

Technische Hochschule WILDAU



CAUCASUS UNIVERSITY



კავკასიის ტექნოლოგიების სკოლა
CAUCASUS SCHOOL OF TECHNOLOGY

Joint Master's Program in
Digital Logistics Management

Name of Educational Programme in Georgian	ციფრული ლოგისტიკის მენეჯმენტი (ერთობლივი)
Name of Educational Programme in English	Master's Program in Digital Logistics Management (Joint)
Level of Higher Education	Master's
Type of the educational program	Academic
Instruction Language	English
Awarded Qualifications & Codes	
In Georgian:	საინჟინრო ლოგისტიკის მაგისტრი, 0719
In English:	Master of Engineering Logistics, 0719
Date of Program Approval	08.07.2021, University President Order N01/01-49; 23.12.2022, University President Order N01/01-73
Program Coordinator/Co-Coordinator	Prof. Dr. Frank Gillert; Co-Head Affiliated Prof. Dr. Giorgi Doborjginidze
Program Volume in Credits	<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.</p> <p><u>Digital logistics management specialized component - 108 ECTS:</u></p> <ul style="list-style-type: none"> - Obligatory courses -72 ECTS; - Elective courses - 6 ECTS; - Master Thesis - 30 ECTS; <p><u>Learning courses of free component - 12 ECTS:</u></p> <ul style="list-style-type: none"> - Obligatory courses of university - 6 ECTS; - Elective courses of university - 6 ECTS.

Program Description

General Information

The extra-occupational master „Digital Logistics Management“ in the graduate program is certified as a Master of Engineering Logistics. The content of the program is oriented on diverse requirements: Digitalisation of the economy, personal leadership, competences in project management, sustainable development in technical and environmental topics as well as the use of strategies in the area of logistics and supply chain management. All highly needed skills are claimed by the society, economy, industrial sector and political administration as competence requirements for the wider logistics sector.

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 university (Wildau Technical University of Applied Sciences) obtained through the exchange visits of school administration and professors to Georgia. 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 Logistics Information Technology managers both in the Georgian labour 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. 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 content 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 Digital Logistics Managements specialist, both in Georgia and abroad. The program includes engineering, overall management and information technology topics that represent important components of digital logistics management.

Program Objectives

The objectives of the program in Digital Logistics Management are to:

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

Program Learning Outcomes

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

- Understand and share the role of digital logistics technologies through the knowledge of the latest theories in information systems, management methodologies and international standards;
- Effectively plan the structure of the digital logistics technology in the organization, develop information technology service delivery strategies;
- Use methods to assess the strengths and weaknesses of an organizational environment, identify strategic risks, and use assessment tools. Develop ability to operate independently while planning and managing in a risky and dynamically changing environments;
- Work with modern tools and applications of digital logistics system planning and logistics process modelling;
- Adapt and apply modern business technologies in the organization, evaluate complex problems of logistics systems, analyze results and solve them in an innovative way;
- Conduct scientific theoretical and practical research in the field of logistics information management and apply modern methodology in scientific research;
- Calculate and evaluate environmental effects of logistical approaches.

Program Curriculum

№	Course Code	Course Prerequisite	Course Name	Year				ECTS
				I		II		
				I Semester	II Semester	III Semester	IV Semester	
Digital logistics management specialized component								
Obligatory courses -72 ECTS								
1.	LOG 5141		<u>Decision Support Systems in Logistics</u>	x				6
2.	LOG 5142		<u>Fianacial Management</u>	x				6
3.	LOG 5143		<u>Intermodal Transport and Terminal Management</u>	x				6
4.	LOG 5144		<u>Advanced Energy Technologies in Logistics</u>	x				6
5.	LOG 5241	LOG 5143	<u>Global Logistics using IT Systems</u>		x			6
6.	LOG 5242	LOG 5141	<u>Traffic and Transport planning Systems</u>		x			6
7.	LOG 5243	LOG 5143	<u>Road Rail Air Maritime shipping</u>		x			6
8.	LOG 5341	LOG 5241	<u>Advanced Logistics Network Operations</u>			x		6
9.	LOG 5342		<u>Business analytics and Digital Transformation</u>			x		6
10.	LOG 5343	LOG 5144	<u>Logistics Quality and Environmental Management</u>			x		6
11.	LOG 5344	LOG 5241	<u>Digital Warehouse Mangement</u>			x		6
12.	LOG 5345		<u>Digital Risk and Change Mangement</u>			x		6
Elective courses - 6 ECTS								
13.	LID 5140		<u>Leadership</u>	x				6
14.	MNG 5140		<u>Strategic Management</u>	x				6
15.	ISM 5244		<u>Enterprise Resource Planning (ERP) Systems</u>		x			6
16.	LOG 5244	LOG 5144	<u>Traffic evaluation and environmental Effects</u>		x			6
17.	MNG 5340		<u>Decision Making</u>		x			6
18.	ISM 5344		<u>Project Management</u>		x			6
Master Thesis - 30 ECTS								
19.	MST 5441		<u>Master's Thesis</u>				x	30
Learning courses of free component - 12 ECTS								
20.	WRT 5340		<u>Academic Writing & Research Methods</u>		x			6
21.	INT 5440		<u>Professional Internship</u>				x	6
ECTS				Per Semester	30	30	30	30
				Per Year	60	60		

Decision oriented Mathematica, Statistics are the basic of quantitative analysis, and optimization-oriented logistics. Decisions problems has to be formulated in quantitative mathematical models and in these steps, the decision for an optimum regarding the optimization of cost or other targets can calculated by given algorithms. The students learn to find an optimum or very good solution out of great number possible results using this amount of given mathematical tools to solve complex logistical problems successfully. In the same is the use of statistical software for testing the confidence and stability of results are used. Classical fields of logistics problems use mathematical decision tools like project management, transport problems, stock management, location problems, route planning and vehicle scheduling problems - with the use of software tools.

This course provides an application-oriented use of optimization tools. The use of statistical software will introduce prognosis and trends, as well as seasonal statistics. The knowledge of analyzing the basic problem for the identification of and praxis-oriented use case is one of the leading objectives. The formulation and preparation of the problem as a decision case for the use of the given software library of optimization and statistical tools. The use of the software like the IBM ILOG Cplex . Use Cases shows the quality and benefits of such tools.

After successfully complete this course students will be familiar and will have following skills:

- Get an advanced knowledge to identify classical logistical decision problems;
- Analyze and preparing this problems for use in the software tools;
- Use the mathematical tools for practical use cases independently;
- Interpret and use the solution for a practical problem;
- Implement tasks and present in team situation;
- Develop social competences in the discussion in dialogue out of the different positions of stakeholders;

Financial Management

Supply Chain Managers working within companies are tasked with managing and controlling a company's finances and investment activities; they play a key role in a firm from the perspective of capital market participants. This course provides an introduction to corporate finance and financial management. Students will gain insight into topics that are highly relevant in practice such as the goals and objectives of financial management within a company, measures for financial control, and the basic functions of capital markets. Tools of financial analysis such as the calculation of cash flows are also introduced. The course covers aspects regarding the determination of a company's optimal capital structure and costs related to different financing options. Students will also be introduced to the options theory and options pricing as well as the practical application of options in a company. In this course, students will learn the advanced tools of financial management and understand the interaction between companies and financial markets as it relates to financing commercial activities with equity or debt. Students will develop an in-depth understanding of the tension between risk and return.

This course provides an in-depth knowledge of financial management tools including the evaluation and selection of possible combinations and value steering. This includes the quality characteristics of the technology and the cost and performance of the different techniques and information software.

- (1) interested in understanding investment value of companies
- (2) involved in finance function in non-financial companies
- (3) involved in finance industry (financial industry professionals)

After successfully complete this course students will be familiar and will have following skills:

- recognize and evaluate different equity and debt financing alternatives as well as internal and external sources of funding.
- recognize the role that financial markets play in providing funding for companies and how these markets interact with companies.
- explain the tension between risk and return.
- recognize the importance of portfolio diversification and utilize the capital asset pricing model (CAPM) to
- evaluate financial instruments together with costs of capital.
- describe options, option pricing, and how options are used in financial management.
- critically discuss questions regarding the optional capital structure of a company from a theoretic and practical perspective.

Intermodal Transport and Terminal Management

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One important development in Transport Logistics are the improvement of intermodal shipping including an efficient transshipment at Terminals. This is a result to the success story of box transports in ISO-Containers or other containments in metric containers. It allows the use of intermodal transport chains in a high efficiency. This course examines the design of Terminal Management and diverse technologies of transshipment between the different transport modes in ports, stations, terminals and airports. The characteristics and performance of the different transport chains and logistic items are analysed and evaluated.

This course provides an in-depth knowledge of intermodal transport chains including the evaluation and selection of possible combinations. This includes the quality characteristics of the technology and the cost and performance of the different techniques and information software. Management of intermodal transport chains, cost-benefit analysis, and evaluation of connectivity options are also covered. Students learn to evaluate, select, and implement different intermodal transport chains.

After successfully complete this course students:

- Uses an advanced knowledge about Logistics in intermodal Transport chains and Terminal Management
- Analyses business needs and performance of different intermodal transport chains;
- Develops different business models in intermodal transport;
- Designs and evaluates different intermodal transshipment systems;
- Implements tasks and use cases in a project team;
- Develops social competences in cooperation situations

Advanced Energy Technologies in Logistics

[*Back*](#)

Complex engineering systems like modern Transport Logistics are determined by the development of materials and energy technologies. Mass and energy flow are optimized according to the competitiveness of the cost and increasingly for the social acceptance an accepted ecological footprint is necessary.

During the past decades the technical performance and reliability are continuously developed. For the next challenge climate neutrality new tools in Energetic Drive technologies and associated energy storage are necessary. This course examines the design of drive technologies in the scientific frame of Materials and Energy technologies. The characteristics and performance of the different concepts analyzed and evaluated.

This course provides an in-depth knowledge of energetic drive technologies and associated energy storage concepts for transport chains including the evaluation and selection of possible combinations. This refers to the quality characteristics of the technology and the cost and performance of the different techniques and the left ecological footprint. Students learn to evaluate, to argue technical solutions from an engineering point of view and to push different options according to the sustainability goals.

After successfully complete this course students will be familiar and will have following skills:

- Get an advanced knowledge about energetic drive technologies and associated energy storage concepts
- Analyze technical needs and performance of different energetic drive technologies;
- Develop and scale different engineering concepts in energy storage;
- Design and evaluates different energetic drive technologies and associated energy storage concepts for transport chains;
- Implement tasks and use cases in a project team;
- Develop social competences in cooperation situations

Global Logistics using IT Systems

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This course looks at two different aspects of logistics services, technology and specifically IT: how should a technological setup of a company look like, that renders global logistics services and what are the requirements for a global logistics company to foster innovation or to become a (digital) innovation champion. The starting point for these considerations is the process model of a globally acting logistics company, ideally viewed from the viewpoint of supply chain management. The course will look at typical IT/technological solution scenarios (the integrated one using modules of an ERP like SAP TM) and a bespoke one (typically organically grown IT landscapes) with best of breed solutions for different processes and respective interfaces. Pros and cons of these different approaches are discussed and examples from global logistics players are presented and critically reviewed. Besides full-fledged ERP systems dedicated solution approaches for selected topics of global logistics will also be looked at. The second part of this course looks at the future of global logistics specifically from an innovation perspective. Tools for driving digitalization and innovation are discussed. The tools will be assessed with respect to their level of maturity, innovation and benefit potential. Students will understand the relevant topics under discussion in the context of innovation and digitalization and they will be able to assess which tools can be implemented in a given company setup.

This course shall help students to gain a solid understanding of:

- the specific requirements of global logistics
- the role of logistics in a global supply chain management context
- the processes that are either unique or specifically affected in a global logistics scenario
- different IT/technology architectures that properly support global logistics operation
- innovation and digitalization tools and approaches that generate opportunities to run global logistics operation more successfully
- limitations and hurdles to implement innovation in global logistics After successful completion of this course students will:

After successful completion of this course students will:

- see objectives above
- have anchor points for deeper investigations of selected topics
- rate the contribution of AI to solve logistics problems
- oversee state-of-the-art technology solutions in global logistics

Traffic and Transport planning Systems

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Traffic Planning Systems based on different models in traffic analyses and modelling. The classical steps of traffic modelling worked out like trip generation, trip distribution, trip modal split and trip assignment. Furthermore, the freight transport in its different categories is calculated and analyzed. The tools of infrastructure planning in networks as well as for nodes of the different modes of road, rail, sea and air are adopted and used. Software tools of traffic planning systems like VISUM applied for use cases.

This course provides an in-depth knowledge of traffic planning and modelling systems for passenger and freight transport. The application of such traffic planning software tools leads to explain the benefit of such approaches. In Seminars the application of the software with the example of the software suite VISUM are included. Use Cases shows the quality and benefits of such tools. Infrastructure planning can be solved and evaluated by the students.

After successfully complete this course students will be familiar and will have following skills:

- Get an advanced knowledge about evaluation of organization of traffic surveys and infrastructure planning projects transport systems and infrastructure planning projects;
- Calculating and evaluating different variants of traffic solutions
- Analyze business needs and performance of the evaluation process;
- Develop different business models in intermodal transport;
- Design and evaluates different approaches in the evaluation process;
- Implement tasks and use cases in practical situations;
- Develop social competences in the discussion in dialogue with the different positions of stakeholders;

Road Rail Air Maritime shipping

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This course is supposed to familiarize students with the different modes of transportation. Specifically, each mode is looked at with respect to its characteristics, markets, tools, equipment and social and environmental impacts.

An in-depth comparison across the different modes of transportation is developed and students will thus learn to select the right mode (or combination of modes) for a given transportation scenario. Special emphasis is on understanding cost structures of the different modes and on optimizing these costs via innovative approaches like optimal space utilization, efficient network structures, intelligent tour planning and bundling of services. Intermodal transportation and pipelining are only briefly touched as they are covered in more detail in a separate course. Innovative concepts in the transportation market are also presented. This may range from telematic systems in trucks via intelligent greenhouse gas filtering in maritime services to big data analyses and web-based freight exchange platforms.

This course generates an in-depth knowledge of different transportation modes. Students learn to evaluate, select, and plan freight transports using the most adequate transportation mode(s). The state-of-the-art use of technology, tools and equipment in and across different transportation modes will be presented and the students shall understand advantages and limitations of their use. Finally, students will be able to apply cost optimization or revenue enhancement methods for a given transportation task or setup

After successful completion of this course students will:

- evaluate and select different transportation options that are commercially offered for freight / cargo
- assess adequacy of each transportation mode
- understand the related technologies, innovations and trends as well as the markets related to the different transportation modes
- pick the right (combination of) modes for a given transport scenario
- judge on cost and price worthiness of a given transportation offer
- apply (operational and commercial) improvement measures

Advanced Logistics Network Operations

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Globalization in all aspects of economy associated with fast innovation cycles force companies to set up advanced logistics networks to cope with high dynamics. Agility and real time business demand results in employment of sophisticated Information and communication technologies alongside with new algorithm form the machine learning field. However basic concepts of design of networks and collaboration models such as SCOR have to be the ground for digitalization in the network planning.

This course provides an in-depth knowledge of existing network planning models and collaboration principles in globalized supply chains. It covers organizational as well as technical approaches and gives insides to innovative measures such as digital twin technologies. and organizational transformation.

After successfully complete this course students will be familiar and will have following skills:

- Understand the nature and evolution of data and information for operational and strategic challenges;
- Analyze business models and derive digital concepts;
- Develop positioning strategies in digital eco-systems;
- Design and evaluate sustainable strategies using Artificial Intelligence methods;
- Implement tasks and use cases in a project team;
- Develop social competences with respect to privacy and ethical aspects in digital new-work structures;

Business analytics and Digital Transformation

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The innovation cycle dramatically shortened over the last 2 decades as result from ICT developments. Within the last 10 years the data volume globally reached almost unlimited size. Therefore, companies need to face the challenges and figure out what opportunity to be gained from the information surge. Every cell of the organizational body is affected and needs to be assessed regarding advantages. This leads to a holistic transformation process which is a competitive key. Also new terms are out as Big Data AI and machine learning the major ideas of Business analytics and Performance measurement is still valid.

This course provides an in-depth knowledge of Business Analytics on the basis of state-of-the-art digital technologies for innovative business models and organizational transformation. Reviewing quantitative methods and KPI concepts new data and information models are discussed. The given opportunities from digital developments are structured aiming at comprehensive digital business models.

After successfully complete this course students will be familiar and will have following skills:

- Understand the nature and evolution of data and information for operational and strategic challenges;
- Analyse business models and derive digital concepts;
- Develop positioning strategies in digital eco-systems;
- Design and evaluate sustainable strategies using Big Data and Machine Learning;
- Implement tasks and use cases in a project team;
- Develop social competences with respect to privacy and ethical aspects in digital new-work structures;

Logistics Quality and Environmental Management

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Quality and environmental sustainability are key service differentiators in the logistics business. This course is supposed to familiarize students with concepts and methods of proper quality management and environmental management in the context of logistics operations (transport and warehousing). To start with, students will learn the generic approaches of quality management. Respective tools will be discussed for planning and monitoring quality improvements and special emphasis will be on applying the tools and methods in a typical logistics environment. The course covers simple and low-level approaches like Kaizen as well as sophisticated methodologies like Six Sigma.

Environmental management is still in its infancy and therefore the focus will be mainly on monitoring the impact of logistics operation on the environment (environmental accounting) and on the opportunities of decreasing the environmental footprint of logistics operations.

Digitalization in both quality and environmental management starts with the collection of information (data) on the status of quality and sustainability and digitalization mainly means data collection and data analyses. Students will get to know the respective monitoring and data warehouse concepts. This course shall qualify and enable the student to identify the status on quality and the environmental footprint specifically for a logistics company. Based on a sound understanding of generic quality and environmental management the student shall be able to identify the most suitable tools and methods to be selected for a company in order to reach the company's quality and environmental goals. Ideally, the student can derive a quality / environmental strategy from a company's overall business strategy and design a plan to implement this strategy (in combination with the course Project Risk and Change Management).

This course shall qualify and enable the student to identify the status on quality and the environmental footprint specifically for a logistics company. Based on a sound understanding of generic quality and environmental management the student shall be able to identify the most suitable tools and methods to be selected for a company in order to reach the company's quality and environmental goals. Ideally, the student can derive a quality / environmental strategy from a company's overall business strategy and design a plan to implement this strategy (in combination with the course Project Risk and Change Management).

Additionally, the student will understand the interconnection between a quality strategy and a sustainability strategy of a company and will be able to design multi-lever initiatives. The student will also understand the importance of proper quality and environmental reporting systems and the selection of meaningful parameters

(key performance indicator) to demonstrate the success of respective initiatives. After successful completion of this course students will:

After successful completion of this course students will:

- determine the status of quality and the environmental situation in a company
- apply generic management system approaches and specific aspects of their implementation in a quality and environmental context
- select and apply tools and methods to measure and improve the quality and environmental status of a company in projects and measures
- determine KPIs for both quality and environmental performance, apply them and derive measures from respective trend analyses
- perform a proper success and impact measurement

Digital Warehouse Management

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This course looks at the operational aspects of warehouses and warehouse management. Starting with the core processes in a warehouse student will gain an understanding on how operations in a warehouse is taking place and how operations can be supported by technology. Specific emphasis is on the outbound process (picking, packing, shipping) and on the technology to support such processes.

On top of operations warehouse planning and strategic warehousing optimization is also considered. Planning resource utilization is a key element as well as performance management in a warehouse environment. On top of the economic performance of a warehouse, accompanying KPIs that describe quality performance and environmental aspects are also looked at.

The course picks selected aspects of optimization approaches in a warehouse and will apply respective concepts in case studies.

Finally, the role of warehouse management systems will be discussed in more detail. The link between supply chain management systems and warehouse management systems will be discussed and functional as well as data specifications will be developed for selected processes. Two off-the-shelf WMS solutions will be screened for their functional coverage and support of innovative components.

This course shall help students to gain a solid understanding of:

- warehouse processes (operational and planning)
- resources required to operate warehouses
- state of the art warehouse automation technologies
- state-of-the-art technology supporting warehouse processes
- advanced performance monitoring in warehousing
- sophisticated quality and environmental management in warehouses
- functional coverage and data design of modern warehouse management systems

After successful completion of this course student:

- Assesses and selects the right warehouse management system for a given warehousing set up
- Assesses and benchmark the performance of warehouse operations
- Assesses warehouse automation opportunities

This course is supposed to familiarize students with a holistic concept of change management. Change is looked at in various dimensions – a (psychological) people dimension, a (methodological) implementation dimension and a risk/opportunities dimension. For all dimension students will get to know tools and methods to describe and manage these change management approaches within these dimensions. Wherever suitable, state of the art IT

based solutions are shown including a review and evaluation of the respective benefits and constraints. Case studies serve as a method to apply tools and methods in a close-to-reality scenario, preferably taken from the logistics/ supply chain business.

The different dimensions of change are discussed separately and, in a second step, are integrated into a holistic view of the impact of change and of change management. This course combines “soft aspects” like the overcoming of reluctance towards change with “hard aspects” like risk assessment and successful project management

methods This course shall qualify and enable the student to identify the need for change in a business environment and to manage and drive change successfully using state of the art approaches and tools.

Students shall understand the key success factors of change management and the fact that change management is a combination of psychology, strategic thinking and the craft of solid project and risk management. Students will know different tools and approaches and will be able to apply them properly.

More specifically students will be able to setup a change management project organization and will also be able to develop proper change communication concepts.

This course shall qualify and enable the student to identify the need for change in a business environment and to manage and drive change successfully using state of the art approaches and tools. Students shall understand the key success factors of change management and the fact that change management is a combination of psychology, strategic thinking and the craft of solid project and risk management. Students will know different tools and approaches and will be able to apply them properly. More specifically students will be able to setup a change management project organization and will also be able to develop proper change communication concepts.

After successful completion of this course students will:

- know and understand indications that show the need for change
- understand the different dimensions of change (risk, project management, communication, psychology)
- know and apply tools and methods to support change
- conduct proper risk analyses
- design and setup proper project organizations to manage change

Leadership

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Leadership is the action of leading a group of people or an organization. It represents the influencing process of leaders and followers aimed at achieving organizational objectives through change. The course includes (but is not limited to) the following major topics: leadership mindset, human nature and personality, objective self-awareness, work ethic, leadership traits, skills, and resources, leadership styles, power and politics, communication and personal branding, influence, teamwork and networking, global awareness, and adaptation

The aim of the course is to introduce students to the latest global knowledge and the best practice on leadership and give them general understanding of leading people in teams, organizations, and beyond. The students will have an opportunity to discuss and deeply

analyze individuals as leaders, as well as leadership of teams and organizations in local and international terms. The Students will be familiar with theoretical framework and practical applications of major leadership topics, which will give them the ability to:

- Understand leadership mindset, work ethic and discipline
- Objectively assess own nature and personality, leadership potential, traits, skills, resources, values, principles, vision, and goals
- Distinguish among and assume various leadership styles, roles, and models
- Establish assertive communication and effectively influence and persuade others through mastery of personal branding, power, and politics
- Create and manage high performing and diverse teams, while building strong and sustainable networks inside and outside of organizations
- Grasp the big picture and think and strategize in global terms
- Adapt to people and change through self-improvement and education

Strategic Management

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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.

After the course completion, student will be able to:

Know deeply and systematically principles of formation of strategic vision, mission and objectives; Know deeply and systematically instruments for external and internal environment scanning Indicate ethical problems in strategy formulation;

Plan and realize organizational changes; Introduce and implement strategy;

Independently elaborate business plan through allocation of resources and planning of actions of all functional departments;

Correctly classify research results for the purpose of strategic decision making; Evaluate and analyze strategic alternatives for the purpose of decision making; Prepare project in writing and present it with the use of business terminology;

Describe assumptions made in a research, identify advantages of the chosen method, prepare and present analytical and research paper;

Identify his/her own professional interests, comprehend features of learning process in order to strategically plan his/her learning and self-development process.

Comprehend ethical, social and civil responsibility;

Enterprise Resource Planning (ERP) Systems

[*Back*](#)

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 introduces 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 course students will be able to understand:

- Basics, Technological, Operational, business reasons for ERP implementation, ERP implementation life cycle, objectives, phases.
- What are the technological, operational and business challenges faced by the company in ERP implementation;
- Effective development and implementation of ERP systems;
- How Technology is changing work and organizations;
- Why is important to use ERP, SCM, CRM in organizations;

Traffic evaluation and environmental Effects

[*Back*](#)

Traffic Evaluation and Environmental Effects shows the key figures of efficiency and performance of different modes of transport with respect to given capacity and characteristics. A useful overview about environmental emissions of pollution and noise depending on transport modes worked out. A depth knowledge of environmental effects by different kind of transport will be the result. Furthermore, the effects on environment are calculated and analyzed with evaluation software. Software tools of traffic planning systems like VISUM applied for use cases in calculation the network efficiency and environmental effects.

This course provides an in-depth knowledge of evaluating the given and planned infrastructure and the transport systems for passenger and freight transport. Additional the knowledge about the process of environmental effects is an important part of the course. The application of software tools covers the understanding to explain the process

of efficiency of transport modes and systems and benefit of such approaches. In seminars and case studies the application of the software with the example of the software suite VISUM are used for such calculations for micro situations in limited areas as well for more global effects. Use Cases shows the quality and benefits of such tools. Infrastructure planning can be solved and evaluated by the students.

After successfully complete this course students will be familiar and will have following skills:

- Get an advanced knowledge about evaluation of transport systems and infrastructure planning projects;
- Analyze business needs and performance of the evaluation process;
- Develop different business models in intermodal transport;
- Design and evaluates different approaches in the evaluation process;
- Implement tasks and use cases in a team situation;
- Develop social competences in the discussion in dialogue out of the different positions of stakeholders;

Decision Making

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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, students will have:

- A deep knowledge of human bounded rationality in decision making process, its causes, and ways to eliminate these causes.
- A skill of developing and applying a rational decision-making model.
- An ability to apply rational decision-making principles in negotiations and to use these principles in practice to achieve desired results.
- In-depth knowledge of the principles of choice architecture in both, private and public sectors, and ability of indirectly influencing human decisions to increase effectiveness.

Project Management

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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.

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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:

- Modern project methods and software
- Use of modern software: MS Project, Trello and Telegraam in practice
- Principles of project phasing, phase management, coordination and integration;
- Preparation of all necessary project documents and plans;
- Project implementation, control and monitoring methods;
- Human Resources Management (RACI, RAM, Histograms and Levels)
- Project risk management methods;
- Project monitoring, control (including the EVM method) and closure
- The student realizes:
- The importance of projects to the organization and the specificity of its management in organizations with different structures
- The importance of using different methods when managing a project
- The importance of using software for efficient use of resources, effective management and successful management of several projects

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.

The student will acquire the following competencies:

- Ability to conduct scientific theoretical and practical research in the field of logistics information management;
- Ability to work with modern tools and applications of logistics system planning and logistics process modelling;
- Ability to evaluate complex problems of logistics systems, analyze results and solve them in an innovative way;
- Ability to find and analyze information from different sources;
- Ability to think critically and self-critically;
- Ability to accurately identify problems, identify and develop reasoned solutions;
- Ability to solve problems using modern research tools and methodologies;
- Ability to organizationally plan and implement a research and practical project;
- Ability to develop original and creative ideas;
- Ability to create practically valuable research paper using existing knowledge and research competencies;
- Ability to communicate in a reasoned and understandable language;
- Ability to adhere to legal and ethical norms;
- Ability to expand the acquired knowledge;
- Time management skills.

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 data-bases.

Professional Internship

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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 digital logistics management and its specifics, master the practical skills necessary in logistics field. 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 digital logistics management, to teach the fundamental principles of digital logistics management, various systems.

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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 digital logistics 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 digital logistics management;

Upon successful completion of this course the student:

- Understands the role of digital logistics management 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;