**“Transportation Economics and Demand Analysis”**

**Syllabus SCR.02/2**

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Version 1

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# Name of the course

**Transportation Economics and Demand Analysis**

# ECTS credits

6 Credits, **(45H Theory; 30H Exercises), 2nd semester**

This lecture provides students with basic knowledge in the field of analytical use of transportation economics and Demand Analysis. The lecture should acquaint students with theoretical approach of transport market, demand for transport and pricing of transport services. Student teach to evaluation effectiveness of rendition of transport services.

# Objectives

The main objectives of this lecture are following:

* Basic terminology and basic concepts in the field of transportation economics.
* Relationship between transport and economic development.
* Market for the transport services – the theory transport supply and transport demand.
* Transport demand analysis – survey factors that influence transport demand.
* Competition in the transport market – perfect and imperfect competition.
* The pricing of transport activities – the principle of pricing separately for transport operators and transport infrastructure managers.
* Regulation of transport – description of regulated transport services, the principles of economic regulation.
* External costs of transport – quantification and evaluation transport externalities.

# Learning outcomes

The general expectation regarding the knowledge to be provided/acquired is as follows:

* analytical work in the field of economics and transport data processing for the research their development and interdependence;
* work with statistical information system to solve specific problems of application character;
* knowledge factors that influence transport demand and calculation price and cross elasticity;
* knowledge the transport regulation tools in the field of price regulation, infrastructure and market surveillance, international cooperation;
* solving more complicated problems in the field of effectiveness of rendition of transport services on the basis of a practical examples.

# Contents

1. INTRODUCTION

1.1 Transport and the economy

1.2 The scope of the subject

1.3 Specifics in transport services

1.4 The economic characteristic of transport

1. TRANSPORT AND ECONOMIC DEVELOPMENT

2.1 Transportation activities

2.1.1 Passenger and freight movements in the EU

2.1.2 Transportation network and performance in the EU

2.1.3 Modal split

2.1.4 Transport at the national level

2.1.5 Local transport

2.2 Relationship between transport and economic development

2.2.1 Transport policy

2.2.2 Economic growth theory and transport

2.2.3 The role of passenger transport in economic development

2.2.4 Transport and society

2.2.5 Transport and regional and urban development

1. TRANSPORT MARKET

3.1 Spectrum of transport market structure

3.2 Monopoly markets

3.3 Competition in the transport market

3.3.1 Competition in the freight transport

3.3.2 Competition in the passenger transport – open access transport

services

3.4 Public passenger transport

3.4.1 Railway transport

3.4.2 Road transport

3.4.3 Integration transport system

1. DEMAND AND SUPLLY OF TRANSPORT

4.1 Demand for transport

4.1.1 Factors that influence travel demand

4.1.2 Transportation choice demand

4.1.3 Price and cross elasticity

4.2 Supply of transport

4.2.1 Factors that influence supply of transport

4.2.2 Quantification supply of transport in the individual transport modes

1. PRICING OF TRANSPORT SERVICES

5.1 The principle of pricing

5.2 The pricing of transport infrastructure

5.2.1 Marginal costs pricing

5.2.2 Average costs pricing

5.3 Price differentiation, price discrimination and yield management

5.4 Transport subsidies, operational objectives and pricing

5.5 Efficiency losses from market price controls

1. ECONOMIC REGULATION OF TRANSPORT

6.1 Forms of transport regulation

6.2 Transport authority – regulatory authority

6.3 The regulation of monopoly power

6.4 Alternative paths for regulatory reform

6.5 Overview of economic deregulation in transportation

1. EXTERNAL COSTS OF TRANSPORT

7.1 Transport and environment

7.2 Methods for valuation of transport externalities

7.3 Economic costs of individual transport externalities

7.4 Possibilities and problems of internalization of transport externalities

1. EXCERCISES

8.1. Work with European and national statistical database – research development of economics and transport.

8.2. Comparison the competition by transport mode in the freight and passenger transport.

8.3. Price analysis, calculation of price and cross elasticity in the long-distance and regional transport.

8.4. Calculation of rail transport infrastructure fees in the European countries for different train and different loading schemes in freight transport.

8.5. Discussion about advantages and disadvantages of economic regulation in transport sector.

# Teaching method

Lectures, case studies, tutorials/exercises

* The slides are available for the whole course. They are provided to students (or uploaded in the MOODLE system). The full contents of each slide is systematically explained by the Lecturer. Additional examples which are not included in the slides are proposed by the Lecturer to allow good understanding of the information provided.
* The slides contain exercises without solutions. They should be solved together by lecture and students during the lecture. The students are fully assisted by the Lecturer in order to obtain correct/exact solutions to the proposed exercises. This should help to check whether the students have understood the chapters or not.
* Several exercises are proposed by the Lecturer to be solved by students as projects. This should help to test the self-learning potential of students.

# Assessment method

Mid-term and final oral and/or written examination, exercises from case studies.

# Textbooks - Publications

**Textbooks**

* Button K.: Transport economics. 3rd Edition. Edward Elgar. UK
* Cowie J., Ison S., Rye T., Riddington G.: The Economics of Transport. A theoretical and applied perspective
* McCarthy S. P.: Transportation Economics. Theory and Practice: A Case Study Approach
* Savy M., Burnham J.: Freight Transport and the Modern Economy
* Dolinayová A., Nedeliaková E., Brumerčíkova E.: Economic of Railway Transport

**Selected relevant Publications**

* Summaries of EU legislation on transport. https://eur-lex.europa.eu/summary/chapter/transport.html?root\_default=SUM\_1\_CODED%3D32&locale=en
* EU transport policy – White Paper. Roadmap to a Single European Transport Area - Towards a competitive and resource efficient transport system: https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:52011DC0144
* EU Transport Statistics: https://ec.europa.eu/eurostat/data/database