Study plan

Name of study plan: Master Full-Time IS (joint degree) from 2023/24

Faculty/Institute/Others:

Department:

Branch of study guaranteed by the department: Welcome page

Garantor of the study branch:

Program of study: Logistics and Transport Processes Control

Type of study: Follow-up master full-time

Required credits: 120 Elective courses credits: 0 Sum of credits in the plan: 120

Note on the plan:

Name of the block: Compulsory courses Minimal number of credits of the block: 93

The role of the block: Z

Code of the group: 1S-NP-LA-20/21

Name of the group: 1st Sem. Master Full-Time LA from 2020/21

Requirement credits in the group: In this group you have to gain 26 credits

Requirement courses in the group: In this group you have to complete 9 courses

Credits in the group: 26 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11LIP2	Linear Programming 2 Pavla Pecherková, Ivan Nagy Pavla Pecherková Ivan Nagy (Gar.)	Z,ZK	3	2P+1C+10B	Z	Z
11TER	Game Theory and Optimal Decision-Making Magdalena Hykšová Magdalena Hykšová (Gar.)	ZK	2	2P+0C+8B	Z	Z
17LSC	Logistics in Smart Cities Tomáš Horák Tomáš Horák (Gar.)	Z,ZK	6	2P+2C+14B	Z	Z
17TZND	Technology of Railway Transport Michal Drábek, Zden k Michl, Vít Janoš, Rudolf Vávra Vít Janoš (Gar.)	Z,ZK	4	2P+2C	Z	Z
17TZOR	Inventory, Replacement and Scheduling Theory	Z,ZK	3	2P+1C	Z	Z
14GISS	Geographical Information Systems Vít Fábera, František Kekula, Tomáš Janata, Zuzana Purkrábková Tomáš Janata Tomáš Janata (Gar.)	KZ	2	0P+2C+8B	Z	Z
17MADS	Management of Transport Systems Roman Št rba Roman Št rba (Gar.)	KZ	2	2P+0C+8B	Z	Z
17TSI	Technology of Road Transport Michal Drábek, Vít Janoš Michal Drábek (Gar.)	KZ	2	2P+0C+8B	Z	Z
15J2A1	Language - English 1 Jitka He manová, Peter Morpuss, Markéta Vojanová, Marie Michlová, Markéta Musilová, Jan Feit, Eva Rezlerová Lenka Monková (Gar.)	Z	2	0P+2C+10B	Z	Z

Characteristics of the courses of this group of Study Plan: Code=1S-NP-LA-20/21 Name=1st Sem. Master Full-Time LA from 2020/21

11LIP2	Linear Programming 2	Z,ZK	3
Formulation of the task	of integer programming, branch and bound method of numerical solution, problems about knapsack, travelling salesman, sets	location of stores	and post boxes,
tasks of scheduling, her	uristics, metaheuristics - genetic algorithms, ant colony optimization.		

11TER Game Theory and Optimal Decision-Making ZK 2

Decision-making theory, utility theory. Explicit form games, backward induction. Normal form games. Antagonistic conflict, matrix games. Repeated games, evolutionary game theory. Cooperative games without transferable payoffs. Cooperative games with transferable payoffs (imputation, core, Shapley value, nucleolus). Applications of game theory above all in economics and transportation.

17LSC Logistics in Smart Cities Z,ZK 6

Development of cities in time, city and region, mobility of city residents and movement of goods, sustainability as a concept, Smart Cities, city as a system and its components, quality of life, individual quality of life, city "smartness" assessment, legislation in Smart Cities, Smart Cities transformation, last mile logistics, e-commerce, new approaches in last mile logistics, last mile logisitcs in cities and in regions.

17TZND Technology of Railway Transport Z,ZK 4

Track line capacity assessment, model operational situation with a system running time between IPT-nodes, calculation of traction energy savings compared with infrastructure costs for designing of fleeting crossing station, solving of capacity problem and blocking time in relation to train protection system, robustness of timetable, system concept of freight train paths, guidelines for centralised operational traffic control and management.

17TZOR	Inventory, Replacement and Scheduling Theory	Z,ZK	3
Inventory theory - intr	oduction, static models, deterministic dynamic models, stochastic dynamic models. Replacement theory - introduction, models	for replacement	of items that
deteriorate with time,	models for replacement of items that fail completely. Scheduling theory - introduction, single machine scheduling problems, para	Illel machine sche	duling problems,
flow shop scheduling	problems and job shop scheduling problems.		
14GISS	Geographical Information Systems	KZ	2
Construction of saving	format of space-oriented information land-survey and cartography minimum basic tasks of spatial operations principles of ter	ritorial identificatio	on .
17MADS	Management of Transport Systems	KZ	2
Functions, processes	and systems of management in transport, organisational structures, strategy, social responsibility, soft skills.	,	'
17TSI	Technology of Road Transport	KZ	2
Legislative, operationa	al, technical, logistic and safety conditions of road transport, basic transport technologies, special transport, international agree	ements, requirem	ents on the
parameters and speci	alization of transport, handling and loading/unloading means, maintenance, service and repairs of road vehicles, safety of road	d transport and ch	oice of optimal
transport unit.			
15J2A1	Language - English 1	Z	2
Presentation Skills - e	xpert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work engagement.	•	•

Code of the group: 2S-NP-LA-20/21

Name of the group: 2nd Sem. Master Full-Time LA from 2020/21

Requirement credits in the group: In this group you have to gain 24 credits

Requirement courses in the group: In this group you have to complete 8 courses

Credits in the group: 24

Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11THRO	Queuing Theory Šárka Vorá ová	ZK	2	2P+0C+8B	L	Z
17KMD	Quantitative Methods in Transport	Z,ZK	6	2P+2C	L	Z
17MID	Managerial Information Systems in Transport	Z,ZK	3	2P+1C+10B	L L	Z
17RKOP	Management of commercial projects in transport Petra Skolilová	Z,ZK	3	2P+1C+10B	L	Z
14BIG	Big Data	KZ	2	0P+2C+8B	L L	Z
14TEL	Telecommunications	KZ	3	2P+1C+10B	L	Z
17DOCH	Travel Behavior	KZ	3	3P+0C+10B	L	Z
15JBA2	Language - English 2 Lenka Monková (Gar.)	Z	2	0P+2C+10B	L	Z

Characteristics of the courses of this group of Study Plan: Code=2S-NP-LA-20/21 Name=2nd Sem. Master Full-Time LA from 2020/21 Queuing Theory Discrete event process, definition, random distribution, and probability. Basic processes, process of revitalisation. Markov process, Markov models, Kendall classification, model M/M/1, models M/M/n. Non-markovian models, model M/C/n, models G/G/n. Models with continuous flow. Service net, examples of Petri net. Computer simulation Quantitative Methods in Transport 17KMD Z,ZK The course focuses on the issue of the use of undirected graphs tree type, planar graphs and their coloring. Further distribution problems, facility location problems are formulated and solved such as models of integer linear programming. Besides the use of exact methods there are described simple and also more sofisticated heuristics (metaheuristics) methods. Managerial Information Systems in Transport IT and their use in building IS of modern transport company. New EU legislation on cyber security and data protection puts transport organizations in front of new challenges. The course focuses on the security of IS and possible sources of danger. The practical part deals with the process of building a new IS from the idea through the timetable and the financial budget, the basic documents for the possible assignment of the contract. 17RKOP Management of commercial projects in transport Z,ZK Business project (customer, activities, output - quality, time, money), project surroundings, location of the project (area analysis, traffic flows, authorization procedure), organizational structure of the project, sources of financing, customer-supplier relations, feasibility studies, sensitivity and multi-criteria analysis, financial and value analysis, management of project changes. 14BIG Big Data ΚZ Principle of MapReduce. Basic Principles of Big Data Management. Comparison and Classification of NoSQL Databases. Key Database Value Database. Column Databases. Document Databases. Graph Databases-Basic Principles. Graph Databases-Advanced Aspects. Indexing. Interpretation. Advanced Principles Big Data Management. NewSQL Databases. Cloud computing. Data warehouses and Big Data. Cloud computing. Data warehouses and Big Data. Other Big Data issues. 14TEL **Telecommunications** ΚZ Status quo and new trends in telecommunications systems. Economical and legal aspects of telecommunications networks design and telecommunications services provisioning, identification and quantification of hIererchical telecommunications networks and telecommunication services performance based on addopted performance parameters, telecommunication services typically applied within transport and specifically logistic solutions. 17DOCH Travel Behavior Investigation of causal effects in travel behavior research (quasi-experimental and experimental approaches). Data collection (theory of measurement; design of research instrument and data collection). Analysis and interpretation of data (advanced regression models; issues of analysis and interpretation of results: effect size, practical vs. statistical significance). Analysis and interpr. of data (surveys, choice exp., panel. data).

Code of the group: 3S-NP-LA-22/23

Language - English 2

15JBA2

Presentation Skills - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work engagement.

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Name of the group: 3rd Sem. Master Full-Time LA from 2022/23

Requirement credits in the group: In this group you have to gain 23 credits

Requirement courses in the group: In this group you have to complete 6 courses

Credits in the group: 23

Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11STS	Stochastic Systems Pavla Pecherková, Šárka Trs anová, Evženie Uglickich, Šárka Vorá ová, Natálie Blahitka, Michal Matowicki Pavla Pecherková Šárka Vorá ová (Gar.)	Z,ZK	4	2P+2C+14B	Z	Z
17DOPM	Transportation Planning and Modeling Milan K íž Milan K íž (Gar.)	Z,ZK	6	2P+2C	Z	Z
17PPC	Carriage Processes Roman St rba Roman Št rba (Gar.)	ZK	3	2P+0C	Z	Z
17RVIP	Public Project Management in Transport Alexandra Dvo á ková, Daniel Pilát Alexandra Dvo á ková (Gar.)	Z,ZK	5	2P+2C+14B	Z	Z
17AMAN	Application of Marketing Tools in Transport Industry Petra Skolilová Petra Skolilová (Gar.)	KZ	3	2P+0C	Z	Z
15JBA3	Language - English 3 Jitka He manová, Peter Morpuss, Markéta Vojanová, Marie Michlová, Markéta Musilová, Jan Feit, Eva Rezlerová, Marek Tome ek Lenka Monková (Gar.)	Z	2	0P+2C+10B	Z	Z

Characteristics of the courses of this group of Study Plan: Code=3S-NP-LA-22/23 Name=3rd Sem. Master Full-Time LA from 2022/23

The subject deals with	the problems of mathematical modelling of dynamical systems, estimation od these models and their utilization for prediction.	The results are il	lustrated on
practical transportatio	n tasks. Mathematical theory roots from probability and mathematical statistics and they use the methods of the Bayesian prob	abilistic approach	١.
17DOPM	Transportation Planning and Modeling	Z,ZK	6
Basic steps and tools	used within four step model (trip generation, trip distribution, mode choice and trip distribution). Mobility and availability in urba	n areas, land use	. New trends for
transportation plannin	g and modelling.		
17PPC	Carriage Processes	ZK	3
Domestic carriages, in	nternational carriages, nomenclature of goods, pricing, contracting, responsibility for damages.		
17RVIP	Public Project Management in Transport	Z,ZK	5
Basic concepts of proj	ect management in the public sector, used procedures and standards of project management, organizational structure in project	t management in t	the public sector,
project and pre-project	t preparation in transport and transport infrastructure and their specifics, feasibility study and CBA, project evaluation.		

Basic concepts of project	t management in the public sector, used procedures and standards of project management, organizational structure in projec	t management in t	the public sector,			
project and pre-project preparation in transport and transport infrastructure and their specifics, feasibility study and CBA, project evaluation.						
17AMAN	Application of Marketing Tools in Transport Industry	KZ	3			
Strategic marketing plan	is. Implementation of marketing campaigns. Branding and brand promotion. Multimedia presentations. Direct marketing and r	elated lead genera	ation campaigns.			

15JBA3 | Language - English 3 | Z | 2
Presentation Skills - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work engagement. Optional courses for certificates

FCE, CAE.

Code of the group: 4S-NP-LA-21/22

Stochastic Systems

Name of the group: 4th Sem. Master Full-Time LA from 2021/22

Requirement credits in the group: In this group you have to gain 2 credits

Requirement courses in the group: In this group you have to complete 1 course

Credits in the group: 2 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
15JBA4	Language - English 4 Jitka He manová, Peter Morpuss, Markéta Vojanová, Marie Michlová, Markéta Musilová, Jan Feit, Eva Rezlerová, Lenka Monková, Dana Boušová, Lenka Monková (Gar.)	ZK	2	0P+2C+10B	L	Z

Characteristics of the courses of this group of Study Plan: Code=4S-NP-LA-21/22 Name=4th Sem. Master Full-Time LA from 2021/22

15JBA4 Language - English 4 ZK 2
Presentation Skills - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work engagement. Optional courses for certificates FCE, CAE.

Code of the group: XD-NP-LA-21/22

Name of the group: Thesis Master Full-Time LA from 2021/22

Requirement credits in the group: In this group you have to gain 18 credits

Requirement courses in the group: In this group you have to complete 1 course

Credits in the group: 18 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11XNDM	Master Thesis for study programme LA	Z	18	0P+20C+70B	L	Z
12XNDM	Master Thesis for study programme LA	Z	18	0P+20C+70B	L	Z
14XNDM	Master Thesis for study programme LA	Z	18	0P+20C+70B	L	Z
15XNDM	Master Thesis for study programme LA	Z	18	0P+20C+70B	L	Z
16XNDM	Master Thesis for study programme LA	Z	18	0P+20C+70B	L L	Z
17XNDM	Master Thesis for study programme LA	Z	18	0P+20C+70B	L L	Z
18XNDM	Master Thesis for study programme LA	Z	18	0P+20C+70B	L L	Z
20XNDM	Master Thesis for study programme LA	Z	18	0P+20C+70B	L	Z
21XNDM	Master Thesis for study programme LA	Z	18	0P+20C+70B	L L	Z
22XNDM	Master Thesis for study programme LA	Z	18	0P+20C+70B	L	Z
23XNDM	Master Thesis for study programme LA	Z	18	0P+20C+70B	L	Z

Characteristics of the courses of this group of Study Plan: Code=XD-NP-LA-21/22 Name=Thesis Master Full-Time LA from 2021/22

11XNDM	Master Thesis for study programme LA	Z	18
12XNDM	Master Thesis for study programme LA	Z	18
14XNDM	Master Thesis for study programme LA	Z	18
15XNDM	Master Thesis for study programme LA	Z	18
16XNDM	Master Thesis for study programme LA	Z	18
17XNDM	Master Thesis for study programme LA	Z	18
18XNDM	Master Thesis for study programme LA	Z	18
20XNDM	Master Thesis for study programme LA	Z	18
21XNDM	Master Thesis for study programme LA	Z	18
22XNDM	Master Thesis for study programme LA	Z	18
23XNDM	Master Thesis for study programme LA	Z	18

Name of the block: Semestrální projekt Minimal number of credits of the block: 13

The role of the block: ZP

Code of the group: X2-NP-LA-20/21

Name of the group: Research Groups Master Full-Time LA from 2020/21 Requirement credits in the group: In this group you have to gain 13 credits

Requirement courses in the group: In this group you have to complete 4 courses

Credits in the group: 13

Note on the group:

note on the	group.					
Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11XN1	Master Project 1	Z	2	0P+2C+4E	Z	ZP
12XN1	Master Project 1 Daniel Chlebek, Jakub Zají ek, Zuzana arská, Dagmar Ko árková, Kristýna Neubergová, Martin Jacura, Jan Kruntorád, Ond ej Trešl, David Vodák,	Z	2	0P+2C+4E	3 Z	ZP
14XN1	Master Project 1	Z	2	0P+2C+4E	Z	ZP
15XN1	Master Project 1	Z	2	0P+2C+4E	Z	ZP
16XN1	Master Project 1 Josef Mik, P emysl Toman	Z	2	0P+2C+4E	3 Z	ZP
17XN1	Master Project 1 Tomáš Horák, Eliška Glaserová, Michal Drábek, Zden k Michl, Vít Janoš, Rudolf Vávra, Milan K íž, Alexandra Dvo á ková, Daniel Pilát,	Z	2	0P+2C+4E	B Z	ZP
18XN1	Master Project 1 Daniel Kytý, Václav Rada, Nela Kr má ová	Z	2	0P+2C+4E	Z	ZP
20XN1	Master Project 1 Milan Sliacky, Ji í R ži ka	Z	2	0P+2C+4E	B Z	ZP
21XN1	Master Project 1 Milan Kameník, Stanislav Pleninger, Stanislav Kušmírek, Jakub Trýb, Iveta Kameníková, Jakub Kraus, Andrej Lališ, Slobodan Stoji , Terézia Pilmannová,	Z	2	0P+2C+4E	3 Z	ZP
22XN1	Master Project 1 Michal Frydrýn, Karel Kocián, Luboš Nouzovský, Zden k Svatý, Jakub Nová ek	Z	2	0P+2C+4E	B Z	ZP

23XN1	Master Project 1	Z	2	0P+2C+4B	Z	ZP
11XN2	Master Project 2	Z	2	0P+2C+8B	L	ZP
12XN2	Master Project 2	Z	2	0P+2C+8B	L	ZP
14XN2	Master Project 2	Z	2	0P+2C+8B	L	ZP
15XN2	Master Project 2	Z	2	0P+2C+8B	L	ZP
16XN2	Master Project 2	Z	2	0P+2C+8B	L	ZP
17XN2	Master Project 2	Z	2	0P+2C+8B	L	ZP
18XN2	Master Project 2 Daniel Kytý	Z	2	0P+2C+8B	L	ZP
20XN2	Master Project 2	Z	2	0P+2C+8B	L	ZP
21XN2	Master Project 2	Z	2	0P+2C+8B	L	ZP
22XN2	Master Project 2	Z	2	0P+2C+8B	L	ZP
23XN2	Master Project 2	Z	2	0P+2C+8B	L	ZP
11XN3	Master Project 3	Z	1	0P+4C	Z	ZP
12XN3	Master Project 3 Jakub Zají ek, Zuzana arská, Dagmar Ko árková, Martin Jacura, Jan Kruntorád, Ond ej Trešl, David Vodák, Tomáš Javo ík, Pavel Purkart,	Z	1	0P+4C	Z	ZP
14XN3	Master Project 3	Z	1	0P+4C	Z	ZP
15XN3	Master Project 3	Z	1	0P+4C	Z	ZP
16XN3	Master Project 3 Josef Mik, P emysl Toman, Michal Cenkner, Josef Svoboda	Z	1	0P+4C	Z	ZP
17XN3	Master Project 3 Tomáš Horák, Eliška Glaserová, Michal Drábek, Zden k Michl, Vít Janoš, Rudolf Vávra, Milan K íž, Alexandra Dvo á ková, Daniel Pilát,	Z	1	0P+4C	Z	ZP
18XN3	Master Project 3 Daniel Kytý, Nela Kr má ová, Tomáš Fíla	Z	1	0P+4C	Z	ZP
20XN3	Master Project 3 Ji í R ži ka, Patrik Horaž ovský	Z	1	0P+4C	Z	ZP
21XN3	Master Project 3 Terézia Pilmannová, Miloš Strouhal, Ota Hajzler	Z	1	0P+4C	Z	ZP
22XN3	Master Project 3 Michal Frydrýn, Karel Kocián, Luboš Nouzovský, Zden k Svatý, Tomáš Mi unek	Z	1	0P+4C	Z	ZP
23XN3	Master Project 3	Z	1	0P+4C	Z	ZP
11XN4	Master Project 4	Z	8	0P+4C	L	ZP
12XN4	Master Project 4	Z	8	0P+4C	L	ZP
14XN4	Master Project 4	Z	8	0P+4C	L	ZP
15XN4	Master Project 4	Z	8	0P+4C	L	ZP
16XN4	Master Project 4	Z	8	0P+4C	L	ZP
17XN4	Master Project 4	Z	8	0P+4C	L	ZP
18XN4	Master Project 4	Z	8	0P+4C	L	ZP
20XN4	Master Project 4 Patrik Horaž ovský	Z	8	0P+4C	L	ZP
21XN4	Master Project 4	Z	8	0P+4C	L	ZP
22XN4	Master Project 4	Z	8	0P+4C	L	ZP
23XN4	Master Project 4	Z	8	0P+4C	L	ZP

Characteristics of the courses of this group of Study Plan: Code=X2-NP-LA-20/21 Name=Research Groups Master Full-Time LA from 2020/21

11XN1	Master Project 1	Z	2
12XN1	Master Project 1	Z	2
14XN1	Master Project 1	Z	2
15XN1	Master Project 1	Z	2
16XN1	Master Project 1	Z	2
17XN1	Master Project 1	Z	2
18XN1	Master Project 1	Z	2
20XN1	Master Project 1	Z	2
21XN1	Master Project 1	Z	2
22XN1	Master Project 1	Z	2
23XN1	Master Project 1	Z	2
11XN2	Master Project 2	Z	2
12XN2	Master Project 2	Z	2
14XN2	Master Project 2	Z	2
15XN2	Master Project 2	Z	2

16XN2	Master Project 2	Z	2
17XN2	Master Project 2	Z	2
18XN2	Master Project 2	Z	2
20XN2	Master Project 2	Z	2
21XN2	Master Project 2	Z	2
22XN2	Master Project 2	Z	2
23XN2	Master Project 2	Z	2
11XN3	Master Project 3	Z	1
12XN3	Master Project 3	Z	1
14XN3	Master Project 3	Z	1
15XN3	Master Project 3	Z	1
16XN3	Master Project 3	Z	1
17XN3	Master Project 3	Z	1
18XN3	Master Project 3	Z	1
20XN3	Master Project 3	Z	1
21XN3	Master Project 3	Z	1
22XN3	Master Project 3	Z	1
23XN3	Master Project 3	Z	1
11XN4	Master Project 4	Z	8
12XN4	Master Project 4	Z	8
14XN4	Master Project 4	Z	8
15XN4	Master Project 4	Z	8
16XN4	Master Project 4	Z	8
17XN4	Master Project 4	Z	8
18XN4	Master Project 4	Z	8
20XN4	Master Project 4	Z	8
21XN4	Master Project 4	Z	8
22XN4	Master Project 4	Z	8
23XN4	Master Project 4	Z	8

Name of the block: Compulsory elective courses

Minimal number of credits of the block: 6

The role of the block: PV

Code of the group: Y2-NP-LA-23/24

Name of the group: Comp. Sel. Courses Master Full-Time LA from 2023/24 Requirement credits in the group: In this group you have to gain 6 credits

Requirement courses in the group: In this group you have to complete 3 courses

Credits in the group: 6
Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
00Y2XN	Active participation in a scientific project, workshop, short-term trip abroad Patrik Horaž ovský Patrik Horaž ovský (Gar.)	KZ	2	2P+0C		PV
17Y2AM	Application of Marketing Tools in Transportation	KZ	2	2P+0C	L	PV
12Y2BM	Safety on The Local Roads	KZ	2	2P+0C	Z	PV
23Y2BP	Security Class	KZ	2	2P+0C	Z	PV
21Y2BS	Unmanned aircraft systems 2 Jakub Kraus Jakub Kraus Jakub Kraus (Gar.)	KZ	2	2P+0C+8E	3 Z	PV
14Y2C1	CATIA I	KZ	2	2P+0C	L	PV
14Y2C2	CATIA II	KZ	2	2P+0C	Z	PV
14Y2CS	Sensitivity of Systems	KZ	2	2P+0C	L	PV
21Y2CR	CRM	KZ	2	2P+0C+8E	3 L	PV
12Y2DU	Transport in the Context of Sustainability	KZ	2	2P+0C	L	PV
15Y2DN	Transportation Psychology in German Speaking Countries	KZ	2	2P+0C	L	PV
18Y2DC	Dynamics of Transport Routes and Vehicles	KZ	2	2P+0C	Z	PV
18Y2EM	Electron microscopy	KZ	2	2P+0C	L	PV

16Y2EE	Emissions and Ergonomics of Vehicles	KZ	2	2P+0C	L	PV
17Y2FM	Financing in Urban Mass Transportation	KZ	2	2P+0C	Z	PV
21Y2FM	Aviation Company Financial Management	KZ	2	2P+0C+8B	Z	PV
23Y2FB	Physics for Security Branches	KZ	2	2P+0C	Z	PV
18Y2FZ	Physical foundation of materials' properties Petr Koudelka (Gar.)	KZ	2	2P+0C	L	PV
15Y2HS	Road Transport History	KZ	2	2P+0C	L	PV
16Y2HP	Vehicle Hygiene	KZ	2	2P+0C	L	PV
14Y2IS	Intelligent Systems in Postal Services	KZ	2	2P+0C	L	PV
12Y2IS	Urban Networks	KZ	2	2P+0C	Z	PV
14Y2JM	One-Chip Controllers	KZ	2	2P+0C	Z	PV
15Y2JH	Job Hunting in English Lenka Monková Lenka Monková (Gar.)	KZ	2	2P+0C	Z	PV
14Y2KI	Capital Investment in Transportation and Telecommunications	KZ	2	2P+0C	L	PV
16Y2KV	Car Body Design	KZ	2	2P+0C	L	PV
12Y2KS	Rail Transport in Settlements and Regions Miroslav Veliš	KZ	2	2P+0C	Z	PV
12Y2KE	Landscape Ecology	KZ	2	2P+0C	Z	PV
21Y2LS	Air Traffic Services	KZ	2	2P+0C+8B	L	PV
11Y2LG	Logics of Engineer's Judgement Magdalena Hykšová	KZ	2	2P+0C	L	PV
23Y2MA	Risk Analysis and Management	KZ	2	2P+0C	L	PV
21Y2MQ	Quality Management	KZ	2	2P+0C+8B	L	PV
15Y2MS	Sociology for Managers Martina Šmidochová Martina Šmidochová (Gar.)	KZ	2	2P+0C	Z	PV
21Y2MK	Marketing of Air Transport Peter Vittek Peter Vittek Peter Vittek (Gar.)	KZ	2	2P+0C+8B	Z	PV
12Y2MH	Measurement and Modeling of Traffic Noise	KZ	2	2P+0C	L	PV
12Y2MI	Urban Engineering	KZ	2	2P+0C	L	PV
18Y2MP	Finite Element Method And Its Application	KZ	2	2P+0C	L	PV
16Y2MK	Quality Methods for Vehicles	KZ	2	2P+0C	L	PV
12Y2MD	Methods of Traffic Regulation and Prediction	KZ	2	2P+0C	L	PV
17Y2MO	International Organisations in Transportation	KZ	2	2P+0C	L	PV
17Y2MS	Microsimulation of Railway Operation Zden k Michl Zden k Michl (Gar.)	KZ	2	2P+0C	Z	PV
17Y2MD	Modelling and optimization on transport networks	KZ	2	2P+0C	Z	PV
21Y2MC	CNS Systems Modelling Stanislav Pleninger Stanislav Pleninger (Gar.)	KZ	2	2P+0C+8B	Z	PV
17Y2MT	Modern History for Engineering Students Petra Skolilová Petra Skolilová (Gar.)	KZ	2	2P+0C	Z	PV
12Y2MZ	Modernization of Railway Lines and Stations	KZ	2	2P+0C	L	PV
12Y2NS	Shared Space Design Vojt ch Novotný, Karel Hájek Vojt ch Novotný (Gar.)	KZ	2	2P+0C	Z	PV
14Y2OP	Object Oriented Programming in Transport	KZ	2	2P+0C	L	PV
15Y2OZ	Health Protection in Transportation and EU Petr Musil Petr Musil (Gar.)	KZ	2	2P+0C	Z	PV
15Y2OF	Specialised French for Transportation and Telecommunications	KZ	2	2P+0C	Z	PV
18Y2OB	Optical Contactless Strain Measurements	KZ	2	2P+0C	L	PV
16Y2PG	Computer Graphics and Virtual Reality Stanislav Novotný Stanislav Novotný (Gar.)	KZ	2	2P+0C	Z	PV
22Y2PS	Traffic Accidents Computer Simulation and Analysis	KZ	2	2P+0C	L	PV
15Y2PT	Food in Transportation	KZ	2	2P+0C	L	PV
23Y2PD	Practical vehicle dynamics	KZ	2	2P+0C	L	PV
15Y2PD	Practical Spanish for Transportation Zuzana Krinková (Gar.)	KZ	2	2P+0C	Z	PV
21Y2PP	Law and Operation in Air Transport	KZ	2	2P+0C+8B	L	PV
20Y2PR	Prediction of time series	KZ	2	2P+0C	L	PV
12Y2PV	Public transport priority	KZ	2	2P+0C	L	PV
14Y2PI	Process Information Systems in Transportation	KZ	2	2P+0C	Z	PV
14Y2PJ	C++ Programming Language	KZ	2	2P+0C	L	PV

14Y2PH	CAD Interface Programming	KZ	2	2P+0C	L	PV
11Y2PM	Programming in MATLAB Šárka Vorá ová	KZ	2	2P+0C	L	PV
21Y2PL	Operational Aspects of Aerodromes	KZ	2	2P+0C	Z	PV
15Y2PU	Publications and Their Creation	KZ	2	2P+0C	Z	PV
12Y2RD	Realization of Transport Buildings	KZ	2	2P+0C	L	PV
17Y2RZ	Control of Transport Processes	KZ	2	2P+0C	Z	PV
15Y2SP	Seminar on Political Philosophy Marek Tome ek Marek Tome ek (Gar.)	KZ	2	2P+0C	Z	PV
17Y2SJ	Network Timetabling on the Railway	KZ	2	2P+0C	L	PV
16Y2ST	Special Technologies in Transport and Telecommunications	KZ	2	2P+0C	L	PV
16Y2SV	Special technologies in vehicle manufacturing	KZ	2	2P+0C	L	PV
18Y2SD	Reliability and Diagnostics, Experimental Methods Daniel Kytý Daniel Kytý Daniel Kytý (Gar.)	KZ	2	2P+0C	Z	PV
15Y2SR	Stylistics and Rhetorics	KZ	2	2P+0C	Z	PV
15Y2TS	Technician and Contemporary Society	KZ	2	2P+0C	L	PV
20Y2TE	Technology of Electronic Systems	KZ	2	2P+0C	Z	PV
14Y2TU	Telecommunications Systems and Multimedia	KZ	2	2P+0C	Z	PV
16Y2TT	Transportation and Building Technology and Equipment	KZ	2	2P+0C	Z	PV
23Y2TP	Creation of legal and technical regulations	KZ	2	2P+0C	L	PV
14Y2UI	Artificial Intelligence	KZ	2	2P+0C+8B	Z,L	PV
18Y2UB	Accident Biomechanics and Safety	KZ	2	2P+0C	L	PV
23Y2VZ	Leadership and Human Resource Development	KZ	2	2P+0C	L	PV
18Y2VC	Computational Mechanics in Transportation	KZ	2	2P+0C	L	PV
23Y2VR	Cope with Risks in Engineering Branches	KZ	2	2P+0C		PV
15Y2ZA	Basic Principles of English Academic Writing and Abstract in English Dana Boušová Dana Boušová (Gar.)	KZ	2	2P+0C	Z	PV
12Y2ZK	Traffic Calming Zuzana arská Zuzana arská (Gar.)	KZ	2	2P+0C	Z	PV
23Y2ZM	Intelligence Means and Methods	KZ	2	2P+0C	Z	PV

Characteristics of the courses of this group of Study Plan: Code=Y2-NP-LA-23/24 Name=Comp. Sel. Courses Master Full-Time LA from 2023/24

2023/24			
00Y2XN	Active participation in a scientific project, workshop, short-term trip abroad	KZ	2
17Y2AM	Application of Marketing Tools in Transportation	KZ	2
Application of mark	ceting principles in transport issues, marketing tools suitable for transport, case studies of the use of marketing in the sphero	ere of public passenger tran	nsport.
12Y2BM	Safety on The Local Roads	KZ	2
Classification of roa	ad accidents rates, social looses. Collision points, diagrams. Tools and methods for safer road transportation. Crossroads from	m the point of view of safety	. Psychological
right of way. Round	labouts. Pedestrian transport, cyclists. Traffic lights coordination. Transport control and regulation.		
23Y2BP	Security Class	KZ	2
The most prevalen	t topics include data management, data and text mining applications, terrorism informatics, deception and intent detection	, terrorist and criminal soci	al network
analysis, crime and	alysis, cyber-infrastructure protection, transportation infrastructure security, and information assurance, among others.		
21Y2BS	Unmanned aircraft systems 2	KZ	2
Modern trends in u	nmanned aircraft development. Use of unmanned aircraft. Managerial activities related to the operation of unmanned aircraft	t. Flights beyond the applica	able legislation.
14Y2C1	CATIA I	KZ	2
Fundaments of wo	rking with CATIA, making basic parts and bodies. Making 2D sketches, geometric stucture, parametric linking, making ada	aptive models from 2D sket	ches. Import
and export of made	e parts and bodies. Making assemble and visualization.		
14Y2C2	CATIA II	KZ	2
Extension of basic	course. Modeling compound bodies. Possibility of enumeration, comunications with other systems. Surface x solid bodies.	Kinematic mechanism. Pro	oject making
and project cooper	ation. Outputs of projects.		
14Y2CS	Sensitivity of Systems	KZ	2
Design of systems	with defined reliability. The impact of changing parameters and subsystems within a system. System sensitivity computing	, definition of sensitivity fur	nctions and
matrices and their	usability in system design.		
21Y2CR	CRM	KZ	2
Introduction to CRI	M. Analysis of air accidents. Human factor. Error. Historical development of CRM. Health and fitness. Stress and its effect o	on the human body. Fatigue	Sleep &
Vigilance. Informat	ion Processing. Situational Awareness. Workload Management. Decision Making. Communication. Leadership & Decision Making. Communication & Decision Making. Communication & Decision	n Behaviour. Automation.	
12Y2DU	Transport in the Context of Sustainability	KZ	2
Definitions of susta	inable transport, historical context, development in our country and in the world. Sustainable development and sustainable	transport. Demand for trans	sport. Induction
of transport. Exam	oles of sustainable transport. Biofuels. Electromobility. New trends in transport. Practical examples.		
15Y2DN	Transportation Psychology in German Speaking Countries	KZ	2
Introduction into br	oader view of traffic problems with regard to the work with texts (Physics for drivers, abusing alcohol during driving, exhau	stion, getting of driving lice	ence, children
in traffic, traffic acc	ident, traffic psychology in the internet etc.)		

18Y2DC	Dynamics of Transport Routes and Vehicles	KZ	2
	ations of more mass systems. Analysis of the forces acting between the vehicle and transport route. Creation of dynamic mode th a finite number of degrees of freedom. Methods of stiffness constants and pliability constants. Fundamentals of vibration of b		-
=	in a little humber of degrees of freedom. Methods of stiffless constants and phability constants. I difidamentals of vibration of b intal methods in dynamics.	nages. Citteria ioi	the authosibility
18Y2EM	Electron microscopy	KZ	2
	tron microscopy, construction, control and maintenance of SEM, sample preparation, signal detection, types of detectors and		
	of results and automation of data processing, energy dispersive X-ray microanalysis and other analytical methods in electror ctor, practical examples of ED microanalysis on samples.	i microscopy. Eval	uation of data
16Y2EE	Emissions and Ergonomics of Vehicles	KZ	2
	my of vehicles and the influence on man and nature. National and international law related to the hygiene. Noise and vibration:		
• •	f measuring, prevention, elimination. Exhausts - creation, measurement, reduction, non-regular fuels and drives. Ergonomy - sit	tting, standing, cor	ntrol, operational
17Y2FM	ing, ventilation, air-conditioning, filtration, tiredom. Financing in Urban Mass Transportation	KZ	2
	ppment in Prague and other cities in the world. Building and operation of public tram, bus, and trolleybus networks. Undergrou	1	
• •	opment in small towns. Particularities of investment and operation financing of individual UMT types. Historic and present mo	dels of UMT finan	cing. Transport
	ssengers. Tourism & DMT. UMT typology & DMT. UMT. UMT typology & DMT. UMT. UMT. UMT. UMT. UMT. UMT. UMT. U	KZ	2
21Y2FM Theories of corporate f	Aviation Company Financial Management inance - financial statements, budget, forecast. Financial resources - long-term financi	1	
<u>-</u>	s, loans, leasing, capital. Financial and economic analysis of the company - structure and content.		,
23Y2FB	Physics for Security Branches	KZ	2
Grounds of physics of s dengineering branches	substances and phenomena at extreme conditions. Grounds of rheology. Physics of Earth's interior. Geophysics. Physics of a	tmosphere. Applic	ations in
18Y2FZ	Physical foundation of materials' properties	KZ	2
	e defects influence on properties of materials, stiffness, plasticity, strength, fracture, fatigue, creep, corrosion, effects of enviro	1 1	_
behavior are the main of	'		_
15Y2HS	Road Transport History In the Ancient Age, corridors of main mediveal pathways. Development of road traffic in the modern period, acceleration of ro	KZ	2 Ionmont during
	in the Ancient Age, comdons of main mediveal pathways. Development of road trainc in the modern period, acceleration of ro Development of road layout, geometric and construction layers. Beginning of modern road civil engineering. Development of		
	ctions, bridges and traffic control, development of road signs.		•
16Y2HP	Vehicle Hygiene	KZ	2
-	ny of vehicles and the influence on man and nature. National and international law related to the hygiene. Noise and vibration: f measuring, prevention, elimination. Exhausts - creation, measurement, reduction, non-regular fuels and drives. Ergonomy - sit		
	ing, ventilation, air-conditioning, filtration, tiredom.	iling, standing, cor	ilioi, operational
14Y2IS	Intelligent Systems in Postal Services	KZ	2
	systems in the postal services (ITIS, and POST, T + T, PS, KMP, DS), application of information technology in the processing	-	-
postal network, optimiz desk.	ing logistics processes in the post. The appreciation of the real implementation of the Czech post in operation both in lectures are	nd in the framewor	k of the practical
12Y2IS	Urban Networks	KZ	2
	e position of UN as public and technical infrastructure / utillities, metodology of the UN master planning, of UN design, UN co		
	cal standards of UN, trenchless technologies for UN).		•
14Y2JM	One-Chip Controllers chitecture, embedded peripherals (counters, timers, converters, ports) and their utilisation. Practical tasks are programmed w	KZ /	2 chins
15Y2JH	Job Hunting in English	KZ	2
	practical guide to applying for a job in English. The interview process is mapped out, with the course including skills practise f	1	
	ob-hunting in English. Students will also be introduced to the English vocabulary and phraseology necessary for a successful		
14Y2KI Financial market inves	Capital Investment in Transportation and Telecommunications tment desicion making - long term goals and investment strategies, long term financing	KZ	2
16Y2KV	Car Body Design	KZ	2
	ph-load car body, bus car body, and motorcycle as a construction set. Principles of design, production, testing and operation.		
	d passive safety parts. Ergonomics, HMI, view out of the vehicle, operational extent, view behind the car. Conditioning tools, s	ignaling function.	Aerodynamics
12Y2KS	and artistic design principles. Practical training.	KZ	2
	Rail Transport in Settlements and Regions elopment of railway networks and junctions. Suburban railway servic	1 1	
	ems. Network configuration and operation of tram systems. Special thematic lectures (rail transport in selected countries / rec		•
12Y2KE	Landscape Ecology	KZ	2
	ndscape - definition, types, evolution. Landscape systems. Anthropogenic impacts on landscape. Methods using for evaluatin ations in landscape ecology. Landscape planning.	g landscape. Frac	tal geometry
21Y2LS	Air Traffic Services	KZ	2
	zech Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, A		
	vakia. ATS - Model of financing. Training Systém of Air Traffic Controllers. Future development of ATS.		
11Y2LG	Logics of Engineer's Judgement	KZ	2
-	gineer's judgement, its propositional and predicative logical base. Solutions of logical tasks through the methods of truthfulnes d. Logical basis for network design for the solution of technical tasks.	is and semantic a	naiysis charts.
23Y2MA	Risk Analysis and Management	KZ	2
Concept of risks and te	erms. Risk sources, definition of hazard, impacts and risks. Methods for identification, analysis, assessment and management	of risks. Risk eng	ineering targets
	practice. Methods, tools and techniques for risk engineering. System of systems risk. Application of strategic and system appropriately and crisis planning. Human factor, its role.	oach for benefit o	f security and
21Y2MQ	I, emergency and crisis planning. Human factor - its role.	KZ	2
	Quality Management . Pioneers in the field of quality. International quality organisations and quality promotion in the Czech Republic. Quality mana		
	Integrated management systems. Risk management in the context of the requirements of ISO standards. Sectoral quality management		
quality management of	xcellence models and corporate social responsibility Quality audits		

15Y2MS	Sociology for Managers	KZ	2
- :	o a corporation. Corporation and its organization. Corporation and its running - human role and communication. Corporation, in free market economy. Corporate directorship, work groups, adaptation, strife, different roles and positions in corporation.	its culture and so	ciai system.
and implementation of s	Marketing of Air Transport se "Marketing in air transport" is the management of activities and processes using available marketing tools and processes feales of goods and services in the aviation industry. In addition to the theoretical foundations of marketing, the lectures presented in the aviation of marketing strategies and planning.		'
	Measurement and Modeling of Traffic Noise to noise from traffic. Noise from rail transport. Noise from road traffic. Measurement and calculation of noise from rail traffic.	KZ Measurement and	2 calculation of
noise from road traffic. I	Modelling of traffic noise in the CADNA A. Urban Engineering	KZ	2
	ies storage in area, coordination engineering activities in area, arrangement of public space, concepement of public spaces.		_
variational principles. El	Finite Element Method And Its Application nulation of the Finite Element Method. Direct Stiffness Method used in structural mechanics. Evaluation of stiffness matrices ement formulation (bar and beam elements, CST, LST, quadrilateral, tetrahedral and brick elements). Natural coordinates, natation. Numerical integration. Introduction to dynamics. FEM programming.		- 1
16Y2MK Quality management me (team) design.	Quality Methods for Vehicles ethods list, customer data acquisition and analysis of customer requirements, QFD, DFM, DFA, DFS. FMEA (Failure mode eff	KZ fect analysis). Eler	2 nents of parallel
	Methods of Traffic Regulation and Prediction gnosis, traffic prognosis for large area (calculation of future traffic volumes, calculation of future traffic volumes between areas (coution to road network). Shock wave in traffic flow. Service levels and their traffic volumes. Acceleration noise.	KZ analogical and syr	2 athetic methods,
	International Organisations in Transportation ransport, UN, EEC UN, Intergovernmental organisations, EU Offices and Agencies, Conference of European Ministries of transport, Air-Rail, railways, roads, air, waterways, forwarding and postal services.	KZ transport, Internati	2 onal mode
17Y2MS	Microsimulation of Railway Operation	KZ	2
adaptation of the infrast	acteristics of simulation tools, creation of a simulation model of railway infrastructure, verification of a specific operational con ructure model and modification to the infrastructure to allow the implementation of the proposed operational concept. Stability rational concept to delays.	-	
=	Modelling and optimization on transport networks on public transport networks, scheduling vehicles, design of control plans for light-controlled intersections including green wa	KZ ve modelling, serv	2 rice systems,
modelling of advanced p	problems in distribution systems - exact, heuristic and metaheuristic principles of solving problems. CNS Systems Modelling	KZ	2
The course is designed	as a set of model tasks in the field of communication navigation and surveillance systems in aviation, addressed using mathe voted to air targets tracking, measurement-to-track association, track filtering and multisensor tracking.		
17Y2MT	Modern History for Engineering Students	KZ	2
•	the 19. century history. Geopolitical situation in Europe explained on the examples of Great Britain, Germany and Austrian E asatlantic transportation development. Imperial China: Late Qing dynasty. Selected chapters from the 20. century history: From myths.	•	
12Y2MZ	Modernization of Railway Lines and Stations	KZ	2
Track geometrical chara	AGC and AGTC Agreement. AGC and AGTC railway network. Principles of modernization (conceptual papers, definitions of bas acteristics on modernized railway lines. Superstructure and substructure on upgraded lines. Designing of railway stations. Bricks. Technical description of the tranzit corridors.		
12Y2NS	Shared Space Design	KZ	2
towns and cities. Analys	the concept of integrated use of public spaces by sharing space with all users. Active promotion of settlements and sustainab sis of implemented foreign examples, principles of zone design in the context of legal and technical requirements. Linking traff process of designing quality public spaces.	-	-
	Object Oriented Programming in Transport ation, inheritance, polymorphism, templates, retyping, stream, exceptions, repository, collections, virtual methods and classes ation system, discrete event simulation, celular automata simulation and virtual life area.	KZ s. Problem cases	2 wil be chosen
15Y2OZ Health protection in tran	Health Protection in Transportation and EU sportation in CR in the past and present. Conditions before 1989 and after, current legislature, future prospects. Harmonisati	KZ ion of legislation w	2 ith other EU
15Y2OF	principles of health protection and support in selected EU countries. Specialised French for Transportation and Telecommunications	KZ	2
Basic transportation (pu	ublic transport, railway, air, road and ship transport) and telecommunications terminology. Special focus on independent speal Optical Contactless Strain Measurements	king and writing sl	ills.
	will get theoretical knowledge and practical experience in optical strain measurement methods. Students will get experience v	l .	
DSLRs and high speed 16Y2PG	cameras for acquisition of suitable image data and with digital image correlation algorithms for displacements measurements		calculation.
	Computer Graphics and Virtual Reality d processing of bitmap and vector 2D graphics, 3D virtual scenes and algorithms used for their computerized processing. Adopt	KZ ting skills of work v	_
	reation and processing of 2D, 3D and interactive graphics, and basics of programming language VRML and graphic libraries		
22Y2PS Vehicle dynamics simul:	Traffic Accidents Computer Simulation and Analysis ation, multi body systems and vehicle active safety systems, vehicle slipping, external influence on virtual model, crash tests	KZ evaluation, single-	track vehicle,
vehicle passangers, ped	destrian, traffic accident simulation and analysis.	-	
15Y2PT The nutrition policy. Inte	Food in Transportation raction transportation and foodstuffs. The health risks. Hygienic safeguard. The practical examples from the Czech Republic	KZ and from the world	2 I. The issues of
dining cars, work trains	and other railroad equipment. Legislation.		
23Y2PD Theory of vehicle dynar	Practical vehicle dynamics inics. Multibody vehicle modeling. Modeling with IPG CarMaker. Standard and development stage experiments with road vehic	KZ	2 f experimental
-	nics. Multibody verticle modeling. Modeling with IPG Cannaker. Standard and development stage experiments with road vertices experiment evaluation.	oico. ixealizaliui1 0	i experimental

	Practical Spanish for Transportation	KZ	2
•	nication skills, training of correct written expression of formal character, basic technical vocabulary, cultural specifics of the Sp	panish speaking o	countries.
Terminology of transport		1/7	
	Law and Operation in Air Transport law. International conventions on civil aviation. International organisations and including of the Czech Republic in these orga	KZ	2
•	te administration and state supervision in matters of civil aviation, in accordance with Act No. 49/1997 Col. Facilitation. Resp	-	
	d cargo. The safe transport of dangerous goods.		04111010101
	Prediction of time series	KZ	2
1	s prediction, meaning of prediction, basics of quantitative prediction. Methods for predictive quality evaluation, descriptive stat		
prediction, prediction for	general formula of loss function. Calculation and programming environment R. Regression models, basics of linear regression	on, simple regress	sion. Multiple
regression, statistical tes	ets of linear dependence, selection of input variables.		
12Y2PV	Public transport priority	KZ	2
•	ackbone of sustainable mobility. Public transport priority (PTP) in strategic documents. PTP in the Czech Republic and abroad		٠ ا
	onship between Basics of public transport stops and stations design. PTP measures and evaluation of their operation. Econo	mic and envirom	ental effects of
PTP. The process of prep			
	Process Information Systems in Transportation	KZ	2
	I usage of transport information systems, e.g. EFC, ePurse and transport check-in systems for public transport with focus on Architecture). Inforamtion systems implementation and operations description in the Czech Republic (technical and process)		
-	C++ Programming Language lics of C++ programming language. Class, object, constructor, destructor, inheritance, abstract class, virtual methods, exception	KZ	2
	ia type implementation in C++.	ns, streams, met	lod and operator
	CAD Interface Programming	KZ	2
1	face programming techniques with the help of LIST and VBA programming languages. Possibilities of proper objects (commi	1	
	CAD systems. Programming of cooperation with other applications (databases, spread-sheets).	,,	
11Y2PM	Programming in MATLAB	KZ	2
	f modelling and simulation, description of Matlab environment and its settings, optimization and program code debugging, da	ata fitting and des	signing GUI in
Matlab.			
	Operational Aspects of Aerodromes	KZ	2
Operational aspects of a	erodromes. Location of aerodrome and orientation of runways. Requirements for apron. Capacity of airports runways and ter	minals. Operation	n under winter
conditions. Firefighting u	nits. Protection against unlawful interference. Local transport connection. Environmental protection.		
15Y2PU	Publications and Their Creation	KZ	2
	otnotes and references. Exploration of facts. Quotations. Formal document layout. Working with information databases. Typog	raphic principles.	. Typographic
	aTeX. Practical creation of simple scientific documents.		
	Realization of Transport Buildings	KZ	2
	s. Project Documentation Types. Building Code. Land Permission and Building Permission Process. Building Process. Project E		
	Control of Transport Processes bort system, decomposition, factors influencing control, quality diagnosis, methods of control, systems for decision making su	KZ	2
telematics.	our system, decomposition, factors initidenting control, quality diagnosis, methods of control, systems for decision making st	apport, risk of det	cision making,
	Seminar on Political Philosophy	KZ	2
	ical texts, view of society, state and their system of government.	11/2	2
	Network Timetabling on the Railway	KZ	2
	acity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds an		
	es of train-diagramm creating. Timetables for more service-levels on the line. Construction slot conflicts between passenger-		-
relations and waiting time	es, timetables for lines under construction.		
16Y2ST	Special Technologies in Transport and Telecommunications	KZ	2
Micro, nano and special	technologies, electric arc and its applications, plasma technologies, dipping, beam technologies, electron beams technology	in roduction and	mending of
	technologies, soldering, gluing, ultrasound, diffusion, friction and explosion technologies, micro stoves, gas.		
	Special technologies in vehicle manufacturing	KZ	2
•	technologies, electric arc and its applications, plasma technologies, dipping, beam technologies, electron beams technology	in roduction and	mending of
	technologies, soldering, gluing, ultrasound, diffusion, friction and explosion technologies, micro stoves, gas.	1.7	
	Reliability and Diagnostics, Experimental Methods	KZ	2
	n theoretical background and practical experience in the field of reliability of constructions, implementation of diagnostic proced In of residual life of structures. For this purpose, non-destructive methods of experimental mechanics (e. g. strain-gauge meas		
	ig electron microscopy, will be used.	drement, priotoei	asticimetry) and
· · · · · · · · · · · · · · · · · · ·	Stylistics and Rhetorics	KZ	2
1	ritten expression as a means of human communication. Basic information about speech, articulation, oral and written langua		
	inguage semantics, language syntactic and the pragmatic aspect. Creative thought and its oral and written expression. Practic		·
15Y2TS	Technician and Contemporary Society	KZ	2
	room and open a door for a lady, are there simple solutions, science vs belief, do we need to know or is it enough to turn on	a PC, it must be	true - it's on the
Internet and in newspape	ers, what are the sights for, interest in public affairs - a hangover from the past?		
20Y2TE	Technology of Electronic Systems	KZ	2
·	r an effective operation of electronically controlled systems. Maintaining, meassuring, optimization of safety and reliability of	complex systems	. Semiconductor
	cuits, assembly operations, interconnection and repairs technologiesusers and operators.	1	
	Telecommunications Systems and Multimedia	KZ	2
	unications namely applied in transport solutions, identification and quantification of telecommunications networks and services	pertormance bas	ed on redundant
	ng of guaranteed service quality, two generations of the handover principles.	1/7	
	Transportation and Building Technology and Equipment	KZ	2
•	ing technology and equipment. Transport of solid and mass material, soil and rock above all. Highway and underground const construction features, delivered mass calculation, economy of operation. Technics and technology of underground construction	=	
management matt	construction reduction desired interest and administration of operation, recrimined and technology of underground to the state of the construction	ono. Ioneomal Ve	andica operation

23Y2TP	Creation of legal and technical regulations	KZ	2
Creation of legislati	tion, structure of the bills of law, legal process, compatibility with the EC law, the creation of technical standards and their publi	ication, ÚNMZ (Czech	Office for
standards, metrolog	gy and testing) in Czech Republic, organizations CEN, CENELEC and ETSI, the notification process.		
14Y2UI	Artificial Intelligence	KZ	2
History of artificial i	intelligence, knowledge, its representation including frames, state space search, constraints, genetic algorithms, machine lear	rning.	
18Y2UB	Accident Biomechanics and Safety	KZ	2
Anatomy of man. M	Methods of Medical Diagnostics - RTG, CT, MRI, US. Dynamics of traumatic events. Factors influencing the severity of an accide	ent and the extent of a	traffic accident.
Injuries in road traff	ffic. Pedestrian injuries. Injury in railway and air traffic accidents. Analysis of biomechanical events in accidents and their comp	utational modeling. P	rinciples of
treatment and reha	abilitation. Protective elements and safety measures in transport.		
23Y2VZ	Leadership and Human Resource Development	KZ	2
Introduction to the	study of human resources, human resources management, corporate goals, strategies, cultural and ethical aspects. Team ma	anagement, communic	cation in teams,
	in a la branche de la companya de l		
strategy and planni	ing in human resources, ethics and corporate culture, cross-cultural differences. The labor code. Introduction into protocols.		
strategy and planni 18Y2VC	Computational Mechanics in Transportation	KZ	2
18Y2VC		1	_
18Y2VC Principle of virtual v	Computational Mechanics in Transportation	lynamics of transporta	_
18Y2VC Principle of virtual v	Computational Mechanics in Transportation work and variational principles in FEM. Bar shaped, planar and three - dimensional structures in FEM. FEM in statics and in d	lynamics of transporta	_
18Y2VC Principle of virtual v Elastic, elastoplasti 23Y2VR	Computational Mechanics in Transportation work and variational principles in FEM. Bar shaped, planar and three - dimensional structures in FEM. FEM in statics and in d tic and viscoelastic material. FEM in problems of biomechanics. Numerical analysis of structural parts with programme ANSYS	lynamics of transporta S on instances.	ational systems.
18Y2VC Principle of virtual v Elastic, elastoplasti 23Y2VR	Computational Mechanics in Transportation work and variational principles in FEM. Bar shaped, planar and three - dimensional structures in FEM. FEM in statics and in d tic and viscoelastic material. FEM in problems of biomechanics. Numerical analysis of structural parts with programme ANSYS Cope with Risks in Engineering Branches	lynamics of transporta S on instances.	ational systems.
18Y2VC Principle of virtual v Elastic, elastoplasti 23Y2VR Types of engineerin 15Y2ZA	Computational Mechanics in Transportation work and variational principles in FEM. Bar shaped, planar and three - dimensional structures in FEM. FEM in statics and in d tic and viscoelastic material. FEM in problems of biomechanics. Numerical analysis of structural parts with programme ANSYS Cope with Risks in Engineering Branches ng branches directed to risks, procedures used in risk engineering, ensuring the secured systems, ensuring the safe systems,	lynamics of transporta S on instances. KZ ensuring the safe syst KZ	tional systems. 2 ems of systems.
18Y2VC Principle of virtual v Elastic, elastoplasti 23Y2VR Types of engineerin 15Y2ZA	Computational Mechanics in Transportation work and variational principles in FEM. Bar shaped, planar and three - dimensional structures in FEM. FEM in statics and in d tic and viscoelastic material. FEM in problems of biomechanics. Numerical analysis of structural parts with programme ANSYS Cope with Risks in Engineering Branches ng branches directed to risks, procedures used in risk engineering, ensuring the secured systems, ensuring the safe systems, Basic Principles of English Academic Writing and Abstract in English phrasal bank according to students' specialisations, rhetorical analysis or texts/abstracts, drafting an abstract, providing effect	lynamics of transporta S on instances. KZ ensuring the safe syst KZ	tional systems. 2 ems of systems.
18Y2VC Principle of virtual v Elastic, elastoplasti 23Y2VR Types of engineerir 15Y2ZA Theory, creating a p	Computational Mechanics in Transportation work and variational principles in FEM. Bar shaped, planar and three - dimensional structures in FEM. FEM in statics and in d tic and viscoelastic material. FEM in problems of biomechanics. Numerical analysis of structural parts with programme ANSYS Cope with Risks in Engineering Branches ng branches directed to risks, procedures used in risk engineering, ensuring the secured systems, ensuring the safe systems, Basic Principles of English Academic Writing and Abstract in English	lynamics of transportations on instances. KZ ensuring the safe syst KZ tive feedback. KZ	2 ems of systems. 2 2 2 2 2
18Y2VC Principle of virtual v Elastic, elastoplasti 23Y2VR Types of engineerir 15Y2ZA Theory, creating a p 12Y2ZK Principles of traffic	Computational Mechanics in Transportation work and variational principles in FEM. Bar shaped, planar and three - dimensional structures in FEM. FEM in statics and in d tic and viscoelastic material. FEM in problems of biomechanics. Numerical analysis of structural parts with programme ANSYS Cope with Risks in Engineering Branches ng branches directed to risks, procedures used in risk engineering, ensuring the secured systems, ensuring the safe systems, Basic Principles of English Academic Writing and Abstract in English phrasal bank according to students' specialisations, rhetorical analysis or texts/abstracts, drafting an abstract, providing effect Traffic Calming	lynamics of transportations on instances. KZ ensuring the safe syst KZ tive feedback. KZ	2 ems of systems. 2 2 2 2 2
18Y2VC Principle of virtual v Elastic, elastoplasti 23Y2VR Types of engineerir 15Y2ZA Theory, creating a p 12Y2ZK Principles of traffic	Computational Mechanics in Transportation work and variational principles in FEM. Bar shaped, planar and three - dimensional structures in FEM. FEM in statics and in d tic and viscoelastic material. FEM in problems of biomechanics. Numerical analysis of structural parts with programme ANSYS Cope with Risks in Engineering Branches ng branches directed to risks, procedures used in risk engineering, ensuring the secured systems, ensuring the safe systems, Basic Principles of English Academic Writing and Abstract in English phrasal bank according to students' specialisations, rhetorical analysis or texts/abstracts, drafting an abstract, providing effect Traffic Calming calming. Solution of road network organization. Urban road layouts. Psychological and physical obstacles (measures of traffic	lynamics of transportations on instances. KZ ensuring the safe syst KZ tive feedback. KZ	2 ems of systems. 2 2 2 2 2
18Y2VC Principle of virtual v Elastic, elastoplasti 23Y2VR Types of engineerir 15Y2ZA Theory, creating a p 12Y2ZK Principles of traffic Traffic calming mea	Computational Mechanics in Transportation work and variational principles in FEM. Bar shaped, planar and three - dimensional structures in FEM. FEM in statics and in dictional viscoelastic material. FEM in problems of biomechanics. Numerical analysis of structural parts with programme ANSYS Cope with Risks in Engineering Branches ng branches directed to risks, procedures used in risk engineering, ensuring the secured systems, ensuring the safe systems, Basic Principles of English Academic Writing and Abstract in English phrasal bank according to students' specialisations, rhetorical analysis or texts/abstracts, drafting an abstract, providing effect Traffic Calming calming. Solution of road network organization. Urban road layouts. Psychological and physical obstacles (measures of traffic asures in crossroads. Pedestrian zones. Residential streets and zones.	lynamics of transports S on instances. KZ ensuring the safe syst KZ tive feedback. KZ c calming) and their co	2 ems of systems. 2 ems of systems. 2 embinations.
18Y2VC Principle of virtual v Elastic, elastoplasti 23Y2VR Types of engineerir 15Y2ZA Theory, creating a p 12Y2ZK Principles of traffic Traffic calming mea 23Y2ZM History and the pres	Computational Mechanics in Transportation work and variational principles in FEM. Bar shaped, planar and three - dimensional structures in FEM. FEM in statics and in dictional viscoelastic material. FEM in problems of biomechanics. Numerical analysis of structural parts with programme ANSYS Cope with Risks in Engineering Branches In granches directed to risks, procedures used in risk engineering, ensuring the secured systems, ensuring the safe systems, and Basic Principles of English Academic Writing and Abstract in English phrasal bank according to students' specialisations, rhetorical analysis or texts/abstracts, drafting an abstract, providing effect Traffic Calming Intelligence Means and Methods	lynamics of transports S on instances. KZ ensuring the safe syst KZ tive feedback. KZ c calming) and their co	2 ems of systems. 2 ems of systems. 2 embinations. 2 g and evaluating

Name of the block: Elective courses
Minimal number of credits of the block: 0

The role of the block: V

Code of the group: VP-NP-LA

Name of the group: Master Full-Time LA voluntary

Requirement credits in the group: Requirement courses in the group:

Credits in the group: 0 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
15JCZ1	Czech Language for Foreign Students 1 Irena Veselková	Z	0	0P+2C	Z	V
15JCZ2	Czech Language for Foreign Students 2	Z	0	0P+2C	L	V
15JCZ3	Czech Language for Foreign Students 3 Irena Veselková	Z		0P+2C	Z	V
15JCZ4	Czech Language for Foreign Students 4	Z		0P+2C	L	V

Characteristics of the courses of this group of Study Plan: Code=VP-NP-LA Name=Master Full-Time LA voluntary

15JCZ1	Czech Language for Foreign Students 1	Z	0			
Basic structures of Cze	Basic structures of Czech language, common communication situations, study, work, leisure time activities, introduction of myself, phonetics of Czech language, writing skills.					
15JCZ2	Czech Language for Foreign Students 2	Z	0			
Basic structures of Cze	ch language, common communication situations, study, work, leisure time activities, introduction of myself, phonetics of Czec	ch language, writir	ng skills.			
15JCZ3	Czech Language for Foreign Students 3	Z				
Language structures w	Language structures with regard to the group level. Listening and oral fluency drill. Basic terminology.					
15JCZ4	Czech Language for Foreign Students 4	Z				
Language structures w	th regard to the group level. Listening and oral fluency drill. Basic terminology.		•			

Name of the block: Jazyky

Minimal number of credits of the block: 8

The role of the block: J

Code of the group: JZ-NP-LA-20/21

Name of the group: Language Courses Master Full-Time LA from 2020/21 Requirement credits in the group: In this group you have to gain 8 credits

Requirement courses in the group: In this group you have to complete 4 courses

Credits in the group: 8

Note on the group:

15J2F1

language of management.

Language - French 1

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
15J2F1	Language - French 1 Irena Veselková	Z	2	0P+2C+10E	3 Z	J
15J2l1	Language - Italian 1 Irena Veselková	Z	2	0P+2C+10E	3 Z	J
15J2N1	Language - German 1 Eva Rezlerová, Martina Navrátilová, Jana Štikarová	Z	2	0P+2C+10E	3 Z	J
15J2R1	Language - Russian 1 Marie Michlová	Z	2	0P+2C+10E	B Z	J
15J2S1	Language - Spanish 1 Nina Hricsina Puškinová Zuzana Krinková (Gar.)	Z	2	0P+2C+10E	B Z	J
15JBF2	Language - French 2	Z	2	0P+2C+10E	B L	J
15JBI2	Language - Italian 2	Z	2	0P+2C+10E	B L	J
15JBN2	Language - German 2	Z	2	0P+2C+10E	B L	J
15JBR2	Language - Russian 2	Z	2	0P+2C+10E	B L	J
15JBS2	Language - Spanish 2 Zuzana Krinková (Gar.)	Z	2	0P+2C+10E	B L	J
15JBF3	Language - French 3 Irena Veselková	Z	2	0P+2C+10E	B Z	J
15JBI3	Language - Italian 3 Irena Veselková	Z	2	0P+2C+10E	B Z	J
15JBN3	Language - German 3 Eva Rezlerová, Martina Navrátilová, Jana Štikarová	Z	2	0P+2C+10E	B Z	J
15JBR3	Language - Russian 3 Marie Michlová	Z	2	0P+2C+10E	3 Z	J
15JBS3	Language - Spanish 3 Zuzana Krinková Zuzana Krinková (Gar.)	Z	2	0P+2C+10E	3 Z	J
15JBF4	Language - French 4	ZK	2	0P+2C+10E	B L	J
15JBI4	Language - Italian 4	ZK	2	0P+2C+10E	B L	J
15JBN4	Language - German 4 Eva Rezlerová, Martina Navrátilová, Jana Štikarová	ZK	2	0P+2C+10E	B L	J
15JBR4	Language - Russian 4	ZK	2	0P+2C+10E	B L	J
15JBS4	Language - Spanish 4 Zuzana Krinková (Gar.)	ZK	2	0P+2C+10E	B L	J

Characteristics of the courses of this group of Study Plan: Code=JZ-NP-LA-20/21 Name=Language Courses Master Full-Time LA from 2020/21

Ζ

Language	2 TIGHOTT	_	_
Grammatical Structures and Style. Se	election of conversation topics relating to transportation sciences. Developing perceptive and communicative ski	ills, feedback skill	s, summarising
technical text content, structuring pre	sentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and	technical register	rs and their use,
language of management.			
15J2I1 Language	e - Italian 1	Z	2
Grammatical Structures and Style. Se	election of conversation topics relating to transportation sciences. Developing perceptive and communicative ski	ills, feedback skill	s, summarising
technical text content, structuring pre	sentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and	technical register	rs and their use,
language of management.			
15J2N1 Language	e - German 1	Z	2
Grammatical Structures and Style. Se	election of conversation topics relating to transportation sciences. Developing perceptive and communicative ski	ills, feedback skill	s, summarising
technical text content, structuring pre	sentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and	technical register	rs and their use,
language of management.			
15J2R1 Language	e - Russian 1	Z	2
	election of conversation topics relating to transportation sciences. Developing perceptive and communicative ski	ills, feedback skill	s, summarising
technical text content, structuring pre	sentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and	technical register	rs and their use,
language of management.			
15J2S1 Language	e - Spanish 1	Z	2
Grammatical Structures and Style. Se	election of conversation topics relating to transportation sciences. Developing perceptive and communicative ski	ills, feedback skill	s, summarising
technical text content, structuring pre	sentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and	technical register	rs and their use,
language of management.			
15JBF2 Language	e - French 2	Z	2
Grammatical Structures and Style. Se	election of conversation topics relating to transportation sciences. Developing perceptive and communicative ski	ills, feedback skill	s, summarising
technical text content, structuring pre	sentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and	technical register	rs and their use,
language of management.			
15JBI2 Language	e - Italian 2	Z	2
Grammatical Structures and Style. Se	election of conversation topics relating to transportation sciences. Developing perceptive and communicative ski	ills, feedback skill	s, summarising
technical text content, structuring pre	sentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and	technical register	rs and their use,

15JBN2 Language - German 2 Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, feedback skills, summarising technical text content, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and technical registers and their use, language of management 15JBR2 Language - Russian 2 Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, feedback skills, summarising technical text content, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and technical registers and their use, language of management. 15JBS2 Language - Spanish 2 Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, feedback skills, summarising technical text content, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and technical registers and their use, language of management. 15JBF3 Language - French 3 Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation. 15JBI3 Language - Italian 3 Ζ 2 Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation. 15JBN3 Language - German 3 Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation. 15JBR3 Language - Russian 3 Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation. 15JBS3 Language - Spanish 3 Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation. Language - French 4 15JBF4 ZK. Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation. 15JBI4 Language - Italian 4 Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation. 15.JBN4 Language - German 4 7K Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation. Language - Russian 4 15JBR4 ZK 2 Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation 15JBS4 ZK Language - Spanish 4 Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge

and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation.

List of courses of this pass:

Code	Name of the course	Completion	Credits		
00Y2XN	Active participation in a scientific project, workshop, short-term trip abroad	KZ	2		
11LIP2	Linear Programming 2	Z,ZK	3		
Formulation of the ta	ask of integer programming, branch and bound method of numerical solution, problems about knapsack, travelling salesman, sets, loc	ation of stores and	post boxes,		
	tasks of scheduling, heuristics, metaheuristics - genetic algorithms, ant colony optimization.				
11STS	Stochastic Systems	Z,ZK	4		
The subject deals	The subject deals with the problems of mathematical modelling of dynamical systems, estimation od these models and their utilization for prediction. The results are illustrated on				
practical tra	practical transportation tasks. Mathematical theory roots from probability and mathematical statistics and they use the methods of the Bayesian probabilistic approach.				
11TER	Game Theory and Optimal Decision-Making	ZK	2		
Decision-making th	eory, utility theory. Explicit form games, backward induction. Normal form games. Antagonistic conflict, matrix games. Repeated gam	es, evolutionary ga	ame theory.		
Cooperative games without transferable payoffs. Cooperative games with transferable payoffs (imputation, core, Shapley value, nucleolus). Applications of game theory above all in					

economics and transportation.

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11THRO	Queuing Theory	ZK	2
	cess, definition, random distribution, and probability. Basic processes, process of revitalisation. Markov process, Markov models, Kend lels M/M/n. Non-markovian models, model M/C/n, models G/G/n. Models with continuous flow. Service net, examples of Petri net. Com		model M/M/1
11XN1		i .	2
11XN2	Master Project 1	Z Z	2
	Master Project 2		2
11XN3	Master Project 3	Z	1
11XN4	Master Project 4	Z	8
11XNDM	Master Thesis for study programme LA	Z	18
11Y2LG Logical structure	Logics of Engineer's Judgement of engineer's judgement, its propositional and predicative logical base. Solutions of logical tasks through the methods of truthfulness	KZ and semantic ana	2 Alysis charts.
44V0DM	Venn's diagram method. Logical basis for network design for the solution of technical tasks.	V7	
11Y2PM	Programming in MATLAB	KZ	2
to explain the pr	inciple of modelling and simulation, description of Matlab environment and its settings, optimization and program code debugging, dat Matlab.	a fitting and desig	gning Gui in
12XN1		Z	2
	Master Project 1		
12XN2	Master Project 2	Z	2
12XN3	Master Project 3	Z	1
12XN4	Master Project 4	Z	8
12XNDM	Master Thesis for study programme LA	Z	18
12Y2BM	Safety on The Local Roads	KZ	2
Classification of ro	and accidents rates, social looses. Collision points, diagrams. Tools and methods for safer road transportation. Crossroads from the point right of way. Roundabouts. Pedestrian transport, cyclists. Traffic lights coordination. Transport control and regulation.	of view of safety. F	Psychologica
12Y2DU	Transport in the Context of Sustainability	KZ	2
	ainable transport, historical context, development in our country and in the world. Sustainable development and sustainable transport.	1	1
40\/010	of transport. Examples of sustainable transport. Biofuels. Electromobility. New trends in transport. Practical examples.	1/7	
12Y2IS The importance a	Urban Networks Indicate the position of UN as public and technical infrastructure / utilities, metodology of the UN master planning, of UN design, UN coordinates the control of UN as public and technical infrastructure / utilities, metodology of the UN master planning, of UN design, UN coordinates the control of UN as public and technical infrastructure / utilities, metodology of the UN master planning, of UN design, UN coordinates the control of UN as public and technical infrastructure / utilities, metodology of the UN master planning, of UN design, UN coordinates the control of UN as public and technical infrastructure / utilities, metodology of the UN master planning, of UN design, UN coordinates the control of UN as public and technical infrastructure / utilities, metodology of the UN master planning, of UN design, UN coordinates the control of UN as public and technical infrastructure / utilities, metodology of the UN master planning, of UN design, UN coordinates the control of UN as public and technical infrastructure / utilities, metodology of the UN master planning, of UN design, UN coordinates the control of UN as public and technical infrastructure / utilities the control of UN as public and technical infrastructure / utilities / util	KZ nation, UN install	2 ation and UN
	operation (basic technical standards of UN, trenchless technologies for UN).		
12Y2KE Landscape ecol	Landscape Ecology logy. Landscape - definition, types, evolution. Landscape systems. Anthropogenic impacts on landscape. Methods using for evaluating	KZ landscape. Fracta	2 al geometry
	and its potential applications in landscape ecology. Landscape planning.		
12Y2KS Modernization a	Rail Transport in Settlements and Regions and development of railway infrastructure in Czech Republic. Arrangement of railway networks and junctions. Suburban railway service	KZ s Network config	2 uration and
	ration of metro systems. Network configuration and operation of tram systems. Special thematic lectures (rail transport in selected cou	_	
12Y2MD	Methods of Traffic Regulation and Prediction	KZ	2
	fic prognosis, traffic prognosis for large area (calculation of future traffic volumes, calculation of future traffic volumes between areas (and modal split, traffic distribution to road network). Shock wave in traffic flow. Service levels and their traffic volumes. Acceleration	alogical and synth	1
12Y2MH	Measurement and Modeling of Traffic Noise	KZ	2
	duction to noise from traffic. Noise from rail transport. Noise from road traffic. Measurement and calculation of noise from rail traffic. Measurement and calculation of noise from rail traffic.	I	_
40\/0\/I	noise from road traffic. Modelling of traffic noise in the CADNA A.	1/7	
12Y2MI	Urban Engineering Teaching aming on utilities storage in area, coordination engineering activities in area, arrangement of public space, concepement of public space.	KZ	2
		KZ	2
12Y2MZ	Modernization of Railway Lines and Stations sing. AGC and AGTC Agreement. AGC and AGTC railway network. Principles of modernization (conceptual papers, definitions of basic of the conceptual papers).		1
•	al characteristics on modernized railway lines. Superstructure and substructure on upgraded lines. Designing of railway stations. Bridg	• •	
40)(0)10	and realization of projects. Technical description of the tranzit corridors.	177	1 ^
12Y2NS	Shared Space Design	KZ	2
_	ents to the concept of integrated use of public spaces by sharing space with all users. Active promotion of settlements and sustainable	-	=
towns and cities.	 Analysis of implemented foreign examples, principles of zone design in the context of legal and technical requirements. Linking traffice and architecture in the process of designing quality public spaces. 	engineering, urb	an planning
12Y2PV	Public transport priority	KZ	2
Public transport as	s the backbone of sustainable mobility. Public transport priority (PTP) in strategic documents. PTP in the Czech Republic and abroad. T	ypes of PTP meas	sures. Desigr
of PTP measures	s. Relationship between Basics of public transport stops and stations design. PTP measures and evaluation of their operation. Econom	nic and enviromen	ntal effects of
	PTP. The process of preparing PTP measures.		
12Y2RD	Realization of Transport Buildings	KZ	2
Transport Building	ps Types. Project Documentation Types. Building Code. Land Permission and Building Permission Process. Building Process. Project Eco		Management
12Y2ZK	Traffic Calming	KZ	2
Principles of tra	ffic calming. Solution of road network organization. Urban road layouts. Psychological and physical obstacles (measures of traffic calm Traffic calming measures in crossroads. Pedestrian zones. Residential streets and zones.	ning) and their cor	mbinations.
14BIG	Big Data	KZ	2
	educe. Basic Principles of Big Data Management. Comparison and Classification of NoSQL Databases. Key Database Value Database.	Column Database	es. Documen
	n Databases-Basic Principles. Graph Databases-Advanced Aspects. Indexing. Interpretation. Advanced Principles Big Data Management		
	computing. Data warehouses and Big Data. Cloud computing. Data warehouses and Big Data. Other Big Data issues.		
14GISS	Geographical Information Systems	KZ	2
Construction	on of saving format of space-oriented information land-survey and cartography minimum basic tasks of spatial operations principles o	f territorial identifi	cation
14TEL	Telecommunications	KZ	3
	new trends in telecommunications systems. Economical and legal aspects of telecommunications networks design and telecommunic	ations services p	rovisioning,
•			
identification and c	quantification of hlererchical telecommunications networks and telecommunication services performance based on addopted performance	parameters, teleco	ommunication
	quantification of hlererchical telecommunications networks and telecommunication services performance based on addopted performance services typically applied within transport and specifically logistic solutions.	parameters, teleco	ommunication
14XN1		parameters, teleco	ommunication 2

14XN2	Master Project 2	Z	2
14XN3	Master Project 3	Z	1
14XN4	Master Project 4	Z	8
14XNDM	Master Thesis for study programme LA	Z	18
14Y2C1	CATIA I	KZ	2
	orking with CATIA, making basic parts and bodies. Making 2D sketches, geometric stucture, parametric linking, making adaptive moderate and export of made parts and bodies. Making assemble and visualization.	1	_
14Y2C2	CATIA II	KZ	2
	course. Modeling compound bodies. Possibility of enumeration, comunications with other systems. Surface x solid bodies. Kinemati and project cooperation. Outputs of projects.	1	1
14Y2CS	Sensitivity of Systems	KZ	2
	s with defined reliability. The impact of changing parameters and subsystems within a system. System sensitivity computing, definition matrices and their usability in system design.	1	_
14Y2IS	Intelligent Systems in Postal Services	KZ	2
	ation systems in the postal services (ITIS, and POST, T + T, PS, KMP, DS), application of information technology in the processing of mizing logistics processes in the post. The appreciation of the real implementation of the Czech post in operation both in lectures and in the contract of the Czech post in operation both in lectures and in the case of t		
	desk.	T	
14Y2JM	One-Chip Controllers rollers architecture, embedded peripherals (counters, timers, converters, ports) and their utilisation. Practical tasks are programmed	with the aid of AV	2 Richins
14Y2KI	Capital Investment in Transportation and Telecommunications	KZ	2
171210	Financial market, investment desicion making - long term goals and investment strategies, long term financing		
14Y2OP	Object Oriented Programming in Transport	KZ	2
Class, object, enc	apsulation, inheritance, polymorphism, templates, retyping, stream, exceptions, repository, collections, virtual methods and classes.	Problem cases wi	l be chosen
4.4\/0.DLL	from microscopic simulation system, discrete event simulation, celular automata simulation and virtual life area.		
14Y2PH	CAD Interface Programming Dinterface programming techniques with the help of LIST and VBA programming languages. Possibilities of proper objects (comman	KZ	erfaces an
	applications creation in CAD systems. Programming of cooperation with other applications (databases, spread-sheets).		
14Y2PI	Process Information Systems in Transportation	KZ	2
	etailed usage of transport information systems, e.g. EFC, ePurse and transport check-in systems for public transport with focus on a riented Architecture). Inforamtion systems implementation and operations description in the Czech Republic (technical and process)		-
14Y2PJ		KZ	2
	C++ Programming Language d basics of C++ programming language. Class, object, constructor, destructor, inheritance, abstract class, virtual methods, exceptions	1	_
	overloading, abstract data type implementation in C++.		
14Y2TU	Telecommunications Systems and Multimedia	KZ	2
New trends in teleco	ommunications namely applied in transport solutions, identification and quantification of telecommunications networks and services pe	rformance based	on redundar
14Y2UI	architecture, provissioning of guaranteed service quality, two generations of the handover principles.	KZ	2
	Artificial Intelligence tory of artificial intelligence, knowledge, its representation including frames, state space search, constraints, genetic algorithms, ma	1	2
15J2A1	Language - English 1	Z	2
	resentation Skills - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work	1	_
15J2F1	Language - French 1	Z	2
Grammatical Struc	tures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills ent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and te		summarising
45 1014	language of management.		
15J2I1	Language - Italian 1	Z	2
	tures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills ent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and te language of management.		-
15J2N1	Language - German 1	Z	2
	tures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills	1	1
echnical text conte	ent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and te language of management.	chnical registers a	nd their use
15J2R1	Language - Russian 1	Z	2
	tures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills	1	1
echnical text conte	ent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and te language of management.	chnical registers a	nd their use
15J2S1	Language - Spanish 1	Z	2
	tures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills ent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and te language of management.		_
	·-··-gg··	T	2
echnical text conte	Language - English 2	Z	. –
echnical text conte	resentation Skills - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work	engagement.	1
15JBA2 Pt 15JBA3	resentation Skills - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work Language - English 3 s - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work engagement.Op	engagement.	2
15JBA2 Pi 15JBA3 Presentation Skills	resentation Skills - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work Language - English 3 s - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work engagement.Op FCE, CAE.	engagement. Z otional courses for	2 certificates
15JBA2 Pr 15JBA3 Presentation Skill:	resentation Skills - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work Language - English 3 s - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work engagement.Op	engagement. Z otional courses for ZK	2 certificates

15JBF2	Language - French 2	Z	2
	ctures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills,	feedback skills, s	ummarising
chnical text conte	ent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and tecl	hnical registers a	nd their use
	language of management.		
15JBF3	Language - French 3	Z	2
Frammar and styli	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la	anguage structure	knowledg
and perceptive and	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work w features. Practice of oral and written presentation.	vith (professional)) text and it
15JBF4	Language - French 4	ZK	2
Frammar and styli	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la	anguage structure	knowledg
nd perceptive and	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work w features. Practice of oral and written presentation.	vith (professional)) text and it
15JBI2	Language - Italian 2	Z	2
	tures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, ent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and techniques are language of management.		
15JBI3	Language - Italian 3	Z	2
	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la		
	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work w features. Practice of oral and written presentation.		
15JBI4	Language - Italian 4	ZK	2
Grammar and styli	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la	anguage structure	knowledg
· ·	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work w features. Practice of oral and written presentation.		
15JBN2	Language - German 2	Z	2
	tures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, ent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and tecl language of management.		
15JBN3	Language - German 3	Z	2
=	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la		_
and perceptive and	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work w features. Practice of oral and written presentation.	vith (professional)) text and i
15JBN4	Language - German 4	ZK	2
Frammar and styli	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la	anguage structure	knowledg
and perceptive and	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work w features. Practice of oral and written presentation.	vith (professional)) text and it
15JBR2	Language - Russian 2	Z	2
Grammatical Struc	tures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills,		
echnical text conte	ent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and tech		
	ent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and techniques of management.	hnical registers a	nd their us
15JBR3 Grammar and styli	ent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and techniques of management. Language - Russian 3 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lad communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work we have the structure of the communicative skills.	hnical registers a Z anguage structure	nd their use
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15JBR3 Grammar and styli and perceptive and 15JBR4 Grammar and styli and perceptive and 15JBS2 Grammatical Struc	ent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and techniques of management. Language - Russian 3 Institute State Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lad communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work we features. Practice of oral and written presentation. Language - Russian 4 Institute Stills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work we feature skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work we features. Practice of oral and written presentation. Language - Spanish 2 Estures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills,	hnical registers a Z anguage structure vith (professional) ZK anguage structure vith (professional) Z feedback skills, s	2 e knowledg 2 text and it 2 e knowledg 0 text and it 2 e knowledg 0 text and it
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15JBR3 Grammar and styliand perceptive and 15JBR4 Grammar and styliand perceptive and 15JBS2 Grammatical Strucechnical text conte	ent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and techniques of management. Language - Russian 3 Institute State Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lad communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work we features. Practice of oral and written presentation. Language - Russian 4 Institute Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lad communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work we features. Practice of oral and written presentation. Language - Spanish 2 Itures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, ent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and techniques of management. Language - Spanish 3	Anguage structure with (professional) ZK Anguage structure with (professional) ZK Anguage structure with (professional) Z feedback skills, shical registers a	2 e knowledg 2 text and it 2 e knowledg 3 text and it 2 e knowledg 5 text and it 2 summarisir nd their us
15JBR3 Grammar and styliand perceptive and styliand perceptive and styliand perceptive and 15JBS2 Grammatical Structechnical text contermination of the styliand perceptive and styliand perceptive an	ent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and techniques of management. Language - Russian 3 Istics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lad communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work we features. Practice of oral and written presentation. Language - Russian 4 Istics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lad communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work we features. Practice of oral and written presentation. Language - Spanish 2 Stures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, and, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and techniques of management. Language - Spanish 3 Istics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lad communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work we communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work we communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work we communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work we communicative skills, vocabulary development. Basic stylistic forms.	hnical registers a Z anguage structure with (professional) ZK anguage structure with (professional) Z feedback skills, s hnical registers a Z anguage structure	2 e knowledg 2 text and it 2 e knowledg 3 text and it 2 e knowledg 4 text and it 2 c knowledg 5 text and it 2 c knowledg 6 text and it 2 c knowledg 7 text and it
15JBR3 Grammar and styliand perceptive and styliand perceptive and 15JBS2 Grammatical Structechnical text conterposition of the styliand perceptive and styliand perceptive and perceptive and styliand styliand perceptive and styliand styliand perceptive and styliand styl	Entry structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and technique of management. Language - Russian 3 Sistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lad communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work we features. Practice of oral and written presentation. Language - Russian 4 Sitics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lad communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work we features. Practice of oral and written presentation. Language - Spanish 2 Structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and technique of management. Language - Spanish 3 Sistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lad communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work we features. Practice of oral and written presentation.	hnical registers a Z anguage structure vith (professional) ZK anguage structure vith (professional) Z feedback skills, s hnical registers a Z anguage structure vith (professional)	2 e knowledg 2 text and it 2 e knowledg 3 text and it 2 summarisin nd their us 2 e knowledg 6 text and it
15JBR3 Grammar and stylicand perceptive and stylicand perceptive and 15JBS2 Grammatical Struct echnical text conternal text conternal text conternal text and perceptive and 15JBS3 Grammar and stylicand perceptive and 15JBS4	ent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and techniques of management. Language - Russian 3 sitics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lad communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work we features. Practice of oral and written presentation. Language - Russian 4 sitics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lad communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work we features. Practice of oral and written presentation. Language - Spanish 2 structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and techniques of management. Language - Spanish 3 sistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lad communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work we features. Practice of oral and written presentation. Language - Spanish 4	Anguage structure with (professional) ZK anguage structure with (professional) Z feedback skills, shinical registers a Z anguage structure with (professional)	2 e knowledg 2 text and it 2 e knowledg 3 text and it 2 summarisir nd their us 2 e knowledg 5 text and it 2 text and it
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15Y2SP	Interpreting of philosophical texts, view of society, state and their system of government.	KZ	
•			2
45V2CD	Ctulistics and Dhataries	1/7	
15Y2SR	Stylistics and Rhetorics ten expression as a means of human communication. Basic information about speech, articulation, oral and written language.	KZ	2
	guage semantics, language syntactic and the pragmatic aspect. Creative thought and its oral and written expression. Practice - o		
15Y2TS	Technician and Contemporary Society	KZ	2
Vhy to take off a hat in a r	oom and open a door for a lady, are there simple solutions, science vs belief, do we need to know or is it enough to turn on a F	PC, it must be true	- it's on the
45)/074	Internet and in newspapers, what are the sights for, interest in public affairs - a hangover from the past?	1/7	
15Y2ZA	Basic Principles of English Academic Writing and Abstract in English g a phrasal bank according to students' specialisations, rhetorical analysis or texts/abstracts, drafting an abstract, providing e	KZ	2
16XN1	Master Project 1	Z	2
16XN2	Master Project 2	 Z	2
16XN3	Master Project 3	Z	1
16XN4	Master Project 4	Z	8
16XNDM	Master Thesis for study programme LA	Z	18
16Y2EE	Emissions and Ergonomics of Vehicles	KZ	2
	of vehicles and the influence on man and nature. National and international law related to the hygiene. Noise and vibrations - se		
ohysical values, ways of me	easuring, prevention, elimination. Exhausts - creation, measurement, reduction, non-regular fuels and drives. Ergonomy - sitting. reach. Condition - heating, ventilation, air-conditioning, filtration, tiredom.	, standing, control	, operationa
16Y2HP	Vehicle Hygiene	KZ	2
	of vehicles and the influence on man and nature. National and international law related to the hygiene. Noise and vibrations - so		I
hysical values, ways of me	easuring, prevention, elimination. Exhausts - creation, measurement, reduction, non-regular fuels and drives. Ergonomy - sitting. reach. Condition - heating, ventilation, air-conditioning, filtration, tiredom.	standing, control	, operationa
16Y2KV	Car Body Design	KZ	2
	h-load car body, bus car body, and motorcycle as a construction set. Principles of design, production, testing and operation. N		1
construction. Active and p	assive safety parts. Ergonomics, HMI, view out of the vehicle, operational extent, view behind the car. Conditioning tools, sign	aling function. Aer	rodynamics
40\/01/4/	of the car body. Design and artistic design principles. Practical training.	1/7	
16Y2MK Quality management meth	Quality Methods for Vehicles Ods list, customer data acquisition and analysis of customer requirements, QFD, DFM, DFA, DFS. FMEA (Failure mode effect (team) design	KZ analysis). Elemen	2 ts of paralle
16Y2PG	(team) design. Computer Graphics and Virtual Reality	KZ	2
Principles of creation and p	rocessing of bitmap and vector 2D graphics, 3D virtual scenes and algorithms used for their computerized processing. Adopting tools for creation and processing of 2D, 3D and interactive graphics, and basics of programming language VRML and graphic li	skills of work with	professiona
16Y2ST	Special Technologies in Transport and Telecommunications	KZ	2
Micro, nano and special	technologies, electric arc and its applications, plasma technologies, dipping, beam technologies, electron beams technology in the state of the stat	n roduction and m	I
16Y2SV	snicles, laser and laser technologies, soldering, gluing, ultrasound, diffusion, friction and explosion technologies, micro stoves, Special technologies in vehicle manufacturing	gas. KZ	2
ı	technologies, electric arc and its applications, plasma technologies, dipping, beam technologies, electron beams technology i		1

16Y2TT			
-	Transportation and Building Technology and Equipment	KZ	2
	and building technology and equipment. Transport of solid and mass material, soil and rock above all. Highway and underground const		
enicies, descriptio	n and construction features, delivered mass calculation, economy of operation. Technics and technology of underground constructions management methodology (ultrasound, laser, GPS, total stations).	s. rerrestriai venio	cies operation
17AMAN	Application of Marketing Tools in Transport Industry	KZ	3
	plans. Implementation of marketing campaigns. Branding and brand promotion. Multimedia presentations. Direct marketing and relate		_
17DOCH	Travel Behavior	KZ	3
	usal effects in travel behavior research (quasi-experimental and experimental approaches). Data collection (theory of measurement; of		1
-). Analysis and interpretation of data (advanced regression models; issues of analysis and interpretation of results: effect size, practic	-	
	Analysis and interpr. of data (surveys, choice exp., panel. data).		
17DOPM	Transportation Planning and Modeling	Z,ZK	6
Basic steps and to	ols used within four step model (trip generation, trip distribution, mode choice and trip distribution). Mobility and availability in urban a	reas, land use. N	lew trends for
	transportation planning and modelling.		
17KMD	Quantitative Methods in Transport	Z,ZK	6
	s on the issue of the use of undirected graphs tree type, planar graphs and their coloring. Further distribution problems, facility location odels of integer linear programming. Besides the use of exact methods there are described simple and also more sofisticated heuristi		
17LSC	Logistics in Smart Cities	Z,ZK	6
	es in time, city and region, mobility of city residents and movement of goods, sustainability as a concept, Smart Cities, city as a syste	,	_
•	ality of life, city "smartness" assessment, legislation in Smart Cities, Smart Cities transformation, last mile logistics, e-commerce, new at		
	last mile logisitcs in cities and in regions.		
17MADS	Management of Transport Systems	KZ	2
	Functions, processes and systems of management in transport, organisational structures, strategy, social responsibility, soft s		
17MID	Managerial Information Systems in Transport	Z,ZK	3
	n building IS of modern transport company. New EU legislation on cyber security and data protection puts transport organizations in		-
course focuses on	the security of IS and possible sources of danger. The practical part deals with the process of building a new IS from the idea through	the timetable and	d the financia
	budget, the basic documents for the possible assignment of the contract.		
17PPC	Carriage Processes	ZK	3
470100	Domestic carriages, international carriages, nomenclature of goods, pricing, contracting, responsibility for damages.	7.71/	
17RKOP	Management of commercial projects in transport customer, activities, output - quality, time, money), project surroundings, location of the project (area analysis, traffic flows, authorizati	Z,ZK	3
	ject , sources of financing, customer-supplier relations, feasibility studies, sensitivity and multi-criteria analysis, financial and value an		-
structure of the pro	changes.	arysis, managem	ioni oi projeci
17RVIP	Public Project Management in Transport	Z,ZK	5
	project management in the public sector, used procedures and standards of project management, organizational structure in project ma	•	-
	project and pre-project preparation in transport and transport infrastructure and their specifics, feasibility study and CBA, project ev	-	
	project and pre-project preparation in transport and transport infrastructure and trief specifics, leasibility study and CBA, project ev	aluation.	
17TSI	Technology of Road Transport	valuation.	2
Legislative, oper	Technology of Road Transport ational, technical, logistic and safety conditions of road transport, basic transport technologies, special transport, international agree	KZ ments, requireme	ents on the
Legislative, oper	Technology of Road Transport ational, technical, logistic and safety conditions of road transport, basic transport technologies, special transport, international agrees becialization of transport, handling and loading/unloading means, maintenance, service and repairs of road vehicles, safety of road transport.	KZ ments, requireme	ents on the
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17Y2MT	Modern History for Engineering Students	KZ	2
	from the 19. century history. Geopolitical situation in Europe explained on the examples of Great Britain, Germany and Austrian Emp		
American Civil W	/ar, transatlantic transportation development. Imperial China: Late Qing dynasty. Selected chapters from the 20. century history: From	Bellé Epoque to 0	Cold War.
47\/0D7	Czechoslovak historical myths.	1/7	
17Y2RZ	Control of Transport Processes	KZ	2
medieticai bases,	, transport system, decomposition, factors influencing control, quality diagnosis, methods of control, systems for decision making sup telematics.	port, risk of decision	on making,
17Y2SJ	Network Timetabling on the Railway	KZ	2
	es. Capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds and		
	. Rules of train-diagramm creating. Timetables for more service-levels on the line. Construction slot conflicts between passenger- and		-
	relations and waiting times, timetables for lines under construction.		
18XN1	Master Project 1	Z	2
18XN2	Master Project 2	Z	2
18XN3	Master Project 3	Z	1
18XN4	Master Project 4	Z	8
18XNDM	Master Thesis for study programme LA	Z	18
18Y2DC	Dynamics of Transport Routes and Vehicles	KZ	2
Basic theory and ca	alculations of more mass systems. Analysis of the forces acting between the vehicle and transport route. Creation of dynamic models of	vehicles and trans	sport routes.
Vibration of systems	s with a finite number of degrees of freedom. Methods of stiffness constants and pliability constants. Fundamentals of vibration of bridge	es. Criteria for the	admissibility
40\/0514	of oscillation. Experimental methods in dynamics.	1/7	
18Y2EM	Electron microscopy of electron microscopy, construction, control and maintenance of SEM, sample preparation, signal detection, types of detectors and c	KZ	2
	or electron microscopy, construction, control and maintenance of SEM, sample preparation, signal detection, types of detectors and c ation of results and automation of data processing, energy dispersive X-ray microanalysis and other analytical methods in electron m		
analysis, quantino	obtained from ED detector, practical examples of ED microanalysis on samples.	iorodoopy. E variaat	ion or data
18Y2FZ	Physical foundation of materials' properties	KZ	2
	lattice defects influence on properties of materials, stiffness, plasticity, strength, fracture, fatigue, creep, corrosion, effects of environm	ا nent and loading o	n materials'
	behavior are the main discussed topics.		
18Y2MP	Finite Element Method And Its Application	KZ	2
	ical formulation of the Finite Element Method. Direct Stiffness Method used in structural mechanics. Evaluation of stiffness matrices for		
variational princ	ciples. Element formulation (bar and beam elements, CST, LST, quadrilateral, tetrahedral and brick elements). Natural coordinates, na	atural shape function	ons and
18Y2OB	isoparametric representation. Numerical integration. Introduction to dynamics. FEM programming.	KZ	2
	Optical Contactless Strain Measurements lents will get theoretical knowledge and practical experience in optical strain measurement methods. Students will get experience with		
	speed cameras for acquisition of suitable image data and with digital image correlation algorithms for displacements measurements	-	
18Y2SD	Reliability and Diagnostics, Experimental Methods	KZ	2
The course is focus	ed on theoretical background and practical experience in the field of reliability of constructions, implementation of diagnostic procedure	es for the detection	n of material
defects and determ	ination of residual life of structures. For this purpose, non-destructive methods of experimental mechanics (e. g. strain-gauge measure	ment, photoelastic	cimetry) and
	optical methods, including electron microscopy, will be used.		
18Y2UB	Accident Biomechanics and Safety	KZ	2
	ethods of Medical Diagnostics - RTG, CT, MRI, US. Dynamics of traumatic events. Factors influencing the severity of an accident and raffic. Pedestrian injuries. Injury in railway and air traffic accidents. Analysis of biomechanical events in accidents and their computation		
injuries in road ti	treatment and rehabilitation. Protective elements and safety measures in transport.	mai modeling. Prir	icipies oi
18Y2VC	Computational Mechanics in Transportation	KZ	2
	work and variational principles in FEM. Bar shaped, planar and three - dimensional structures in FEM. FEM in statics and in dynamic		
•	elastoplastic and viscoelastic material. FEM in problems of biomechanics. Numerical analysis of structural parts with programme AN	•	
20XN1	Master Project 1	Z	2
20XN2	Master Project 2	Z	2
20XN3	Master Project 3	Z	1
20XN4	Master Project 4	Z	8
20XNDM	Master Thesis for study programme LA	Z	18
20Y2PR	Prediction of time series	KZ	2
	series prediction, meaning of prediction, basics of quantitative prediction. Methods for predictive quality evaluation, descriptive statistic		MSE, naive
prediction, predict	tion for general formula of loss function. Calculation and programming environment R. Regression models, basics of linear regression	, simple regressio	n. Multiple
	regression, statistical tests of linear dependence, selection of input variables.		
20Y2TE	Technology of Electronic Systems	KZ	2
Principle technolog	ies for an effective operation of electronically controlled systems. Maintaining, meassuring, optimization of safety and reliability of com- technologies, printed circuits, assembly operations, interconnection and repairs technologiesusers and operators.	ipiex systems. Ser	miconductor
21XN1		7	2
21XN1 21XN2	Master Project 1 Master Project 2	Z 	2
21XN2 21XN3		Z	
	Master Project 3	Z	1
21XN4	Master Project 4		8
21XNDM	Master Thesis for study programme LA	Z	18
21Y2BS	Unmanned aircraft systems 2 manned aircraft development. Use of unmanned aircraft. Managerial activities related to the operation of unmanned aircraft. Flights bey	KZ	2 Legislation
21Y2CR	CRM	KZ	2
	nformation Processing. Situational Awareness. Workload Management. Decision Making. Communication. Leadership & Decision Making. Communication.		

21Y2FM	Aviation Company Financial Management	KZ	2
Theories of corp	orate finance - financial statements, budget, forecast. Financial policy of the company. Financial resources - long-term financial resou		, retained
	earnings, shares, bonds, loans, leasing, capital. Financial and economic analysis of the company - structure and content.		
21Y2LS	Air Traffic Services	KZ	2
	in Czech Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, APP	a ACC control. His	story of ATS
	at USA and Czechoslovakia. ATS - Model of financing. Training Systém of Air Traffic Controllers. Future development of ATS	3.	
21Y2MC	CNS Systems Modelling	KZ	2
	ned as a set of model tasks in the field of communication navigation and surveillance systems in aviation, addressed using mathema		nd software
	tools. A large part is devoted to air targets tracking, measurement-to-track association, track filtering and multisensor tracking	ıg.	
21Y2MK	Marketing of Air Transport	KZ	2
The content of the	course "Marketing in air transport" is the management of activities and processes using available marketing tools and processes for a	analysis, strategy d	evelopment
and implementation	n of sales of goods and services in the aviation industry. In addition to the theoretical foundations of marketing, the lectures present s	ystems of market,	competition
	and product analysis, creation of marketing strategies and planning.		
21Y2MQ	Quality Management	KZ	2
History, basic defi	nition. Pioneers in the field of quality. International quality organisations and quality promotion in the Czech Republic. Quality manage	ement system. Env	ironmental
management syste	ms. Integrated management systems. Risk management in the context of the requirements of ISO standards. Sectoral quality manager	ment systems. Com	nprehensive
	quality management, excellence models and corporate social responsibility. Quality audits.		
21Y2PL	Operational Aspects of Aerodromes	KZ	2
Operational aspec	ts of aerodromes. Location of aerodrome and orientation of runways. Requirements for apron. Capacity of airports runways and term	•	nder winter
	conditions. Firefighting units. Protection against unlawful interference. Local transport connection. Environmental protection		
21Y2PP	Law and Operation in Air Transport	KZ	2
Development of av	ation law. International conventions on civil aviation. International organisations and including of the CzechRepublic in these organis	ations. EU legislati	on and civil
aviation. Executi	on of state administration and state supervision in matters of civil aviation, in accordance with Act No. 49/1997 Col. Facilitation. Resp	onsibilities of air ca	arriers for
	passengers, luggage and cargo. The safe transport of dangerous goods.		
22XN1	Master Project 1	Z	2
22XN2	Master Project 2	Z	2
22XN3	Master Project 3	Z	1
22XN4	Master Project 4	Z	8
22XNDM	Master Thesis for study programme LA	Z	18
	•		
22Y2PS	Traffic Accidents Computer Simulation and Analysis	KZ	2
venicie dynamics	simulation, multi body systems and vehicle active safety systems, vehicle slipping, external influence on virtual model, crash tests ev	aluation, single-tra	ck venicie,
001/14	vehicle passangers, pedestrian, traffic accident simulation and analysis.	-	
23XN1	Master Project 1	Z	2
23XN2	Master Project 2	Z	2
23XN3	Master Project 3	Z	1
23XN4	Master Project 4	Z	8
23XNDM	Master Thesis for study programme LA	Z	18
23Y2BP			10
	Security Class		2
	Security Class ent topics include data management, data and text mining applications, terrorism informatics, deception and intent detection, terrorist	KZ	2
	· · · · · · · · · · · · · · · · · · ·	KZ and criminal socia	2
The most prevale	ent topics include data management, data and text mining applications, terrorism informatics, deception and intent detection, terrorist analysis, crime analysis, cyber-infrastructure protection, transportation infrastructure security, and information assurance, among	KZ and criminal socia others.	2 Il network
The most prevalence 23Y2FB	ent topics include data management, data and text mining applications, terrorism informatics, deception and intent detection, terrorist	KZ and criminal social others.	2 Il network 2
The most prevalence 23Y2FB	ent topics include data management, data and text mining applications, terrorism informatics, deception and intent detection, terrorist analysis, crime analysis, cyber-infrastructure protection, transportation infrastructure security, and information assurance, among Physics for Security Branches	KZ and criminal social others.	2 Il network 2
The most prevalence 23Y2FB Grounds of phy	ant topics include data management, data and text mining applications, terrorism informatics, deception and intent detection, terrorist analysis, crime analysis, cyber-infrastructure protection, transportation infrastructure security, and information assurance, among Physics for Security Branches sics of substances and phenomena at extreme conditions. Grounds of rheology. Physics of Earth's interior. Geophysics. Physics of a dengineering branches directed to safety.	KZ and criminal social others. KZ tmosphere. Applica	2 Il network 2 ations in
The most prevale 23Y2FB Grounds of phy 23Y2MA	ent topics include data management, data and text mining applications, terrorism informatics, deception and intent detection, terrorist analysis, crime analysis, cyber-infrastructure protection, transportation infrastructure security, and information assurance, among Physics for Security Branches sics of substances and phenomena at extreme conditions. Grounds of rheology. Physics of Earth's interior. Geophysics. Physics of a	KZ and criminal social others. KZ tmosphere. Applica	2 Il network 2 ations in
The most prevale 23Y2FB Grounds of phy 23Y2MA Concept of risks as	ent topics include data management, data and text mining applications, terrorism informatics, deception and intent detection, terrorist analysis, crime analysis, cyber-infrastructure protection, transportation infrastructure security, and information assurance, among Physics for Security Branches sics of substances and phenomena at extreme conditions. Grounds of rheology. Physics of Earth's interior. Geophysics. Physics of a dengineering branches directed to safety. Risk Analysis and Management	KZ and criminal social others. KZ tmosphere. Applications	2 Il network 2 ations in 2 ring targets
The most prevale 23Y2FB Grounds of phy 23Y2MA Concept of risks as	ent topics include data management, data and text mining applications, terrorism informatics, deception and intent detection, terrorist analysis, crime analysis, cyber-infrastructure protection, transportation infrastructure security, and information assurance, among Physics for Security Branches sics of substances and phenomena at extreme conditions. Grounds of rheology. Physics of Earth's interior. Geophysics. Physics of a dengineering branches directed to safety. Risk Analysis and Management and terms. Risk sources, definition of hazard, impacts and risks. Methods for identification, analysis, assessment and management of the safety.	KZ and criminal social others. KZ tmosphere. Applications	2 Il network 2 ations in 2 ring targets
23Y2FB Grounds of phy 23Y2MA Concept of risks an and good engines	ent topics include data management, data and text mining applications, terrorism informatics, deception and intent detection, terrorist analysis, crime analysis, cyber-infrastructure protection, transportation infrastructure security, and information assurance, among Physics for Security Branches sics of substances and phenomena at extreme conditions. Grounds of rheology. Physics of Earth's interior. Geophysics. Physics of a dengineering branches directed to safety. Risk Analysis and Management and terms. Risk sources, definition of hazard, impacts and risks. Methods for identification, analysis, assessment and management of ring practice. Methods, tools and techniques for risk engineering. System of systems risk. Application of strategic and system approadevelopment. Territorial, emergency and crisis planning. Human factor - its role.	KZ and criminal social others. KZ tmosphere. Application KZ risks. Risk enginee ach for benefit of se	2 ations in 2 ring targets accurity and
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