



Perspektywy



Erasmus+

8. SUPPLY CHAIN ANALYTICS IN DIGITAL LOGISTICS

Program of educational discipline

Program budget

№	Indicator	Value
1	Approximate student capacity, persons	200-250
2	Total hours	36
3	Lecturers pay per hour, EUR	30
4	Total lecturing cost, EUR	1000
5	Total administrative cost, EUR (15%)	150
6	Total course cost, EUR	1150

The purpose of the program: to form an understanding of supply chain management through the prism of business digitalization. This program will be particularly useful for those who work or want to work in areas such as supply chain management, manufacturing and logistics, analysts, supply chain consultants, who seek to gain a deeper understanding of the new business reality - the integration of business entities into supply chains/networks and digitalization of their activities.

Tasks of the program:

- Determine the trends of digitization of supply chains and the possibilities of using digital technologies.
- To form basic knowledge of the configuration and diagnostics of supply chains, to be able to identify the main participants, to determine and analyze the type of their market behavior.
- To have methods and tools for analyzing business processes in supply chains.
- Be able to determine strategies for the development and optimization of business processes in supply chains.
- Provide the fundamentals of machine learning for supply chain management
- To form practical skills of analysis and optimization of supply chains of the focal company.

Program structure:

Topic 1. Trends in digitization of supply chain management

1.1. Course on formation of an ecosystem for monitoring operations in "END TO END" supply chains:

2.2. Digital doubles. Cloud services. Internet of things. Automation and robotics.

2.3. Augmented reality. Blockchain, smart contracts. Reasonable composition.

Intelligent unmanned transport. Drones

Topic 2. Thinking in categories of supply chains. Basic competencies

2.1. Concept of supply chain. The importance of supply chain analytics, including its role, impact and key challenges.

2.2. Configuration of supply chains. Supply chain participants, their roles and behavioral patterns.

2.3. Basic and supporting business processes in the supply chain.

2.4. Case: Discussing the supply chain configuration of the focal company.

Topic 3. Analysis of supply chains. Special competences.

- 3.1. Supply chain metrics and their hierarchy.
- 3.2. Methodology for calculating indicators characterizing the supply chain.
- 3.3. Data collection and processing.
- 3.4. Case: calculation of indicators of the supply chain of the focal company.

Topic 4. Demand analytics

- 4.1. Forecasting the creation and maintenance of effective supply chains.
- 4.2. The impact of forecasting on the decision-making process.

Topic 5. Inventory analytics

- 5.1. How to stay competitive and meet demand.
- 5.2. Avoiding out-of-stock items, back-orders and delivery delays.
- 5.3. Understanding supply chain inventory decisions and the role analytics play.

Topic 6. Network design in the supply chain and its optimization

- 6.1. Network design, the role it plays in supply chain analytics, and factors influencing network design decisions.
- 6.2. Lean supply chains. Flexible supply chains. Closed supply chains.
- 6.3. The contradiction between flexibility, efficiency and sustainability.
- 6.4. Possibilities of optimization and risks of goods movement. Key performance indicators and calculation methodology.
- 6.5. Data collection and processing (inventories, demand and supply).
- 6.6. Case: Discussing the focal company's supply chain strategy.

Topic 7. Machine learning programs for the supply chains

- 7.1. Current trends in machine learning.
- 7.2. Application of machine learning programs in supply chain management.

7.3. Identification of opportunities for improvement and rethinking of supply chain management in the organization.

Topic 8. Role-playing business game

Purpose: Improvement of processes in the focal company's supply chains.

Result: Obtaining practical skills in justifying decisions on optimization of supply chains.

The program lasts 6 weeks with 6 academic hours of study per week.

Teaching methods: interactive videos, practical tests, discussion forums, case method, work in small groups, business games, presentations.