b>	Without prerequisites	Practical course in the English language (A 2.1)									64	61
	<b>SFB.5.1.8</b>	SFB.5.1.7	Practical course in the English language (A 2.2)									64	61
	<b>SFB.5.1.5</b>	SFB.5.1.8	Practical course in the English language (B 1.1)									64	61
	<b>SFB.5.1.6</b>	SFB.5.1.5	Practical course in the English language (B 1.2)									64	61
			Foreign (English) Language Component <sup>5</sup>										

<sup>3</sup> Foreign (English) Language Component - for students of the Bachelor's program in Pharmacy who were determined to have an A2 level of English proficiency as a result of the English language proficiency assessment conducted by the foreign language learning center at the educational university.<6>

<sup>4</sup> Foreign (English) language component - for the program student, who has been determined to have a level of English language proficiency through the English language proficiency test conducted by the foreign language learning center at the university A 1 level.

<sup>5</sup> Foreign (English) language component - for the program student, who has not passed the unified national exams English language. Or the English language proficiency test conducted by the foreign language learning center at the university cannot confirm the competency.



N	Subject Code	Prerequisite	Subject/Module	ECTS Credit/Hour								Student's Learning Workload	
				I Year		Year II		Year III		Year IV		Contact hours	Independent subjects
				I	II	III	IV	V	VI	VII	VIII		
13	SITB0612.8	Programming in Python 2	Object-Oriented Programming - C#			5/125						49	76
14	SITB0612.9	Computer Architecture and Organization	Fundamentals of Operating Systems			5/125						49	76
15	SITB0612.10	Without prerequisites	Introduction to databases			5/125						49	76
16	SITB0612.11 SITB0612.11. En.2	Computer Architecture and Organization	Basics of Computer Networking			5/125						49	76
17	SITB0612.12	Without prerequisites	Fundamentals of Web Technologies				5/125					49	76
18	SITB0612.13 SITB0612.13. En.3	Basics of Computer Networking	Computer networks				5/125					49	76
19	SITB0612.14	Object-Oriented Programming - C#	Algorithms and Data Structures				5/125					49	76
20	SITB0612.15	Introduction to databases	Database Administration				5/125					49	76
21	SITB0612.17	Without prerequisites	Ethics and Social Responsibility				5/125					49	76
22	SITB0612.18	Fundamentals of Operating Systems	Fundamentals of Information Security					5/125				49	76
23	SITB0612.19 SITB0612.19 .En.4	Algorithms and Data Structures	Object-Oriented Programming in Java					5/125				49	76





N	Subject code	Prerequisite	Subject/Module	ECTS credit/hour								Student's learning workload	
												Contact hours	Independent subjects
39	SITB0612.E5	Without prerequisites	Graphic Programming	5/125								49	76
40	SITB0612.E6 SITB0612.E6.En.7	Computer networks	Blockchain and Cryptocurrency	5/125								49	76
41	SITB0612.E7	Programming in Python 2	Object-Oriented Programming (C++)	6/150								63	87
42	SITB0612.E8	Object-Oriented Programming C#	Software Design and Development	5/125								49	76
43	SITB0612.E9	Fundamentals of Web Technologies	Artificial Intelligence in Websites	6/150								63	87
44	SITB0612.E10	Without prerequisites	Fundamentals of Computer Graphics	5/125								49	76
45	SITB0612.E11	Without prerequisites	ISO Standards in Information Security	5/125								49	76
46	SITB0612.E12 SITB0612.E12.En.8	Fundamentals of Operating Systems	Working on Server Operating Systems	6/150								49	101

