CAUCASUS UNIVERSITY

Graduate Program in

INFORMATION TECHNOLOGY MANAGEMENT

Caucasus University

Caucasus School of Technology

Program Name		
Information Technology Management		
Program Name in Georgian		
ინფორმაციული ტექნოლოგიების მენეჯმენტი		
Degree level		
Master's		
Type of the educational program		
Academic		
Language of Instruction		
English		
Expected Qualification		
In English:	Master of Information Technology Management	0619
In Georgian:	ინფორმაციული ტექნოლოგიების მენეჯმენტის მაგისტრი	0619
Date of Program Approval		
3 December 2020		
Academic head of the Program		
Prof. Maksim Iavich, PhD.		
Program Volume in Credit Hours		

In order to obtain the qualification determined by the program, the student must acquire 120 ECTS credits. The standard duration of teaching a master's program is two years, and the permissible duration is five years. 1 ECTS equals to 25 hours, which includes class hours and time spent on independent work (midterm and final examinations, as well as homework assignments).

The program envisages learning courses of a narrow sphere and of free components:

Learning courses of narrow sphere (102 ECTS credits):

- Mandatory learning courses - 72 ECTS credits
  (Including Master Thesis - 30 ECTS credits)
- Optional learning courses - 30 ECTS credits

Learning courses of free component (18 ECTS credits):

- Mandatory learning course of university - 6 ECTS credits;
- Free credits - 12 ECTS credits.

Program Description

Admission Requirements

The persons applying for the Information Technology Management master's program need:

- To have Bachelor's degree in relevant or related field (engineering, business administration, natural sciences).
- To pass the General Masters Examination held by the Legal Entity of Public Law - The National Assessment and Examinations Center.
  - Enrollment in the program without passing the general master's exam is carried out in accordance with the rules established by law.
  - Mobility to the program is allowed in accordance with procedures set by the relevant law.
- Successfully pass the entrance exam (includes components of English comprehension and writing according to B2 level and general logical and quantitative reasoning questions; A person may be exempted from this condition if there is a language proficiency document (IELTS-6.0, TOEFL-78, other relevant B2 level international certificate or other circumstances set by university regulation))
- Successfully pass the oral exam with the Caucasus School of Technology's Master's Admission Commission. The topics of the exams and evaluation criteria will be posted on the university's website.

General Information

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 upportunity 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:

1. Describes and explains the latest theories of information systems, the role of information technologies, management methodologies and international standards, discusses them.
2. Forms and plans the structure of information technologies in the organization, IT service delivery strategy, service delivery / service processes;
3. Uses methods for assessing the strengths and weaknesses of the organization's environment, tools for identifying and assessing strategic risks, and skills for independent work planning, leadership, risk-taking and dynamically changing environment;
4. Analyzes and uses modern business technologies tailored to the organization, skills in evaluating complex problems of information systems and solving them in an innovative way;
5. Defines and is aware of the specific ethical issues inherent in the field of information technology, the principles of information security, its crime and ethics;
6. Conveniently conducts scientific theoretical and practical research in the field of information technology with modern methodology.

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.

Program Curriculum

№	Course Code	Course Prerequisite	Course Name	Year				ECTS
				I		II		
				Semester				
				I	II	III	IV	
Learning courses of narrow sphere								
Mandatory learning courses - 42 ECTS								
1.	ITSM 5140E		IT Service Management	×				6
2.	ISM 5141E		Information Systems	×				6
3.	ISM 5145E		Database and Data Warehouse Management	×				6
4.	MNG 5140E		Strategic Management	×				6
5.	ISM 5241E		Operating Systems in Corporation		×			6
6.	ISM 5244E		ERP Systems		×			6
7.	ISM 5343E	ISM 5141E	Information Systems Security			×		6
8.	MST 5441E	WRT 5340E	Master's Thesis				×	30
Optional learning courses - 30 ECTS								
9.	ISM 5143E		Electronic Governance	×				6
10.	BUSA 5240E		Accounting and Finances	×				6
11.	MK 5240E		Strategic Marketing	×				6
12.	DSC 5141E		Foundations of Data Science	×				6
13.	DEN 5240E		Data Engineering		×			6
14.	ISM 5245E	ISM 5141E	Information Systems Management		×			6
15.	ISM 5246E		Cyber Security for Managers		×			6
16.	ISM 5341E		Data Communications and Networking		×			6
17.	ISM 5342E		Cloud Technologies		×			6
18.	ISM 5344E		Project Management		×			6
19.	ISM 5345E		Modern Cryptography		×			6
20.	STAT 5340E		Statistics for managers			×		6
21.	MNG 5340E	MNG 5140E	Decision Making Theory			×		6
22.	MNG 5441E	MNG 5140E	Innovation & Change Management			×		6
23.	MNG 5442E		Human Resource Management			×		6
24.	PRW 5440E		Professional Internship [1]			×		12
Learning courses of free component								
Mandatory learning course of university - 6 ECTS								
25.	WRT 5340E		Academic Writing & Research Methods			×		6
Free credits - 12 ECTS								
26.			Free Course[2]		×			
ECTS Credits			Per Semester	30	30	30	30	
			Per Year	60		60		

[1] Professional Internship is mandatory for students who are not employed by the specialization

[2] Student can take courses in terms of "Free Course" (max. 12 ECTS credits) from other Master's degree programs and/or form the Elective Courses within this program

IT Service Management

The course describes the importance of information technology infrastructure and information technology services in organizations, the process approach, the basic outline of infrastructure management, the terms and concepts used in IT infrastructure management.

Objective of course is to teach students about the established ITSM practice in the wider context of: Customer experience Value Streams Digital transformation New ways of working: Lean, Agile, DevOps

Upon completion of the course, the student:

- Evaluates information technology, service management;
- Uses information technology management methodology and terminology;
- Uses IT process approaches and modern and international approaches to IT service design and strategies;
- Evaluates the quality of information technology services;
- Develops IT service delivery / service strategy.
- Able to design and manage IT service delivery / service processes, manage information security.
- Develops services and service strategies and manages change;
- Develops strategies for service operation and improvement;
- Identifies ways to improve IT service delivery / service processes.

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Information Systems

The course reviews:

- The role of information systems in society, in modern organizations.
- Information technology and software part of information systems,
- The impact of information systems on business processes and decision making.
- Modern international standards and libraries.

The aim of the course is to become well acquainted with the role of information systems in the modern environment, to see career opportunities in the field of information system

After completing the course, the student:

- Understands the role of information systems in the organization;
- Uses in-depth knowledge of information systems concepts;
- Understands the importance of information systems in developing an organization strategy;
- Uses in-depth knowledge of information systems hardware and business concepts;
- Distinguishes between individual components of information systems;
- Uses international information systems standards and libraries;

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Database and Data Warehouse Management

The course allows students to deepen their knowledge in database and data warehouse management. The theoretical and practical knowledge gained during the course will be useful for both beginners and professionals in this field.

The aim of the course is to gain knowledge in the administration of relational databases and to master the effective methods of planning, creating and operating databases.
After studying the course, the student:

- Effectively plans databases;
- Uses knowledge of proper database management;
- Understands the peculiarities of database administration;
- Administers and manage databases;
- Installs and configure a database server;
- Uses the latest approaches, modern skills and technological means while performing the work;
- Effectively integrates IT-based solutions with the consumer environment.

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Strategic Management

This Course presents a broad overview of the basic concepts and fundamentals in Strategic management. Students will be exposed to a number of frameworks and models to better understand and analyze the macro-environment, the industry environment, and organizational resources. This course includes deepened study of Theoretical and methodological aspects of strategic management, moreover, contemporary issues of strategic management. Course contains study of strategy formulation, implementation and evaluation. Furthermore, factors influencing competitive advantage, value chain, detailed analysis of strategic management process.

The objective of the course is to give students deep knowledge of the principles and concepts by which a firm manages the formulation and implementation of its strategies. This course aims to teach students systematic economic and managerial thinking based on advanced approaches to business. Also this course aims to provide students with the knowledge of theoretical - methodological basis of Strategic Management; Strategy formation, implementation and realization of the study; Strategic decision.

Upon completion of the course, the student:

- Demonstrates a deep and systematic knowledge of the principles of strategic vision, mission and goal formation;
- Uses in-depth and systematic knowledge of outdoor and indoor scanning tools;
- Sees and understands ethical issues in strategy formation;
- Plans and implements organizational strategy and changes;
- Independently develops a business plan, allocates resources and plans the actions of all functional departments;
- Be able to use research results to make strategic decisions
- Evaluates and analyzes strategic alternatives for decision making;
- Prepares a written project and submits it using business terminology;
- Describes opinions on the advantages of the chosen method and creates and presents analytical and research papers;
- Identifies his / her professional interests, understands the peculiarities of the learning process, strategically plans the learning and self-development process;

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Operating Systems in Corporation

Operating System represents middle layer between programs and computer hardware. To better understand function of Operating System and its design, its mandatory to know computer hardware basics, organization and architecture. In this course will be discussed next topics:

- Different types of operating Systems;
- Purpose of Operating Systems;
- Its core components and working principles;
- Server Operating Systems;
- Difference between Client and Server Operating systems;
- Their purpose in corporate environment;
- Interacting with Operating System through Command Line and Graphical User Interface;
- Desktop environment customization;

This course is mainly oriented to Linux Operating System but also includes Windows Server Operating System too. It includes Operating System installation instructions and understanding its core functionalities with primary goal to deploy secure server systems in future;

Upon completion of the course the student:

- Understands the functionality of Linux and Windows Server operating systems;
- Uses knowledge of operating system utilities and file systems;
- Uses system / network administration and monitoring tools;
- Manages software packages on Linux using yum;
- Configures and administers the operating system;
- Configures individual and group user accounts;
- Evaluates and maintains the quality of work performed;

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ERP Systems

The course provides an overview of Enterprise Resource Planning software systems and their role within an organization. It explains why such systems are valuable to businesses. Understand what business processes is. What is business modeling and data models? The course introduce what is the steps of implementation ERP software. How to research vendors of ERP. The course will also provide an overview of discussion on various business cases in which ERP concepts can be applied, understand how Enterprise Resource Planning software is used to optimize business processes. Understand how fragmented information systems fail to support business decision and how integrated information systems can help a company prosper by providing business managers with accurate, consistent, and current data.

Upon successful completion of the subject the student:

- Effectively implements and develops ERP system;
- Understands the role of technology tools in managing the organization's work processes and increasing efficiency;
- Understands the importance of using ERP, SCM, CRM systems in the organization;
- Takes into account technological, operational and business challenges in implementing ERP system;
- Demonstrates in-depth knowledge of the various phases of ERP system implementation;

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Information Systems Security

The course contains the issues of information/cyber security, cryptography, risk identification/assessment, and other security techniques. The basic security objectives such as data confidentiality, integrity, availability, authentication, authorization, and access control are examined and also, cryptographic techniques to realize these objectives are introduced. The basic philosophy of secure development is also examined. In addition, the ideas behind the hacking, cracking and social engineering will be discussed in the context of ethics and their place in Information/Cyber Security.

The main goal of this course is to provide students with foundation knowledge of information/cyber security, its governance and particularly, to give them an understanding of the basic concepts of information security (confidentiality, integrity, and availability), main techniques of hacking, threats analysis, and risk assessment.

Upon completion of the course, the student:

- Usees data encryption methods;
- Understands which threat is currently real, what information / cyber security serves and its basic principles and methods to ensure secure creation.
- Understands how to oppose seizures and treatment methods alike, appreciates their importance and uses security mechanisms in modern technologies.
- Detects attack methods and types of malware (viruses, worms, backdoors, logic bombs, BotNet);
- Usees attack knowledge to access the system (DoS, DDoS);
- Takes into account security issues during software product development or IT infrastructure configuration;
- Defines and analyzes the importance of security;
- Analyzes and develops conclusions on methods of solving security problems;
- Compares different types and methods of hacking and draws relevant conclusions.

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Master's Thesis

A master's thesis is a completed work that should reflect the graduate's ability to conduct research or practical work. The master's thesis should reflect the student's level of knowledge, research, information processing, and job performance, independent and group work skills in accordance with the requirements set by the academic program.
During the public discussion of the submitted paper, the master student should present the work done by him / her and demonstrate the ability to participate in the discussion.
The master's thesis must be performed without spelling, stylistic and grammatical errors, according to the established form and rule.
The volume, format, style and other technical data of the master's thesis are determined by the master's thesis.

The aim of the research component of the master's educational program is to develop the student's ability to conduct research independently in the selected field, to present the achieved results and to present his / her reasoning in a public.

As a result of completing the master's thesis, the student:

- Investigates and analyzes information from various sources;
- Uses critical thinking and self-criticism skills;
- Accurately identifies and identifies problems and develops reasoned solutions;
- Uses modern research tools and methodologies to solve the problem;
- Plans and implements research and practical projects;
- Develops original and creative ideas;
- Creates practically valuable research paper using existing knowledge and research-oriented competencies;
- Communicates in a reasoned and understandable language;
- Adheres to legal and ethical norms;
- Considers the need to expand the knowledge gained;
- Uses time management skills

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Electronic Governance

Information and communication technologies (ICT) is a rapidly evolving and growing field that plays a special role in the world economy, society formation, administration and management. The purpose of e-government is to provide government-provided services to users (citizens, businesses, non-governmental and governmental sectors) in the form of the most convenient e-services, facilitates interaction of users of these services with government, reduce bureaucracy and costs, and facilitate citizen involvement in the decision-making process. To achieve these goals, strategic planning and result-oriented implementation are essential, using successful examples from around the world.

The course covers the history of e-government development in several successful countries around the world, describes strategic planning methodology and best practices, pays special attention to the use of monitoring and evaluation tools, normative database analysis and introduction of basic principles of information security, as well as open / transparent governance and e-democracy. The goal of the course is to give the student theoretical knowledge about the essence of e-government, key principles, different structures, stages and models. Introduce the audience to the best international practices of the creation and development of e-services, the history of e-government, the strategy for the creation of e-government, the relevant regulatory framework. Introduce modern monitoring and evaluation tools, provide knowledge on open, transparent governance and e-democracy.

The goal of the course is to give the student theoretical knowledge about the essence of e-government, key principles, different structures, stages and models. Introduce the audience to the best international practices of the creation and development of e-services, the history of e-government, the strategy for the creation of e-government, the relevant regulatory framework. Introduce modern monitoring and evaluation tools, provide knowledge on open, transparent governance and e-democracy.

The aim of the course is to develop the basic skills necessary for the student to participate in the development and analysis of an e-government strategy, including the ability to meet the basic requirements of information security, the ability to analyze the achievements, opportunities and challenges of e-government in different countries.

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Accounting and Finances

The course studies the basic essence of accounting and finance and the methods that are necessary for the managers for their work, so that they can get understand the necessary financial information, make analysis, draw the right conclusions and make the optimal decision.
The topics in the subject are presented from the user's point of view and include issues such as: transaction analysis; Forms of financial statements, information and analysis, Determining the cost of an order; Price, volume and profit analysis; Budgeting of operations, cash and capital, etc. It is essential for any manager to know financial accounting as one of the main languages of communication in a business environment;
It is essential for any manager to know financial accounting as one of the main languages of communication in a business environment;
The IT manager should have the ability to analyze and evaluate projects financially in order to select the best among the alternatives;
A large part of the tasks assigned to IT managers in companies are of a financial nature. Knowledge of finance will help the IT manager to better understand and solve these problems;
Financial institutions create a large employment market for IT managers. Financial education will help the manager to adapt quickly and work effectively in these types of companies.

Upon successful completion of the subject the student:

- Applies the basic principles of managerial accounting;
- Uses knowledge of cost classification and behavior, and time value of money;
- Uses project evaluation methods;
- Analyzes and evaluates projects to select the best among the alternatives;
- Analyzes the financial situation and makes appropriate decisions;
- Uses business / organization working principles, including asset management skills;

Back

Strategic Marketing

Marketing is the functional area that has to be performed in any type of organization. It is true that the intensity of marketing activities can vary from industry to industry and from country to country, but still they do exist at a minimum level. In order to understand all the underpinnings of this field we will discuss theories, problems and practices of marketing in the local and international context. At the same time, with the help of cases and exercises students will be able to understand how to use topics covered in the practice.

The major goal of this course is to give students knowledge and skills to be able to create marketing plan for local and/or international company.

After successfully complete this course student:

- Defines parts of the strategic marketing plan and steps in developing it by choosing appropriate analytical models and frameworks;
- Analyzes the attractiveness of different industries and to be able to compare them;
- Analyzes competitive forces;
- Analyzes customers (markets) and create sales forecast;
- Develops strategic marketing plan;
- Uses different analytical tools to make appropriate marketing decisions (building relevant positioning; setting appropriate product, branding and pricing strategy);
- Effectively presents and discusses the results which are received from industry, competitors and customers analysis;
- Presents strategic marketing plan;
- Works individually and in the team to solve marketing problems.

Back

Foundations of Data Science

We live in the world of big data. “Data Science” is at the heart of making sense out of big data, which is a critical ingredient for innovation and sustainable growth in private, governmental, and not-for-profit organizations. “Data Science” has emerged as a field that encompasses elements of statistics, computer science, and domain-
specific knowledge. This course is about introductory statistics and follows recommendations of GAISE (Guidelines for Assessment and Instruction in Statistics Education) to:

- Teach statistical thinking
- Focus on conceptual understanding
- Integrate real data with a context and a purpose
- Foster active learning
- Use technology to explore concepts and analyze data. Choice of the technology is open sourse statistical software R.
- Use assessments to improve and evaluate student learning

High level goal of the course is to produce statistically educated students, which means that students should develop the ability to think statistically. Achieving this goal, along with mastering main statistical methods, will require a solid understanding of statistical concepts and principles that underlie such methods. Therefore, the more specific goal of the course is to convey a knowledge of statistical concepts, main statistical methods of data analysis and principles behind statistical methods.

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Data Engineering

The Data Engineering course is designed to provide students with a comprehensive and thorough understanding of the field of Data. The course focuses on building a strong foundation and general understanding, making it suitable for both beginners and those with some prior experience. The course covers a range of topics, including data concepts and environments, data mining, and the ETL process. In the section on data concepts and environments, students will learn about the different types of data and the various environments in which data can be stored, processed, and analyzed. The section on data mining will cover techniques for collecting, cleaning, and organizing data, as well as methods for identifying patterns and trends in large datasets.

The course will also review different data engineering tools, including those used for data storage, data processing, and data analysis. Students will learn how to choose the right tool for a given task and how each tool can be used effectively. The ETL process is a crucial component of data engineering, and the course will cover this topic in depth. Students will learn about the various stages of the ETL process, including data extraction, data transformation, and data loading, as well as the different tools and techniques used at each stage.

Finally, the course will briefly cover e key concept of data analysis and data visualization, which are essential skills for data engineers. Students will learn how to perform data analysis using various techniques and tools, as well as how to present their findings through effective data visualization.

By the end of the course, students will have a good foundation of data engineering and the skills necessary to succeed in this field.

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Information Systems Management

The course covers issues such as: Information systems concepts in organizational and managerial context, the impact of information systems on the organization, the business value of different information systems, technological components of information systems, building information systems and managing global systems, ethical and social issues of information systems management, issues of integration of modern information systems, practice-based situation analysis will be used throughout the course.

The aim of the course is to teach students the role of strategic information systems in the success of the organization, modern methods of management systems and approaches based on the experience of international organizations

Upon completion of the course student:

- Describes strategic implementation of information systems;
- Understands the role of information technology in creating and managing an organizational structure;
- Explains the business value of various information systems;
- Uses modern business technologies;
- Uses modern methods of information systems software;
- Uses data resource management technologies;
- Strategically selects information systems;
- Defines information technology tasks;
- Builds information systems and manages global systems;
- Understands the need for necessary changes in the organization and implements them effectively, in innovative ways;
- Studies the latest technologies and understand the need for their use;
- Understands the ethical and social issues of information systems.

Back

Cyber Security for Managers

The work of a business organization today without the use of cyber security is impossible. It is used not only to perform daily functions, but also to provide engagement and proper awareness, being a key direction in communication. The risks increase in proportion to the increasing use of cyberspace. Unfortunately, there is no immunity to cyber threats. The course will teach the students the legal framework of the world and Georgia, the threats and challenges in cyberspace, the history of cyberdomain use in modern conflicts, as well as the basics of cyberspace security for business or government sectors.

The aim of the course it to teach students how to use cyber security in governmental, political, geopolitical and business spheres. The graduates knowledge embody principles which will outlast today's cyber security environment.

Upon successful completion of the training course the student:

- Uses general terms and concepts of cyber security;
- Understands international conventions in the field of cyber security;
- Analyzes the threats in modern cyberspace;
- Aware of insider threats;
- Uses knowledge of the basics of cyber security management;
- Uses cyber elements in modern conflicts;
- Uses cyberspace for information-psychological impact, terrorism and cyber security issues;
- Uses the basic postulates of creating a cybersecurity strategy for business;

Back

Data Communications and Networking

One of the most important developments in computing in the last ten years is the widespread interconnection of computers. Data Communications and Networks, explores this exciting technology. This course examines the underlying technology that makes data communication possible. The course will cover various transmission media, digital and analog signals, modulation, multiplexing, circuit switching, error control and flow control. The course will also cover many real-world examples of data communication, including modems, DSL, Ethernet, wireless LANs, and cell phones. The course focuses on the design of individual networks, but it does finish with a brief overview of internetworking and the TCP/IP internet protocol.
This course provides an in-depth knowledge of data communications and networking requirements including networking and telecommunications technologies, hardware, and software. Emphasis is upon the analysis and design of networking applications in organizations. Management of telecommunications networks, cost-benefit analysis, and evaluation of connectivity options are also covered. Students learn to evaluate, select, and implement different communication options within an organization

After successfully complete this course student:

- Analyzes the business needs of an organization and applies the correct networking solutions;
- Uses high-level technical background which allows them to conceptualize a network and specify its components;
- Designs and documents a large network, convey that design to managers in an understandable way;
- Works with network engineers and technicians to ensure the successful implementation and ongoing maintenance of a network.

Back

Cloud technologies

Cloud technologies have changed the way consumers interact with data and applications. Instead of hard data carriers or network servers, data and applications can be stored remotely, which can be accessed anytime, anywhere via the Internet. What is important is the extent to which cloud technologies are changing the face of corporate IT and the IT specialist's work environment.
The course will discuss: definition of cloud computing, private, public and hybrid cloud, cloud types IaaS PaaS, SaaS, advantages and challenges of cloud technologies and architecture, application availability, security and error correction, next generation cloud applications, cloud services management.
The aim of the training course is to provide students with knowledge about modern distribution systems in order to be able to use them in accordance with the needs of the organization.
After completing the course, the student:
- Describes the basics of cloud technologies;
- Determines cloud computing needs;
- Describes the principles of different types of cloud technologies;
- Chooses the cloud platforms corresponding to the organization's requirements;
- Manages cloud services;
- Uses cloud services development tools;
- Determines economic calculations and business needs;
- Introduces new initiatives for the development of the organization.

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Project Management

The project management course is built according to the international standard PMBOK 6th by PMI and ICB 4.0 by IPMA. The course is adapted to the current and future activities of Master's grade students.
The course includes theoretical and practical important issues, review of exercises, and preparing relevant plans; gained theoretical and practical knowledge at each lecture will be reinforced in the form of independent work - through the development of individual projects (Project-Based learning).

The major objective of the course is to teach the most necessary topics of project management, theoretical as well as practical. After completion of the course, students will know the principles of project management, projects phases' identification and integration, preparation of the most necessary project documentation, planning, implementation, control, and monitoring processes.

Upon completion of the course students own following generic (transferrable) and field-specific competencies:

- Uses modern project methods and software
- Uses of modern software: MS Project, Trello and Telegram in practice
- Describes principles of project phasing, phase management, coordination and integration;
- Prepares all necessary project documents and plans;
- Uses project implementation, control and monitoring methods;
- Uses principles of Human Resources Management (RACI, RAM, Histograms and Levels)
- Uses project risk management methods;
- Performs project monitoring, control (including the EVM method) and closure.
- Realizes the importance of projects to the organization and the specificity of its management in organizations with different structures
- Understands the importance of using different methods when managing a project
- Understands the importance of using software for efficient use of resources, effective management and successful management of several projects.

Back

Modern Cryptography

The course will teach students symmetric and asymmetric cryptography. After completing the course, students will know which cryptographic schemes must be used and also the rules for using these schemes. Students will be introduced to the challenges of the modern cryptography and current scientific research directions. The course
will also introduce students to post-quantum cryptography, introduce them to the problems in this field and the methods of solving them.

The goal of the course is to introduce students to modern cryptography and the methods of using it. Students will learn which cryptographic schemes must be used and will also learn the rules for using these schemes. Students will learn about the challenges of modern cryptography and the directions of current scientific research. The aim of the course is also to introduce students to post-quantum cryptography, problems in this field and to involve students in the process of scientific research

Upon successful completion of the subject the student:

- Identifies software security issues;
- Uses modern risk analysis terminology;
- Justifies the need for knowledge of security issues;
- Assess security risks;
- Develops safety methods to eliminate common errors;
- Builds protection mechanisms in the software;
- Enhances the security of software systems;
- Selects the best approaches and standards when developing a technological solution or application;

Back

Statistics for managers

This course provides the basic knowledge of statistical analysis that is essential for a manager when making a decision, which covers the various aspects of planning, problem identification and solution, decision making. The course covers the basic descriptive methods needed to run a business and teaches the basics of statistical inference, model building and forecasting, data distribution and evaluation, and quality management. Exercises from real business situations are used to validate the material.

The aim of the course is to teach students the basic concepts of quantitative and qualitative analysis, the essence of social and statistical research, basic statistical tables and diagrams, their construction and use, basic statistical quantitative indicators and their applications, basic probabilistic-statistical models, research methods and Applications in daily life.

Upon completion of the training course, the student:

- Understands statistical processing of data, which helps to find ways to solve individual problems;
- Describes research methods and approaches.
- Works independently and conduct research independently, using the latest methods and approaches
- Draws reasoned conclusions as a result of critical analysis and synthesis of complex and incomplete information;
- Passes conclusions, arguments and research results to the academic or professional community through information technology

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Decision Making Theory

Decision making is an integral part of professional life. Study course in decision making theory is based on scientifically proven and successfully applied theories from research disciplines like behavioral economics and cognitive psychology.

A goal of the study course is to introduce students with a main normative and descriptive decision theories; to equip students with skills of applying rational decision-making model in practice; to show students cognitive errors prevailing in decision-making and ways to avoid them; and to explain students a principle-based negotiation methodology, which will help in fast and peaceful agreement achievement.

After completion of the course, student:

- Explains human bounded rationality in decision making process, its causes, and ways to eliminate these causes.
- Develops and applies a rational decision-making model.
- Applies rational decision-making principles in negotiations and to use these principles in practice to achieve desired results.
- Describes the principles of choice architecture in both, private and public sectors, and ability of indirectly influencing human decisions to increase effectiveness.

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Innovation & Change Management

We hear a lot about the importance of innovation in business and our daily lives. Starting from: “there are only two functions of business: marketing and innovation to “innovation is the only way to win” and etc.” Innovation mania escalated to a level when it started to get on some people’s nerves.
However, we know that those organizations that are constantly successful at managing innovation outperform their peers in terms of growth, financial performance, and employment. Managing innovation requires skills and knowledge that are significantly different from the standard management toolkit. Throughout the course, a clear systematic and integrated framework is provided which will guide students to identify and manage innovation. Throughout the course, a clear systematic and integrated framework is provided which will guide students to identify and manage innovation.

Upon completion of the course student:

- Obtains a strong evidence-based knowledge of the understanding the process of managing innovation
- Develops an understanding of practical, experienced tested processes, models, and tools.

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Human Resource Management

In nowadays fast moving and highly competitive environment, attaining and maintaining its core competency is critically important for every organization. In order to deal with the fierce competition, organizations should/must constantly develop, be innovative and keeping up with the novelties on the market. However, successful ones recognize that having the Human Capital as core competencies differentiates them from their competitors and is a key determinant of competitive advantages. It holds all the other assets, such as financial and physical ones, together and guides their use to ensure long-term organizational effectiveness. Human Resource Management is one of the most important strategic functions of the organization. Learning course covers following topics: Environment of Human Resources Management; HR Planning, Jobs and Labor; Training and Development; Talent Management; Performance Management; Compensation and Benefits; Reward and Recognition; Employee Relations.

The main objective of the course is to help students better understand the concept of Human Resource Management. Give them all the necessary skills to address various HR related issues. Emphasize importance of HRM both on strategic and operational levels. As the Human Capital is one of the key determinants of the competitive advantage, properly managed it helps organizations to accomplish goals effectively and efficiently. HRM course is of strategic importance and was specially designed for management students, as the part of their jobs responsibilities includes people management.

After completing the course, student:

- Overcomes potential challenges in Human Resource Management;
- Engages both on strategic and operational level of HRM;
- Attracts and retains talents;
- Develops reward and recognition system;
- Plans training and development activities;
- Manages performance appraisal processes;
- Assesses risks related to HRM processes.

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Professional Internship

The aim of the course is to enable the student to apply the knowledge gained in the class to practice in a real organization. Deepen knowledge in a specific direction. Get acquainted with the management of information technologies and their specifics, master the practical skills necessary to work in the departments of information technologies. The student will be able to form their own attitude towards a specific activity and seize the opportunity to choose directly before taking on a future job commitment;
Upon completion of the professional internship program, the student will be able to find employment easily and quickly. The course aims to deepen students' theoretical knowledge in the field of information technology management, to teach the fundamental principles of information technology management, various systems.

The aim of the course is to develop postgraduate students:

- Ability to pay attention to real-world situations and scientific news, as well as to constantly update knowledge;
- Ability to effectively apply the knowledge gained in the field of information technology management in practical activities and other skills necessary for specialty activities;
- Ability to defend objectivity, good faith, justice, human rights, information security, social and democratic values in practical work in the field of information technology management;

Upon successful completion of this course the student:

- Understands the role of information technology in society and in the organization;
- Selects, implements and effectively uses the technological solutions necessary for the success of the organization;
- Formulates problems in the organization and solves these problems in practice;
- Selects and uses modern business technologies, taking into account the specifics of the organization;
- Sees the need to make the necessary changes in the organization and implements them effectively and in innovative ways;
- Evaluates and maintains the quality of work performed;
- Makes effective and solid solutions to the problem;
- Uses the principles of group work in the implementation of practical projects;
- Takes leadership responsibilities and works as a team;
- Convincingly conveys his / her conclusions to colleagues and stakeholders.
- Evaluates the progress of one's own knowledge;
- Describes the possibilities of constantly updating the acquired knowledge;
- Understands legal, professional, ethical and social responsibilities related to technology.

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Academic Writing & Research Methods

The course aims to equip the student with both theoretical knowledge and practical skills, which are necessary to conduct research in accordance with the requirements of the master's degree. The course develops the student's knowledge of how to apply research methodology and theoretical knowledge of methods in the research planning process. The student learns how to plan a research project and explore important issues in the field. The student learns the structure of research, the requirements of academic language, and the logical sequence of a research project. The student acquires the competence that is essential for a novice researcher.

The aim of the course is to provide students with knowledge and skills which are necessary to plan the stages and develop the structure for valid and reliable research. Throughout the course a major emphasis will be made on the principles of planning a scholarly piece of work; students will learn how to plan their research and present a final edited version of their study; they will develop knowledge and skills how to develop a research topic into a real piece of research, outline research methodology and methods in order to successfully complete their research project. Students will review the principles of citation and referencing and the specificity of APA referencing style as well as the requirements determined for an MA thesis. Students will analyse how to form research questions and hypothesis. Throughout the course students will learn discuss how to describe research methodology and methods in a research proposal. The course will help students acquire knowledge and skills which are necessary to plan a piece of research at MA level.

Upon successful completion of the course a student:

- Understands how important it is to use specific terms and concepts properly and consistently in a research context;
- Uses a scholarly language properly and consistently;
- Reviews scholarly and professional literature and while doing so observes APA standards and requirements for citation and referencing;
- Realizes the requirements and aspects which are necessary to plan urgent quantitative or qualitative research with much practical value;
- Defines a research problem and formulates a research title;
- Writes a research design (plan);
- Writes clearly formulated research questions;
- Identifies and finds reliable and valid information in libraries, the Internet and other electronic databases.

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