



Faculty of Technology

The Institute of Technology and Business in České Budějovice

Thematic Areas for State Final Examination

Follow-Up Master's Degree – Study Programme: **Logistics**

Applicable to the Following Recommended Study Plans: DP_LOG_P_č.1, DP_LOG_K_č.1

State Final Examination in: **Transport Logistics**

Thematic Areas for State Final Examination

Study Programme:

Logistics

State Final Examination in:

Transport Logistics
(*Specialisation I.*)

Prerequisites for State Final Examination:

Transport Logistics
City Logistics Technology
Supply Systems Management

Approved by the Programme Guarantor:	doc. Ing. Rudolf Kampf, Ph.D.	Signature:	
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Publication Date:	20. 09. 2021
Effective from:	Academic Year 2021/2022
Valid until:	Revocation

Thematic Areas

1. Basic Legislation in Transport (Transport policy in the EU and the Czech Republic, basic European directives and regulations, international agreements, national legislation regulating the operation of individual modes of transport).
2. Transport Infrastructure (specific features of transport infrastructure, financing of transport infrastructure, TEN-T network, transport infrastructure in the Czech Republic, interoperability in rail transport).
3. Providers of Transport and Shipping Services (characteristics and division of the transport services market, characteristics of the basic services provided on the rail and road transport market, the concept and meaning of freight forwarding, the position of freight forwarders on the transport market, INCOTERMS clauses).
4. Means of Transport in Transport Logistics (pallets - division, standardization, marking, principles of creating pallet units, pallet communities, one-way pallets; containers - maritime ISO, Innofreight, ACTS; swap bodies related to road vehicles).
5. Characteristics of the Basic Transport-Based Logistics Technologies (formation of handling groups, Just in Time, Just in Sequence, Hub and Spoke, Centralized Warehouse Technology, Kanban).
6. Intermodal Transport Systems - transport in ISO containers, Innofreight, ACTS (characteristics of systems, technical basis).
7. Intermodal Transport Systems - transport of road trailers, swap bodies, road unit sets (characteristics of systems, technical basis).
8. City Logistics - definition, objectives and tasks of City logistics, basic terms and system components, system interconnectedness, basic concept of City logistics, City logistics approaches (examples of City logistics solutions), European standards related to City logistics.
9. Transport as a System - urban transport system (elements, functions, components), system concept of urban transport, measures for transport organisation in cities / towns, traffic management in cities / towns.
10. Definition of Transport Services in Urban Agglomerations - road transport in cities / towns, transport services and integrated transport systems.
11. Forecasting and Modelling of Traffic and Transport Requirements in Urban Agglomerations - traffic model and its elements, traffic flow theory (basic concepts and characteristics, division), modelling and simulation of traffic flow (process, division, traffic engineering tools for traffic modelling).
12. Technology and Management of Urban Freight Transport - logistics of urban freight transport, freight transport technologies implemented in cities / towns, City logistics approaches in the context of urban freight transport.
13. City Logistics Approaches - examples of City logistics solutions in the Czech Republic and abroad. Data collection and throughput analysis - assessment of local road performance, organisation, management and regulation of traffic, traffic surveys.
14. Analysis and Model of Population Movement - traffic intensity (terms, technical standards, methods of determining traffic intensity). Geographical Information Systems (GIS) - definition, components, implementation of GIS. Transport and territorial development in the context of City logistics.
15. Supply Chains in Organizational Structure of Companies, Processes, Functions of Company Departments.
16. Integrated Material and Information Flows of Supply Chains - system structures and elements.
17. Supply Chain Analyses, Model Resources, Simulation Systems.
18. Structures of Procurement, Production and Distribution logistics.
19. Supply Chain Planning, Implementation of Theory Principles in Supply Systems.

20. Material Handling in Supply Chain, Characteristics, Selection Criteria and Sizing of Handling Equipment and Systems.

Recommended Literature

BEN-AKIVA, M. E. MEERSMAN, H. and VAN DE VOORDE, E. Freight transport modelling. Bingley: Emerald, 2013. ISBN 978-1-78190-285-1.

DAGANZO, C. F. and OUYANG, Y. Public transportation systems: principles of system design, operations planning and real-time control. New Jersey: World Scientific, 2019. ISBN 978-981-3224-08-7.

CHOPRA, S. Supply Chain Management: Strategy, Planning and Operation. 7th ed. Pearson Education Limited, 2019. 514 p. ISBN 978-0-13-473188-9.

HENSHER, D. A. and BUTTON, K. J. Handbook of transport modelling. Online. Second ed. Handbooks in transport. Bingley: Emerald, 2008. ISBN 9780857245670.

HUGOS, M. H. Essentials of Supply Chain Management. 3rd Ed. Wiley, 2011. 348 p. ISBN 978-0-470-94218-5.

LABADIE, N., PRINS, C. and PRODHON, C. Metaheuristics for Vehicle Routing Problems (Computer Engineering: Metaheuristics Set, 3). 1st ed. Wiley-ISTE, 2016. 194 p. ISBN 978-1-84821-811-6.

LAMBERT, D. M. Supply Chain Management: Processes, Partnerships, Performance. 2nd ed. Supply Chain Management Institute, 2005. 344 p. ISBN 978-0-9759949-1-7.

RIGGS, W. Disruptive transport: driverless cars, transport innovation and the sustainable city of tomorrow. Routledge equity, justice and the sustainable city series. London: Routledge, Taylor & Francis Group, 2019. ISBN 978-1-138-61316-4.

SARDER, M. D. Logistics Transportation Systems, 1st Ed., Elsevier, 2020, ISBN 9780128159743.

SOUTHERN, R. N. Transportation and logistics basics, Memphis: Continental Traffic Publishing Company, 1997. ISBN 0-9655014-0-X.

STOPKA, O. Application of Operations Research Methods in City Logistics. 1st. Kielce, Poland: Wydawnictwo Politechniki Świętokrzyskiej, Kielce, Poland, 2020. 203 p. ISBN 978-83-65719-85-0.

TANIGUCHI, E. et al. Urban Transportation and Logistics: Health, Safety, and Security Concerns. 1st. CRC Press, 2013. 280 p. ISBN 978-1-4822-0909-9.

TANIGUCHI, E. and THOMPSON, R.G. City Logistics: Mapping the Future. CRC Press, 2014. 231 p. ISBN 978-1-4822-0889-4.

WANG, Y. and PETTIT, S. J. E-logistics: managing digital supply chains for competitive advantage. 2nd ed. London: Kogan Page, 2021. ISBN 978-0-7494-9688-3.