

**CAUCASUS UNIVERSITY**



**Graduate Program in  
Information Technology Management**

**Caucasus University**  
**Caucasus School of Technology**

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|---|--|--------|
| <b>Program Name</b>   | Information Technology Management  |        |
| <b>Degree level</b>   | Master's   |        |
| <b>Type of the educational program</b>  | Academic   |        |
| <b>Instruction Language</b>   | Georgian   |        |
| <b>Expected Qualification</b>   | Master of Engineering in Information Technologies  | 040101 |
| <b>Date of Program Approval</b>   | 12 February 2014   |        |
| <b>Academic head of the Program</b>   | Maksim Iavich PhD. Professor at Caucasus University  |        |
| <b>Program Volume in Credit Hours</b>   |  |        |
| <p>The program consists of 120 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.</p> <p>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:</p> <ul style="list-style-type: none"> <li>• 48 ECTS of Required Courses</li> <li>• 30 ECTS of Research Component (Master's Thesis)</li> <li>• 42 ECTS of Elective Courses (up to 114 ECTS offered:             <ul style="list-style-type: none"> <li>○ 42 ECTS - Theoretical courses;</li> <li>○ 60 ECTS – Practical Courses;</li> <li>○ 12 ECTS - Practical Work;</li> <li>○ 12 ECTS – Free Courses)</li> </ul> </li> </ul> <p>Some of the Courses are taught in English.</p> |  |        |
| <b>Admission Requirements</b>   | <ul style="list-style-type: none"> <li>• Any person having thr Bachelor's degree in technical field (IT, Engineering, Bussiness Administration, Natural Sciences) is entitled to enrol on the Graduate Program in Information Technology Management.</li> <li>• The precondition for the admission to the program is to pass the General Masters 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.</li> <li>• Admission Interview at the Caucasus School of Technology</li> <li>• Passing the graduate entrance test in the English Language (Level B2), holders of sertificate in English language Level B2 are free from testig. Graduates of English Language degree programs are free from presenting the sertificate or testing.</li> </ul> |        |

## Program Description

### General Information

Today at the time of global competition, organizations are in need of people with complex knowledge and skills. Particularly high need is for those people who have combined knowledge of business and technology: with deep expertise in technology and good knowledge of business strategy.

The Graduate Program in Information Technology Management was developed to prepare professionals with the combination of these highly needed skills.

During the program development it was taken into the consideration the experience of foreign universities, having the degree programs in the similar filed; The recommendations of leading specialists and professors of the partner universities (Tallinn University of Technology; Upper Austria University of Applied Sciences (Hagenberg); Kaunas University Of Technology), obtained through the exchange visits of school administration and professors, invoved in the program development, in the partner universities and also from the consultation meetings with the representatives of those universities carried out at the Caucasus University. The feature of the program is the in-depth examination of a number of issues that have been selected in light of current and growing demands on information technology managers both in the Georgian labor market and internationally as well.

The program curriculum has a technical focus and gives good understanding of business operations and strategy. Students will learn how IT must be aligned with the strategy of the organization, and how to make appropriate choices about architecture in relationship to overall organization goals.

The teaching process of the program is based on modern methodologies of practice-oriented teaching taking into account the elements of scientific research. It focuses on in-depth learning of the disciplines enriched with the latest scientific or practical information management technologies. Compatible with modern international standards, the program enables the student to acquire deep theoretical knowledge in the field and to master good practical skills. The thoughtful proportion of the theoretical and practical components of the program provides the basis for a graduate to pursue a career as a prospective IT Management specialist, both in Georgia and abroad.

### Program Objectives

The objectives of the program in Information Technology Management are to:

- Give students an opportunity to develop research skills in information technology management, deep knowledge of information technology as well as business management methodologies and thereby ensure their employment in leading positions according to their qualifications;
- Prerare up-to-date specialist in IT management with deep knowledge of information technologies and good analysis of business environment and strategy, competence in innovative methods of management and analytical problem solving skills.

### Learning Outcomes

Upon completion of the Master's degree program in Information Technology Management, the graduate will acquire the following competencies:

- A thorough knowledge of the latest theories in information systems, management methodologies and international standards, ability to fully understand and share the role of information technologies;
- Ability to effectively plan the information technology structure in the organization, develop information technology service delivery strategies, capacity to develop and manage service delivery and service processes;
- Ability to use methods to assess the strengths and weaknesses of an organizational environment, identify strategic risks, and use assessment tools. Ability to operate independently while planning and managing in a risky and dynamically changing environments;
- Ability to adapt and apply modern business technologies in the organization, evaluate complex problems of information systems, analyze results and solve them in an innovative way;
- A thorough knowledge of the specific ethical problems inherent in the information technology field, the ability to understand information security, its crime and ethical principles and to solve ethical dilemmas;
- Ability to properly conduct scientific theoretical and practical research in the field of information technology and apply modern methodology in scientific research.

### **Building a Career**

The program gives students the chance to advance to IT Leadership positions through gaining strong set of technical and managerial skills which are necessary to succeed in the IT field today.

Program graduates will have an opportunity to work in a variety of environments such as academia, research, industry, media, government, private and business organizations. Examples of job titles of program graduates may include: Information Systems consulting officer, Chief Information Officer, Chief Technical Officer, Project Manager, Network Manager/Analyst, Business Analyst, Database Administrator, IT Infrastructure Manager etc.

On the Georgian labor market employers are the university's partner organizations, as well as other big or small business companies, banking sector, international companies, educational institutions, telecommunication organizations etc.

### **Study Continuation Opportunities**

The program graduates can continue their studies at any of Doctoral 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 interim evaluations the minimum competency barrier to be reached is 59%. 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 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 exam 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 Resources

The Program is implemented by the Academic and Invited Personnel: Six Professors, One Associate Professor, One Assistant-Professor, One Assistant and Twelve Invited Lecturers, who, according to their qualification are ready to help students in developing the competencies, defined 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; Immobiliare; 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 Georgia; 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 Resources

For reaching the outcomes envisaged by the Program, the University infrastructure and material and technical resources unrestrictedly accessible for the students and the academic personnel, namely: Auditoria equipped with appropriate 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 University 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 established for Universities; the University has auditoria designed for lectures and practical classes fully equipped with appropriate 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 equipped 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 accessible 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.

## Program Curriculum

| №                       | Course Code | Prerequisite | Course Name                         | Year       |             |            |             | ECTS |
|-------------------------|-------------|--------------|-------------------------------------|------------|-------------|------------|-------------|------|
|                         |             |              |                                     | I          |             | II         |             |      |
|                         |             |              |                                     | ECTS       |             |            |             |      |
|                         |             |              |                                     | I Semester | II Semester | I Semester | II Semester |      |
| <b>Required Courses</b> |             |              |                                     |            |             |            |             |      |
| 1.                      | ITSM 5140   |              | IT Service Management               | x          |             |            |             | 6    |
| 2.                      | ISM 5141    |              | Information Systems                 | x          |             |            |             | 6    |
| 3.                      | ISM 5145    |              | Database and Data Center Management | x          |             |            |             | 6    |
| 4.                      | MNG 5140    |              | Strategic Management                | x          |             |            |             | 6    |
| 5.                      | ISM 5241    |              | Operating Systems in Corporation    |            | x           |            |             | 6    |
| 6.                      | ISM 5244    |              | ERP Systems                         |            | x           |            |             | 6    |
| 7.                      | ISM 5343    | ISM 5141     | Information Systems Security        |            |             | x          |             | 6    |
| 8.                      | WRT 5340    |              | Academic Writing & Research Methods |            |             | x          |             | 6    |
| 9.                      | MST 5440    | WRT 5340     | Master's Thesis                     |            |             |            | x           | 30   |
| <b>Electives *</b>      |             |              |                                     |            |             |            |             |      |
| 10.                     | ISM 5143    |              | Electronic Governance               | x          |             |            |             | 6    |
| 11.                     | ISM 5144    |              | Enterprise Architecture             | x          |             |            |             | 6    |
| 12.                     | ISM 5146    |              | Software Engineering                | x          |             |            |             | 6    |
| 13.                     | BUSA 5240   |              | Accounting and Finances             | x          |             |            |             | 6    |
| 14.                     | MK 5240     |              | Strategic Marketing                 | x          |             |            |             | 6    |
| 15.                     | ISM 5245    | ISM 5141     | Information Systems Management      |            | x           |            |             | 6    |
| 16.                     | ISM 5246    |              | Cyber Security for Managers         |            | x           |            |             | 6    |

| №    | Course Code | Prerequisite | Course Name                        | Year         |             |            |             | ECTS |
|------|-------------|--------------|------------------------------------|--------------|-------------|------------|-------------|------|
|      |             |              |                                    | I            |             | II         |             |      |
|      |             |              |                                    | ECTS         |             |            |             |      |
|      |             |              |                                    | I Semester   | II Semester | I Semester | II Semester |      |
| 17.  | ISM 5341    | ISM 5241     | Data Communications and Networking |              | x           |            |             | 6    |
| 18.  | ISM 5342    |              | Cloud Technologies                 |              | x           |            |             | 6    |
| 19.  | ISM 5344    | BUSA 5240    | Project Management                 |              | x           |            |             | 6    |
| 20.  | ISM 5345    |              | Modern Cryptography                |              | x           |            |             | 6    |
| 21.  | STAT 5340   |              | Statistics for managers            |              | x           |            |             | 6    |
| 22.  | MNG 5340    | MNG 5140     | Decision Making                    |              | x           |            |             | 6    |
| 23.  | ISM 5441    | STAT 5340    | Data Warehousing                   |              |             | x          |             | 6    |
| 24.  | ISM 5442    |              | Internet Technologies              |              |             | x          |             | 6    |
| 25.  | MNG 5441    | MNG 5140     | Innovation & Change Management     |              |             | x          |             | 6    |
| 26.  | MNG 5442    |              | Human Resource Management          |              |             | x          |             | 6    |
| 27.  | PRW 5440    |              | Practical Work                     |              |             | x          |             | 12   |
| 28.  |             |              | Free Course                        |              |             |            | x           |      |
| ECTS |             |              |                                    | Per Semester | 30          | 30         | 30          | 30   |
|      |             |              |                                    | Per Year     | 60          |            | 60          |      |



### Academic and Invited Personnel

| #   | Personnel Name         | Status              | Course                              |
|-----|------------------------|---------------------|-------------------------------------|
| 1.  | Avtandil Kavrelishvili | Professor           | Information Systems                 |
|     |                        |                     | Database and Data Center Management |
|     |                        |                     | Information Systems Management      |
| 2.  | Davit Kapanadze        | Professor           | Statistics for managers             |
| 3.  | Akaki Khvedelidze      | Invited Lecturer    | Data Communications and Networking  |
| 4.  | Andria Gotsiridze      | Invited Lecturer    | Cyber Security for Managers         |
| 5.  | Andro Dgebuadze        | Invited Lecturer    | ERP Systems                         |
|     |                        |                     | Enterprise Architecture             |
| 6.  | Givi Kupatadze         | Invited Lecturer    | Decision Making                     |
| 7.  | Giorgi Tsimintia       | Invited Lecturer    | Project Management                  |
| 8.  | Giorgi Alkhazishvili   | Invited Lecturer    | Software Engineering                |
| 9.  | Giorgi Datukishvili    | Professor           | Cloud Technologies                  |
| 10. | Rusudan Chachanidze    | Invited Lecturer    | Accounting and Finances             |
| 11. | Ioseb Dzamanashvili    | Professor           | Internet Technologies               |
| 12. | Lili Bibilashvili      | Invited Lecturer    | Human Resource Management           |
| 13. | Madona Giorgadze       | Invited Lecturer    | Academic Writing & Research Methods |
| 14. | Maksim Iavich          | Professor           | Modern Cryptography                 |
| 15. | Giorgi Iashvili        | Assitant            | Information Systems Security        |
| 16. | Medea Gelenava         | AssociateProfessor  | Data Warehousing                    |
| 17. | Merab Tavartkiladze    | Professor           | Operating Systems in Corporation    |
| 18. | Natalia Mumlauri       | Invited Lecturer    | Strategic Marketing                 |
| 19. | Nino andriadze         | Invited Lecturer    | Innovation & Change Management      |
| 20. | Paata Sirbiladze       | Assistant-Professor | Electronic Governance               |
|     |                        |                     | Strategic Management                |
| 21. | Sergi Bejhashvili      | Invited Lecturer    | IT Service Management               |