CAUCASUS UNIVERSITY

Undergraduate Program in
Electronics and Computer Engineering

Program Name	Electronics and Computer Engineering
Degree level	Bachelor's
Type of the educational program	Academic
Instruction Language	Georgian
Expected Qualification	Bachelor of Engineering 04
Date of Program Approval	24 February 2017
Academic head of the Program	Guram Lezhava PhD. Porfessor at Caucasus University

Program Volume in Credit Hours

The program consists of 240 ECTS credits. Caucasus University uses European Credit Transfer and Accumulation System (ECTS) to describe volume of expected work from the students. A credit is a unit for volume of work that is required from the students in terms of time spent. 1 ECTS credit is worth of 25 hours of student's academic workload. Courses in the program are allocated based on their logical structure and sequence. Courses build up on the previously studied material and, therefore, enable students to acquire necessary knowledge. Courses in the program are divided into:

- General Educational Required & Elective Courses - **35 ECTS** Credits (Including Manadatory General English – Minimal Competency Level B2)
- Specialization Courses - **169 ECTS** Credits:
  - Basic Courses - 30 ECTS Credits
  - Specialization Courses - 139 ECTS Credits
- Elective Courses – **36 ECTS** Credits
- Free Courses - **20 ECTS** Credits

Admission Requirements

Any person having a secondary education is entitled to enrol on the Undergraduate Program in Electronics and Computer Engineering.
The precondition for the admission to the program is to pass the United National Examination held by the Legal Entity of Public Law - The National Assessment and Examinations Center.
An exception to the general rule of admission to the higher education institutions is made only in the cases stipulated by the law.

Program Description

Program Objectives

The Bachelor's Program aims to give a student the opportunity to get a better knowledge of the theoretical aspects of the higher level academic subjects than the general education and to prepare a person for further studies in the master's program or for practice, through the research programs.

The objective of the Bachelor's Program for Electronics and Computer Technologies is to train an engineering bachelor of the first level of higher education in conformity with the modern requirements who will have advanced knowledge in electronics, computer engineering, telecommunication, and will be able to use the knowledge in practice.

Learning Outcomes

After completion of the bachelor's educational program a graduate will receive general and subject competencies, namely:

A graduate knows:

- Theoretical basics and principles of electronics, computer engineering, telecommunications, as well as current processes in terminology and field.
- Principles of working of electronic devices, their calculation methods; computer architecture; security bases of work in computer and communication networks; analog and digital circuits theory; basics of electrodynamics; mathematical and computer (imitation) modeling; sensors and their connection diagrams; calculation of diagrams compiled on semiconductors, analog and digital microcircuits; programming of microprocessors and relevant modern software; telecommunication theory; evaluation of potential capabilities of the relevant communication system in case of transmitted information type and channel.

A graduate masters:

- Critical understanding of theories and principles, abstract thinking, finding information from various sources, processing of information received, its analysis and synthesis;
- Ability to retrieve and interpret data, analysis of retrieved data and/or situations standard and some advanced methods;
- Ability to understand the possibilities (limits) of professional activities.
- Ability to use creatively modern information and communication technologies, identify information sources (bibliography, documents, web pages) and retrieve additional information using relevant methodologies;
- Ability to use methods in electronics, computer engineering and telecommunication fields;
- Ability to implement research and practical projects in accordance with predetermined guidelines;
- Ability to read technical specifications, projects, wiring schemes;
- Ability to prepare separate parts of the electrical engineering documentation;
- Ability to use specific information technologies and software;
- Ability to form, manage and synchronize computer processes;
- Ability to conduct the technical analysis in the electronic scheme and calculate the parameters of electronic devices;
- Ability to work with a computer, operate software, use computer resources;
- Ability to identify and define technological / software requirements for analyzing and solving a telecommunication problem;
- Ability to use standard and modern facilities and principles for ensuring security of communication systems;
- Ability to identify a problem, establish its essence, select adequate methods for the development of the problem solving thesis and its solutions, as well as the ability to justify the approach to solving the problem;
- Ability to make a reasonable decision in practical activity;
- Ability to establish a substantiated conclusion;
- Ability to identify and define the technological / software requirements for analyzing and solving the communication problem;
- Ability to prepare detailed written report on the ideas, ways of solving existing problems in Georgian and English languages and transfer information verbally to specialists and non-specialists;
- Ability to adapt and act in a foreign environment, as well as deal and engage in dialogue with people;
- Ability to effectively involve, participate and perform functions in a group project;
- Ability to study and continuously enhance knowledge, as well as the ability of critical thinking and self-criticism;
- Ability to evaluate consistently and in flexible manner the own learning process, to identify further learning needs;

- Ability to use the latest approaches, modern skills and communication technologies while performing works;
- Ability to understand the necessity of constantly enhancing professional knowledge and getting new knowledge and to gain such knowledge ;
- Ability to manage time;
- Ability to participate in process of formation of values and to strive to their mainstreaming;
- Ability to evaluate and analyze the impact of communication and computer technologies on individuals, organizations and community as a whole, including the ethical, legal, security and global policies related to technologies;
- Ability to fully understand professional, ethical and social responsibilities;

Fields of employment

The obtained degree will enable a graduate to work in different types of organizations, whether a governmental structure, a private business company, a non-governmental organization or other.

After completing the program a graduate will be able to be employed in the electronics manufacturing field, Internet provider and communication companies, an organization, which used modern electronic modules based management systems, as well as in a company, which activities cover telecommunications, electric engineering and computer technologies

Study Continuation Opportunities

The program graduates can continue their studies at any of Master's Degree programs in Georgia or abroad, in accordance with the regulation required by the law.

Student Evaluation and Grading System

The aim of the evaluation is to assess to what extent the learning outcomes prescribed by the syllabus are reached. The student's evaluation consists of multiple components and evaluates the course goals and learning outcomes by applying measurable criteria and appropriate rubrics. The student's evaluation is based on four major principles: objectivity, trustworthiness, validity and transparency.

The students are evaluated according to two sets of evaluation: summative and formative. The aim of the summative assessment is to accurately evaluate the student's performance. It monitors quality of learning and the level of the student's achievement in relation to the goals set by the course. The formative assessment is oriented on the student's development. It gives students appropriate feedback on their achievements.

The evaluation system includes 100 points and envisages:

a) Five types of positive grades:

a.a) (A) Excellent – 91-100 points of assessment;

a.b) (B) Very good – 81-90 points of maximal assessment;

a.c) (C) Good – 71-80 points of maximal assessment;

a.d) (D) Satisfactory – 61-70 points of maximal assessment;

a.e) (E) Sufficient – 51-60 points of maximal assessment;

b) two negative grades:

b.a) (FX) Did not pass – 41-50 points of maximal assessment, which means the student needs to work harder and is allowed to retake the exam one more time after working independently;

b.b) (F) Fail – 40 points or less of maximal assessment, which means the student's work is insufficient and he/she has to retake the course.

Students are awarded credits on the basis of the final evaluation comprising the scores of the interim and final exam assessments.

The attainment of student's learning outcomes considers the interim and final evaluations, for which relative proportions out of the total score (100 points) and a minimum competence level are allocated. Namely, out of 100 points, the interim results are allocated 70 points, while the final exam results are 30 points. In both of the components (interim and final) the minimum competency barrier to be reached is 51%. The interim evaluation includes assessment components, the total of which is 70 points. For each assessment component, the evaluation is based on the pre-determined learning goals, task-oriented clear criteria and the learning rubrics drawn on their basis. In the interim results Freshmen student (except B2 level English groups) has to accumulate at least 51% of the 70 points to be allowed to take the final exam. The student's final examination is passed, if he/she gets at least 51% of the total 30 points,

For All the rest the student has to accumulate at least 59% of the 70 points to be allowed to take the final exam. The student's final examination is passed, if he/she gets at least 60% of the total 30 points.

In case the student fails to overcome the minimum competency barrier of the final exam, he/she is allowed to retake the final examination. The student shall retake the final examination within the period prescribed by the academic calendar no later than 5 days after announcement of the results of the final exam.

In case the student totally scores 0-50 points or fails to overcome the minimum competency barrier set for any form of the evaluation (Interim/Final exam), he/she shall be given a grade of "F-0".

Teaching and Learning Methods

Different teaching methods are employed during the teaching process depending on the topics covered. Those include:

Discussions/debates – one of the most common methods of interactive teaching. Quality of Students' involvement is higher; classes are more dynamic and students are more active. Any discussion can turn into a debate. The method allows professors to give questions and get answers and enables students to develop skills of discussion and debates and prepares them for justifying their opinions and points.

Team (Collaborative) work - the method implies dividing students into teams and assigning different tasks to them. Each team member works on the task individually and shares his/her ideas with the rest. Depending on the type of task, team members can change tasks and roles. The strategy ensures students' maximum involvement in the learning process.

Problem Based Learning (PBL) – a problem is given and analyzed in order to acquire knowledge.

Cooperative Learning – where the whole class is responsible not only for his/her own learning and understanding of the subject matter but also for aiding and assisting others in better understanding it. Each student works on a problem until he/she fully understands everything.

Heuristic method – is largely incremental. Students are to discover facts on their own and make links between them.

Case Studies – Professors and students discuss a particular case and fully comprehend an issue at hand. In Medicine it can be discussion of the medical record of a particular patient, in Political Science it can be analysis of a conflict between any two countries (e.g., Armenia-Azerbaijan), etc.

Brain storming – the method facilitates to generating as many ideas about a particular topic as possible. The method encourages creativity; it is particularly efficient with a large group of students and consists of a few stages:

- Creative approach to a problem/issue
- Listing the ideas generated, without any criticism, on the board.
- Identifying the ideas most closely linked with the problem/issue;
- Identifying criteria for finding which idea is more relevant to the issue/problem at hand;
- Evaluating selected ideas according to pre-selected criteria;
- Selecting the best idea – the one having the best evaluation or meeting most of the criteria;

Role play – students are assigned different roles, which allows them to look at a problem from different perspectives. Like debates, role play also helps students develop skills needed for giving their opinion and justifying their judgments.

Method of Demonstration – displaying visual materials. In majority of cases it is better to give students both audio and visual material simultaneously; the material can be given by both - professors and students; the method implies giving visual information on the whiteboard or carrying out a complex laboratory experiment.

Induction, Deduction, Analysis, Synthesis.

A deductive approach means that the teacher gives students a new concept, explains it and then has the students practice using the concept.

In contrast with the deductive method, inductive instruction makes use of student "noticing". Instead of explaining a given concept and following this explanation with examples, the teacher presents students with many examples showing how the concept is used. The intent is for students to "notice", by way of the examples, how the concept works and fits together.

With the method of analysis a problem is disintegrated into components. This method facilitates to comprehensive analysis of each of the constituent elements of a more complex problem.

Method of synthesis is opposite of the process of analysis. One whole is made by grouping its constituent elements, which allows students to look at a problem as one whole.

Explanatory method – discussing a particular issue, i.e., professor provides examples and discusses all sides and details.

Action-oriented teaching – requires active participation of both professor and students where major emphasis is put on practical interpretation of theoretical knowledge.

E-learning - The method combines three ways of instruction

Teaching methods complement each other during the teaching process. Course syllabus provides detailed information about teaching methods used.

Human Resourses

The Program is implemented by the Academic and Invited Personnel: 14 Professors, 3 Associate Professors, one Assistant-Professor and 22 Invited Lecturers, who, according to their quialification are ready to help students in developing the competencies, difined by the program.

Partnership

Caucasus University's and Caucasus School of Technology's Partner organizations: foreign and Georgian higher educational institutions, as well as governmental and non-governmental organizations are also involved into the program implementation, within the framework of a Memorandum of Cooperation.

Partner Governmental and non-governmental organizations:

HR Recruitment Agency; Aliance Group Holding; Omedia; GITA; EY; Imobiliare; Silknet; UGT; Orient Logic; MyGPS; ZETEN; Scientific Research Institute Optica; Guramex; Georgian National Communications Commission; Ministry of Defence of Georgia; Ministry of Justice of Georgia; Ministry of Finance of Goergia; National Bank of Georgia; Tbilisi City Hall

Foreign higher educational institutions:

Tallinn University of Technology; Riga Technical University; Upper Austria University of Applied Sciences (Hagenberg); University of Southern Denmark; Fairleigh Dickinson University; Kaunas University Of Technology; Ming Chuan University of Taiwan; Universidad Autonoma de Gvadalajara, Mexico; IESB, Brasilia Higher Education Institute, Brazil.

Material and Technical Resourses

For reaching the outcomes envisaged by the Program, the University infrastructure and material and technical resources urestrictedly accessible for the students and the academic personnel, namely: Auditoria equiped with appropariate equipment and conference hall; Computer classes/labs, computers connected to the internet and intranet and specially tailored software guaranteeing smooth operation of learning/teaching process;

The material resources of the Universty ensure the goals set by the Program are reached and the planned, outcomes are realized:

Premises: the Program is conducted on the University premises where sanitary-hygiene and safety rules are adhered to. The University building fully complies with technical requirements establied for Universities; the University has audtoria designed for lectures and practical classes fully equipped with apropriate equipment and devices (projectors, desks and chairs, whiteboards, etc.).

Library: - The University library has printed and electronic fund necessary for implementation of the Program accessible for the students and academic personnel. The library has an electronic catalogue. The library has a Reading Room equipped with appropriate property (chairs, desks, computers). The Reading Room allows students to use internet and international electronic resources.

Information-Communication Technologies – laboratories and computer equipment appropriate to Program meeting modern requirements, connected to the internet and accessible for the students, academic, invited and administrative personnel are available at the University. The computers are equipped with appropriate instruments/applications. The auditoria and computer classes are equiped with local net and internet.

The University operates an electronic system for organizing the educational process, which fosters academic process and makes monitoring of the students' academic performance possible at all times. The University makes the catalogue of the educational programs and the information on implementation of the educational programs and conducting the educational process public and acessible at all times.

The mentioned resources are accessible for the University students, academic, invited and administrative personnel. All the interested persons are informed on the possibility of using these resources and are familiar with the rules and procedures of their utilization.

Financial Resourses

The budjet for financial Support of the Program is developed and included in the whole budget of the University.

Program Curriculum

№	Course Code	Prerequisite	Course	Year								ECTS
				I		II		III		IV		
				ECTS								
				I Semester	II Semester	I Semester	II Semester	I Semester	II Semester	I Semester	II Semester	
Required General Educational Courses												
1.	CIS 1140		Computer Skills and Office Applications	x								5
2.	WRT 1140		Academic Writing	x								5
3.	ENGL 0007		B2.0 General English Language	x								5
4.	ENGL 0008	ENGL 0007	B2 General English Language		x							5
Elective General Education Courses												
5.	HIST 0001		Introduction to World History & Civilization	x								5
6.	POLS 0002		Political Science			x						5
7.	HIST 0003		History of Georgia				x					5
8.	SOCI 0004		Sociology					x				5
9.	PHIL 0005		Philosophy						x			5
10.	PSYC 0006		Psychology							x		5
11.	ENGL 0009	ENGL 0008	C1.0 General English Language	x								5
12.	ENGL 0010	ENGL 0009	C1 General English Language		x							5
13.	ENGL 0005		B1.0 General English Language [1]	x		x						5
14.	ENGL 0006	ENGL 0005	B1 General English Language [1]				x	x				5
15.	MATH 0001		PreCalculus [2]	x								5
Basic Specialization Courses												
16.	MATH 0003		Calculus I	x								5
17.	MATH 0004	MATH 0003	Calculus II		x							5
18.	MATH 1240		Discrete Mathematics		x							5
19.	PHYS 2140	MATH 0003	Principles of Physics		x							5
20.	MATH 2140	MATH 0004	Scinetific Computing			x						
21.	PHYS 2141	PHYS 2140	Physics II			x						5
Specialization Courses												

№	Course Code	Prerequisite	Course	Year								ECTS
				I		II		III		IV		
				ECTS								
				I Semester	II Semester	I Semester	II Semester	I Semester	II Semester	I Semester	II Semester	
22.	CTC 1243	CTC 1141	Principles of Computer Programming I	x								5
23.	CTC 1243	CTC 1141	Principles of Computer Programming II		x							5
24.	MATL 1240		Data Modelling I		x							5
25.	CTC 1242		Computer Architecture			x						5
26.	ELC 2140		Electronic components & Sensors			x						5
27.	ELC 2240	PHYS 2140	Electronics			x						5
28.	CTC 2143		Operating Systems				x					5
29.	CTC 2144		Principles of Networking				x					5
30.	CTC 2245	CTC 1243	Algorithms & Data Structures I				x					5
31.	ELC 2241	PHYS 2140	Electrical circuits I				x					5
32.	CTC 2243		Introduction to Database Systems				x					5
33.	ELC 3141	ELC 2241	Electrical circuits II					x				6
34.	ELC 3142	ELC 2241	Microelectronic circuits I					x				6
35.	ELC 3143	MATL 1240	Data Modelling II					x				6
36.	ELC 3144	ELC 2241	Applied Electrodynamics					x				6
37.	ELC 4243	ELC 2241	Signalling processors					x				6
38.	TELC 3240		Theory of Telecommunications						x			6
39.	ELC 3241	ELC 3142	Microelectronic circuits II						x			6
40.	ELC 3242	ELC 3141	Measurements in Information Systems						x			6
41.	ELC 4141	ELC 3241	Microprocessors							x		6
42.	CTC 3243	CTC 1243	Java Programming Language I							x		6
43.	CTC 3246		Network Security							x		6
44.	CTC 4142	CTC 3243	Java Programming Language II								x	6
45.	ELC 4241	ELC 2140	Digital Sensors & its communication protocols								x	6
46.	PR 4240		Bachelol's Thesis								x	6
Elective Courses												
47.	ELC 3244	ELC 2140	Radiotechnical circuits						x			6

№	Course Code	Prerequisite	Course	Year								ECTS
				I		II		III		IV		
				ECTS								
				I Semester	II Semester	I Semester	II Semester	I Semester	II Semester	I Semester	II Semester	
48.	TELC 3245	TELC 3240	Digital telecommunication									6
49.	TELC 4142	TELC 3240	Radio and TV broadcasting									6
50.	ELC 4142		Wireless communication systems									6
51.	ELC 4143		Cable systems									6
52.	ELC 4242		Radiolocation and radionavigation									6
53.	ELC 4243	ELC 3144	Radiofrequency and short wave technology									6
54.	DMK 3140		Digital Marketing									6
55.	CTC 3145		System Administration I									6
56.	CTC 3142	CTC 1243	Object Oriented Programming									5
57.	NW 3141	CTC 2144	Management of Computer Networks I									6
58.	NW 3241	CTC 2144	Management of Computer Networks II									6
59.	CTC 3148	CTC 2144	Virtualization Technology									6
60.	CTC 3241	CTC 1243	User Interfaces									6
61.	CTC 3244	CTC 1243	.NET Technologies I									6
62.	CTC 3245	CTC 3145	System Administration II									6
63.	CTC 3248	CTC 2144	Wide Area Networking									6
64.	CTC 4143	CTC 3244	.NET Technologies II									6
65.	CTC 4145	CTC 2243	Database Administration									6
66.	CTC 4243	CTC 1243	Mobile Programming									6
67.	CTC 4247	CTC 1243	Python Programming Language									6
68.			Free Course [3]									6
ECTS			Per Semester	30	30	30	30	30	30	30	30	
			Per Year	60		60		60		60		
Courses Per Year				12		12		10		9		

Note:

[1] General English Language B1 Level is mandatory for those students who have lower competence, than the Level B2.

[2] "PreCalculus" is mandatory for those students who have low competence in Math.

[3] Student can take courses in terms of "Free Course" (18 ECTS) from other Bachelor's degree programs and/or form the Elective Specialization Courses in this program.

Distribution of Total Hours							
№	Course Name	ECTS Credits\ Hours	Lecture / Practical Work Hours	Seminar Hours	Midterm and Final Exam Hours	Presentation Hours	Out of class preparation Hours
1.	Computer Skills and Office Applications	5/125	19	5	4	2	95
2.	Academic Writing	5/125	21	3	4	2	95
3.	B1.0 General English Language	5/125	53	9	4	2	57
4.	B1 General English Language	5/125	53	9	4	2	57
5.	B2.0 General English Language	5/125	58	3	4	3	57
6.	B2 General English Language	5/125	57	3	5	3	57
7.	C1.0 General English Language	5/125	58	3	4	3	57
8.	C1 General English Language	5/125	58	3	4	3	57
9.	PreCalculus	5/125	18	6	4	2	95
10.	Introduction to World History & Civilization	5/125	14	10	4	2	95
11.	Political Science	5/125	17	7	4	2	95
12.	History of Georgia	5/125	19	5	4	2	95
13.	Sociology	5/125	20	4	4	2	95
14.	Philosophy	5/125	17	7	4	2	95
15.	Psychology	5/125	18	4	4	4	95
16.	Calculus I	5/125	18	6	4	2	95
17.	Calculus II	5/125	18	6	4	2	95
18.	Discrete Mathematics	5/125	22	4	4		95
19.	Scinetific Computing	5/125	24	6	4	2	89
20.	Principles of Physics	5/125	21	5	4		95
21.	Physics II	5/125	21	5	4		95
22.	Principles of Computer Programming I	5/125	28	4	4		89
23.	Principles of Computer Programming II	5/125	28	4	4		89
24.	Electronics	5/125	21	3	4	2	95
25.	Computer Architecture	5/125	20	4	4	2	95
26.	Operating Systems	5/125	19	5	4	2	95
27.	Object Oriented Programming	6/150	19	5	4	2	120
28.	Electrical circuits I	5/125	24	2	4		95
29.	Electrical circuits II	6/150	24	2	4		120
30.	Principles of Networking	5/125	19	5	4	2	95
31.	Introduction to Database Systems	5/125	21	3	4	2	95
32.	Electronic components & Sensors	5/125	24	2	4		95
33.	Data Modelling I	6/150	22	4	4		95
34.	Data Modelling II	6/150	22	4	4		120
35.	Microelectronic circuits I	6/150	24	2	4		120
36.	Microelectronic circuits II	6/150	24	2	4		120

№	Course Name	ECTS Credits\ Hours	Lecture / Practical Work Hours	Seminar Hours	Midterm and Final Exam Hours	Presentation Hours	Out of class preparation Hours
37.	Theory of Telecommunications	6/150	22	4	4		120
38.	Applied Electrodynamics	6/150	22	4	4		120
39.	Digital Sensors & its communication protocols	6/150	24	2	4		120
40.	Measurements in Information Systems	6/150	22	4	4		120
41.	Microprocessors	6/150	24	2	4		120
42.	Java Programming Language I	6/150	20	4	4	2	120
43.	Java Programming Language II	6/150	19	5	4	2	120
44.	Algorithms & Data Structures I	5/125	28	4	4		89
45.	Signalling processors	6/150	24	2	4		120
46.	Network Security	6/150	19	5	4	2	120
47.	Radio and TV broadcasting	6/150	22	4	4		120
48.	Radiotechnical circuits	6/150	22	4	4		120
49.	Digital telecommunication	6/150	22	4	4		120
50.	Wireless communication systems	6/150	22	4	4		120
51.	Radiolocation and radionavigation	6/150	22	4	4		120
52.	Radiofrequency and short wave technology	6/150	22	4	4		120
53.	Cable systems	6/150	22	4	4		120
54.	System Administration I	6/150	21	5	4		120
55.	Management of Computer Networks I	6/150	20	4	4	2	120
56.	Management of Computer Networks II	6/150	20	4	4	2	120
57.	Virtualization Technology	6/150	21	5	4		120
58.	User Interfaces	6/150	22	4	4		120
59.	System Administration II	6/150	20	4	4	2	120
60.	Wide Area Networking	6/150	19	5	4	2	120
61.	Database Administration	6/150	21	5	4		120
62.	Mobile Programming	6/150	21	5	4		120
63.	Python Programming Language	6/150	23	3	4		120
64.	Digital Marketing	6/150	19	5	4	2	120
65.	.NET Technologies I	6/150	24	2	4		120
66.	.NET Technologies II	6/150	24	2	4		120
67.	Bachelol's Thesis	6/150	20				130

Academic and Invited Personnel

#	Personnel Name	Status	Course
1.	Abesalom Iashvili	Invited Lecturer	Electronics
2.	Avtandil Kavrelishvili	Professor	Database Administration
3.	Akaki Khvedelidze	Invited Lecturer	System Administration I
4.	Archil Shengelia	Invited Lecturer	Virtualization Technology
5.	Aza Chanturia	Professor	Computer Skills and Office Applications
6.	Giorgi Datukishvili	Professor	Computer Architecture
7.	Giorgi Karanadze	Invited Lecturer	Digital Marketing
8.	Giorgi Lobjanidze	Professor	Pre Calculus
9.	Guram Lezhava	Professor	Applied Electrodynamics
10.	Guranda Chelidze	Professor	Political Science
11.	Davit Akobia	Invited Lecturer	Electronic components & Sensors
			Digital Sensors & its communication protocols
12.	Davit Beriashvili	Invited Lecturer	Radio and TV broadcasting
13.	Demur Shavadze	Invited Lecturer	Microelectronic circuits I
			Microelectronic circuits II
			Microprocessors
			Signalling processors
			Electrical circuits I
14.	Ekaterine Kvachantiradze	Professor	Introduction to World History & Civilization
15.	Ekaterine Chogovadze	Invited Lecturer	.NET Technologies I
			.NET Technologies II
16.	Vano Otkhozoria	Associate Professor	Management of Computer Networks I
			Management of Computer Networks II
			Wide Area Networking
			Principles of Networking
17.	Vano Chiaureli	Invited Lecturer	Philosophy
18.	Zaza Gamezardashvili	Assistant-Professor	Principles of Computer Programming I
			Principles of Computer Programming II
			Algorithms & Data Structures I
19.	Zurab Bragvadze	Professor	History of Georgia
20.	Tamar Sharashenidze-Soyucok	Invited Lecturer	B2.0 General English Language
			B2 General English Language
21.	Tamta Mshvidobadze	Invited Lecturer	C1.0 General English Language
			C1 General English Language
22.	Teimuraz Khutsishvili	Professor	Calculus II
23.	Temur Jangveladze	Invited Lecturer	Scinetific Computing
24.	Ivane Zurabishvili	Invited Lecturer	Electrical circuits II
25.	Ioseb Dmanashvili	Professor	Mobile Programming

#	Personnel Name	Status	Course
26.	Mariam Sordia	Invited Lecturer	Data Modelling I
			Data Modelling II
			Cable systems
27.	Mariam Kobuladze	Invited Lecturer	User Interfaces
28.	Maksim Iavich	Professor	Python Programming Language
29.	Medea Gelenava	Associate Professor	Introduction to Database Systems
30.	Merab Tavartkiladze	Professor	System Administration II
31.	Mzia Tediashvili	Professor	Psychology
32.	Nino Beradze	Invited Lecturer	Academic Writing
33.	Nodar Ugrelidze	Invited Lecturer	Theory of Telecommunications
			Measurements in Information Systems
			Radiotechnical circuits
			Digital telecommunication
			Wireless communication systems
			Radiolocation and radionavigation
			Radiofrequency and short wave technology
34.	Nugzar Botchoidze	Invited Lecturer	Principles of Physics
			Physics II
35.	Nugzar Skhirtladze	Professor	Calculus I
36.	Otar Magaldadze	Invited Lecturer	Java Programming Language I
			Java Programming Language II
			Object Oriented Programming
37.	Salome Gogberashvili	Invited Lecturer	B1.0 General English Language
			B1 General English Language
38.	Soso Tsotniashvili	Invited Lecturer	Discrete Mathematics
39.	Ketevan Mukhiguli	Associate Professor	Sociology
40.	Shalva Svanishvili	Invited Lecturer	Operating Systems
			Network Security