Recomended pass through the study plan

Name of the pass: Master Full-Time LA from 2023/24

Faculty/Institute/Others:
Department:
Pass through the study plan: Master Full-Time IS (joint degree) from 2023/24
Branch of study guranteed by the department: Welcome page
Guarantor of the study branch:
Program of study: Logistics and Transport Processes Control
Type of study: Follow-up master full-time
Note on the pass:

Coding of roles of courses and groups of courses:
P - compulsory courses of the program, PO - compulsory courses of the branch, Z - compulsory courses, S - compulsory elective courses, PV - compulsory elective courses, F - elective specialized courses, V - elective courses, T - physical training courses

Coding of ways of completion of courses (KZ/Z/ZK) and coding of semesters (Z/L):
KZ - graded assesment, Z - assesment, ZK - examination, L - summer semester, Z - winter semester

Number of semester: 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
14GISS	**Geographical Information Systems** *Vít Fábera, František Kekula, Tomáš Janata, Zuzana Purkrábková **Tomáš Janata** Tomáš Janata (Gar.)*	KZ	2	0P+2C+8B	Z	Z
15J2A1	**Language - English 1** *Jitka Heřmanová, Dana Boušová, Lenka Monková, Peter Morpuss, Markéta Vojanová, Marie Michlová, Markéta Musilová, Jan Feit, Eva Rezlerová*	Z	2	0P+2C+10B	Z	Z
11LIP2	**Linear Programming 2** *Pavla Pecherková, Ivan Nagy, Karel Ječmen **Pavla Pecherková** Ivan Nagy (Gar.)*	Z,ZK	3	2P+1C+10B	Z	Z
17LSC	**Logistics in Smart Cities** *Tomáš Horák Tomáš Horák (Gar.)*	Z,ZK	6	2P+2C+14B	Z	Z
17MADS	**Management of Transport Systems** *Roman Štěrba Roman Štěrba (Gar.)*	KZ	2	2P+0C+8B	Z	Z
17TSI	**Technology of Road Transport** *Michal Drábek, Vít Janoš, Rudolf Vávra, Daniel Drnec Michal Drábek (Gar.)*	KZ	2	2P+0C+8B	Z	ZP
17TZND	**Technology of Railway Transport** *Michal Drábek, Vít Janoš, Zdeněk Michl, Rudolf Vávra, Daniel Drnec Vít Janoš (Gar.)*	Z,ZK	4	2P+2C	Z	Z
11TER	**Game Theory and Optimal Decision-Making** *Magdalena Hykšová **Magdalena Hykšová** Magdalena Hykšová (Gar.)*	ZK	2	2P+0C+8B	Z	Z
17TZOR	**Inventory, Replacement and Scheduling Theory** *Dušan Teichmann Dušan Teichmann (Gar.)*	Z,ZK	3	2P+1C	Z	Z
15JCZ1	**Czech Language for Foreign Students 1** *Irena Veselková*	Z	0	0P+2C	Z	Z
X2-NP-LA-20/21	**Projekty Mgr. prezenční LA od 2020/21** *11XN1,12XN1,..... (see the list of groups below)*	Min. cours. 4 Max. cours. 4	Min/Max 13/13			ZP
JZ-NP-LA-20/21	**Jazyky Mgr. prezenční LA od 2020/21** *15J2F1,15J2I1,..... (see the list of groups below)*	Min. cours. 4 Max. cours. 4	Min/Max 8/8			J

Number of semester: 2

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
14BIG	**Big Data** *Jana Kaliková, Jan Krčál **Jana Kaliková** Jana Kaliková (Gar.)*	KZ	2	0P+2C+8B	L	Z

17DOCH	**Travel Behavior** *Vít Janoš, Milan Kříž Vít Janoš (Gar.)*	KZ	3	3P+0C+10B	L	Z
15JBA2	**Language - English 2** *Jitka Heřmanová, Dana Boušová, Lenka Monková, Peter Morpuss, Markéta Vojanová, Marie Michlová, Markéta Musilová, Jan Feit, Eva Rezlerová, ...*	Z	2	0P+2C+10B	L	Z
17KMD	**Quantitative Methods in Transport**	Z,ZK	6	2P+2C	L	Z
17MID	**Managerial Information Systems in Transport** *Václav Baroch Václav Baroch (Gar.)*	Z,ZK	3	2P+1C+10B	L	Z
17RKOP	**Management of commercial projects in transport** *Alexandra Dvořáčková, Petra Skolilová **Petra Skolilová** Petra Skolilová (Gar.)*	Z,ZK	3	2P+1C+10B	L	ZP
14TEL	**Telecommunications** *Tomáš Zelinka, Radek Holý, Zdeněk Lokaj, Martin Šrotýř **Tomáš Zelinka** Tomáš Zelinka (Gar.)*	KZ	3	2P+1C+10B	L	Z
11THRO	**Queuing Theory** *Šárka Voráčová **Šárka Voráčová** Šárka Voráčová (Gar.)*	ZK	2	2P+0C+8B	L	Z
15JCZ2	**Czech Language for Foreign Students 2** *Irena Veselková*	Z	0	0P+2C	L	Z
X2-NP-LA-20/21	**Projekty Mgr. prezenční LA od 2020/21** *11XN1,12XN1,..... (see the list of groups below)*	Min. cours. 4 Max. cours. 4	Min/Max 13/13			ZP
JZ-NP-LA-20/21	**Jazyky Mgr. prezenční LA od 2020/21** *15J2F1,15J2I1,..... (see the list of groups below)*	Min. cours. 4 Max. cours. 4	Min/Max 8/8			J
Y2-NP-LA-23/24	**PVP-B Mgr. prezenční LA od 2023/24** *00Y2XN,17Y2AM,..... (see the list of groups below)*	Min. cours. 3 Max. cours. 3	Min/Max 6/6			PV

Number of semester: 3

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
17AMAN	**Application of Marketing Tools in Transport Industry** *Petra Skolilová Petra Skolilová (Gar.)*	KZ	3	2P+0C	Z	Z
17DOPM	**Transportation Planning and Modeling** *Milan Kříž*	Z,ZK	6	2P+2C	Z	Z
15JBA3	**Language - English 3** *Jitka Heřmanová, Dana Boušová, Lenka Monková, Peter Morpuss, Markéta Vojanová, Marie Michlová, Markéta Musilová, Jan Feit, Eva Rezlerová, ...*	Z	2	0P+2C+10B	Z	Z
17PPC	**Carriage Processes** *Roman Štěrba Roman Štěrba (Gar.)*	ZK	3	2P+0C	Z	ZP
17RVIP	**Public Project Management in Transport** *Alexandra Dvořáčková, Olga Mertlová, Daniel Pilát Olga Mertlová (Gar.)*	Z,ZK	5	2P+2C+14B	Z	Z
11STS	**Stochastic Systems** *Pavla Pecherková, Šárka Voráčová, Evženie Uglickich, Natálie Blahitka, Michal Matowicki **Pavla Pecherková** Šárka Voráčová (Gar.)*	Z,ZK	4	2P+2C+14B	Z	Z
15JCZ3	**Czech Language for Foreign Students 3** *Irena Veselková*	Z		0P+2C	Z	Z
X2-NP-LA-20/21	**Projekty Mgr. prezenční LA od 2020/21** *11XN1,12XN1,..... (see the list of groups below)*	Min. cours. 4 Max. cours. 4	Min/Max 13/13			ZP
JZ-NP-LA-20/21	**Jazyky Mgr. prezenční LA od 2020/21** *15J2F1,15J2I1,..... (see the list of groups below)*	Min. cours. 4 Max. cours. 4	Min/Max 8/8			J
Y2-NP-LA-23/24	**PVP-B Mgr. prezenční LA od 2023/24** *00Y2XN,17Y2AM,..... (see the list of groups below)*	Min. cours. 3 Max. cours. 3	Min/Max 6/6			PV

Number of semester: 4

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 Heřmanová, Dana Boušová, Lenka Monková, Peter Morpuss, Markéta Vojanová, Marie Michlová, Markéta Musilová, Jan Feit, Eva Rezlerová, ...*	ZK	2	0P+2C+10B	L	Z
15JCZ4	**Czech Language for Foreign Students 4** *Irena Veselková*	Z		0P+2C	L	Z
XD-NP-LA-21/22	**DP Mgr. prezenční LA od 2021/22** *11XNDM,12XNDM,..... (see the list of groups below)*	Min. cours. 1 Max. cours. 1	Min/Max 18/18			Z
X2-NP-LA-20/21	**Projekty Mgr. prezenční LA od 2020/21** *11XN1,12XN1,..... (see the list of groups below)*	Min. cours. 4 Max. cours. 4	Min/Max 13/13			ZP
JZ-NP-LA-20/21	**Jazyky Mgr. prezenční LA od 2020/21** *15J2F1,15J2I1,..... (see the list of groups below)*	Min. cours. 4 Max. cours. 4	Min/Max 8/8			J

List of groups of courses of this pass with the complete content of members of individual groups

Kód	Name of the group of courses and codes of members of this group (for specification see here or below the list of courses)	Completion	Credits	Scope	Semester	Role
JZ-NP-LA-20/21	**Jazyky Mgr. prezenční LA od 2020/21**	**Min. cours. 4 Max. cours. 4**	**Min/Max** 8/8			**J**

15J2F1	Language - French 1	15J2I1	Language - Italian 1	15J2N1	Language - German 1
15J2R1	Language - Russian 1	15J2S1	Language - Spanish 1	15JBF2	Language - French 2
15JBI2	Language - Italian 2	15JBN2	Language - German 2	15JBR2	Language - Russian 2
15JBS2	Language - Spanish 2	15JBF3	Language - French 3	15JBI3	Language - Italian 3
15JBN3	Language - German 3	15JBR3	Language - Russian 3	15JBS3	Language - Spanish 3
15JBF4	Language - French 4	15JBI4	Language - Italian 4	15JBN4	Language - German 4
15JBR4	Language - Russian 4	15JBS4	Language - Spanish 4		

X2-NP-LA-20/21	**Projekty Mgr. prezenční LA od 2020/21**			**Min. cours. 4 Max. cours. 4**	**Min/Max** 13/13		**ZP**
11XN1	Master Project 1	12XN1	Master Project 1	14XN1	Master Project 1		
15XN1	Master Project 1	16XN1	Master Project 1	17XN1	Master Project 1		
18XN1	Master Project 1	20XN1	Master Project 1	21XN1	Master Project 1		
22XN1	Master Project 1	23XN1	Master Project 1	11XN2	Master Project 2		
12XN2	Master Project 2	14XN2	Master Project 2	15XN2	Master Project 2		
16XN2	Master Project 2	17XN2	Master Project 2	18XN2	Master Project 2		
20XN2	Master Project 2	21XN2	Master Project 2	22XN2	Master Project 2		
23XN2	Master Project 2	11XN3	Master Project 3	12XN3	Master Project 3		
14XN3	Master Project 3	15XN3	Master Project 3	16XN3	Master Project 3		
17XN3	Master Project 3	18XN3	Master Project 3	20XN3	Master Project 3		
21XN3	Master Project 3	22XN3	Master Project 3	23XN3	Master Project 3		
11XN4	Master Project 4	12XN4	Master Project 4	14XN4	Master Project 4		
15XN4	Master Project 4	16XN4	Master Project 4	17XN4	Master Project 4		
18XN4	Master Project 4	20XN4	Master Project 4	21XN4	Master Project 4		
22XN4	Master Project 4	23XN4	Master Project 4				

XD-NP-LA-21/22	**DP Mgr. prezenční LA od 2021/22**			**Min. cours. 1 Max. cours. 1**	**Min/Max** 18/18		**Z**
11XNDM	Master Thesis for study programm ...	12XNDM	Master Thesis for study programm ...	14XNDM	Master Thesis for study programm ...		

15XNDM	Master Thesis for study programm ...	16XNDM	Master Thesis for study programm ...	17XNDM	Master Thesis for study programm ...
18XNDM	Master Thesis for study programm ...	20XNDM	Master Thesis for study programm ...	21XNDM	Master Thesis for study programm ...
22XNDM	Master Thesis for study programm ...	23XNDM	Master Thesis for study programm ...		

Y2-NP-LA-23/24	**PVP-B Mgr. prezenční LA od 2023/24**	**Min. cours. 3 Max. cours. 3**	**Min/Max** 6/6			**PV**

00Y2XN	Active participation in a scient ...	17Y2AM	Application of Marketing Tools i ...	12Y2BM	Safety on The Local Roads
23Y2BP	Security Class	21Y2BS	Unmanned aircraft systems 2	14Y2C1	CATIA I
14Y2C2	CATIA II	14Y2CS	Sensitivity of Systems	21Y2CR	CRM
12Y2DU	Transport in the Context of Sust ...	15Y2DN	Transportation Psychology in Ger ...	18Y2DC	Dynamics of Transport Routes and ...
18Y2EM	Electron microscopy	16Y2EE	Emissions and Ergonomics of Vehi ...	17Y2FM	Financing in Urban Mass Transpor ...
21Y2FM	Aviation Company Financial Manag ...	23Y2FB	Physics for Security Branches	18Y2FZ	Physical foundation of materials ...
15Y2HS	Road Transport History	16Y2HP	Vehicle Hygiene	14Y2IS	Intelligent Systems in Postal Se ...
12Y2IS	Urban Networks	14Y2JM	One-Chip Controllers	15Y2JH	Job Hunting in English
14Y2KI	Capital Investment in Transporta ...	16Y2KV	Car Body Design	12Y2KS	Rail Transport in Settlements an ...
12Y2KE	Landscape Ecology	21Y2LS	Air Traffic Services	11Y2LG	Logics of Engineer's Judgement
23Y2MA	Risk Analysis and Management	21Y2MQ	Quality Management	15Y2MS	Sociology for Managers
21Y2MK	Marketing of Air Transport	12Y2MH	Measurement and Modeling of Traf ...	12Y2MI	Urban Engineering
18Y2MP	Finite Element Method And Its Ap ...	16Y2MK	Quality Methods for Vehicles	12Y2MD	Methods of Traffic Regulation an ...
17Y2MO	International Organisations in T ...	17Y2MS	Microsimulation of Railway Opera ...	17Y2MD	Modelling and optimization on tr ...
21Y2MC	CNS Systems Modelling	17Y2MT	Modern History for Engineering S ...	12Y2MZ	Modernization of Railway Lines a ...
12Y2NS	Shared Space Design	14Y2OP	Object Oriented Programming in T ...	15Y2OZ	Health Protection in Transportat ...
15Y2OF	Specialised French for Transport ...	18Y2OB	Optical Contactless Strain Measu ...	16Y2PG	Computer Graphics and Virtual Re ...
22Y2PS	Traffic Accidents Computer Simul ...	15Y2PT	Food in Transportation	23Y2PD	Practical vehicle dynamics
15Y2PD	Practical Spanish for Transporta ...	21Y2PP	Law and Operation in Air Transpo ...	20Y2PR	Prediction of time series
12Y2PV	Public transport priority	14Y2PI	Process Information Systems in T ...	14Y2PJ	C++ Programming Language
14Y2PH	CAD Interface Programming	11Y2PM	Programming in MATLAB	21Y2PL	Operational Aspects of Aerodrome ...
15Y2PU	Publications and Their Creation	12Y2RD	Realization of Transport Buildin ...	17Y2RZ	Control of Transport Processes
15Y2SP	Seminar on Political Philosophy	17Y2SJ	Network Timetabling on the Railw ...	16Y2ST	Special Technologies in Transpor ...
16Y2SV	Special technologies in vehicle ...	18Y2SD	Reliability and Diagnostics, Exp ...	15Y2SR	Stylistics and Rhetorics
15Y2TS	Technician and Contemporary Soci ...	20Y2TE	Technology of Electronic Systems	14Y2TU	Telecommunications Systems and M ...
16Y2TT	Transportation and Building Tech ...	23Y2TP	Creation of legal and technical ...	14Y2UI	Artificial Intelligence
18Y2UB	Accident Biomechanics and Safety	23Y2VZ	Leadership and Human Resource De ...	18Y2VC	Computational Mechanics in Trans ...
23Y2VR	Cope with Risks in Engineering B ...	15Y2ZA	Basic Principles of English Acad ...	12Y2ZK	Traffic Calming
23Y2ZM	Intelligence Means and Methods				

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 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, heuristics, metaheuristics - genetic algorithms, ant colony optimization.			
11STS	Stochastic Systems	Z,ZK	4
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 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 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.			
11THRO	Queuing Theory	ZK	2
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.			
11XN1	Master Project 1	Z	2
11XN2	Master Project 2	Z	2
11XN3	Master Project 3	Z	1
11XN4	Master Project 4	Z	8
11XNDM	Master Thesis for study programme LA	Z	18
11Y2LG	Logics of Engineer's Judgement	KZ	2
Logical structure of engineer's judgement, its propositional and predicative logical base. Solutions of logical tasks through the methods of truthfulness and semantic analysis charts. Venn's diagram method. Logical basis for network design for the solution of technical tasks.			

11Y2PM	Programming in MATLAB	KZ	2
To explain the principle of modelling and simulation, description of Matlab environment and its settings, optimization and program code debugging, data fitting and designing GUI in Matlab.			
12XN1	Master Project 1	Z	2
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 road accidents rates, social looses. Collision points, diagrams. Tools and methods for safer road transportation. Crossroads from the point of view of safety. Psychological right of way. Roundabouts. Pedestrian transport, cyclists. Traffic lights coordination. Transport control and regulation.			
12Y2DU	Transport in the Context of Sustainability	KZ	2
Definitions of sustainable transport, historical context, development in our country and in the world. Sustainable development and sustainable transport. Demand for transport. Induction of transport. Examples of sustainable transport. Biofuels. Electromobility. New trends in transport. Practical examples.			
12Y2IS	Urban Networks	KZ	2
The importance and the position of UN as public and technical infrastructure / utillities, metodology of the UN master planning, of UN design, UN coordination, UN installation and UN operation (basic technical standards of UN, trenchless technologies for UN).			
12Y2KE	Landscape Ecology	KZ	2
Landscape ecology. Landscape - definition, types, evolution. Landscape systems. Anthropogenic impacts on landscape. Methods using for evaluating landscape. Fractal geometry and its potential applications in landscape ecology. Landscape planning.			
12Y2KS	Rail Transport in Settlements and Regions	KZ	2
Modernization and development of railway infrastructure in Czech Republic. Arrangement of railway networks and junctions. Suburban railway services. Network configuration and operation of metro systems. Network configuration and operation of tram systems. Special thematic lectures (rail transport in selected countries / regions).			
12Y2MD	Methods of Traffic Regulation and Prediction	KZ	2
Basic ways of traffic prognosis, traffic prognosis for large area (calculation of future traffic volumes, calculation of future traffic volumes between areas (analogical and synthetic methods, modal split, traffic distribution to road network). Shock wave in traffic flow. Service levels and their traffic volumes. Acceleration noise.			
12Y2MH	Measurement and Modeling of Traffic Noise	KZ	2
Theoretical introduction 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 road traffic. Modelling of traffic noise in the CADNA A.			
12Y2MI	Urban Engineering	KZ	2
Teaching aming on utilities storage in area, coordination engineering activities in area, arrangement of public space, concepement of public spaces.			
12Y2MZ	Modernization of Railway Lines and Stations	KZ	2
Line speed increasing. AGC and AGTC Agreement. AGC and AGTC railway network. Principles of modernization (conceptual papers, definitions of basic concepts, individual principles). Track geometrical characteristics on modernized railway lines. Superstructure and substructure on upgraded lines. Designing of railway stations. Bridges and tunnels. Development and realization of projects. Technical description of the tranzit corridors.			
12Y2NS	Shared Space Design	KZ	2
Introducing students to the concept of integrated use of public spaces by sharing space with all users. Active promotion of settlements and sustainable mobility in the public space of towns and cities. Analysis of implemented foreign examples, principles of zone design in the context of legal and technical requirements. Linking traffic engineering, urban planning and architecture in the process of designing quality public spaces.			
12Y2PV	Public transport priority	KZ	2
Public transport as the backbone of sustainable mobility. Public transport priority (PTP) in strategic documents. PTP in the Czech Republic and abroad. Types of PTP measures. Design of PTP measures. Relationship between Basics of public transport stops and stations design. PTP measures and evaluation of their operation. Economic and enviromental effects of PTP. The process of preparing PTP measures.			
12Y2RD	Realization of Transport Buildings	KZ	2
Transport Buildings Types. Project Documentation Types. Building Code. Land Permission and Building Permission Process. Building Process. Project Economics. Project Management.			
12Y2ZK	Traffic Calming	KZ	2
Principles of traffic calming. Solution of road network organization. Urban road layouts. Psychological and physical obstacles (measures of traffic calming) and their combinations. Traffic calming measures in crossroads. Pedestrian zones. Residential streets and zones.			
14BIG	Big Data	KZ	2
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 Database. Cloud computing. Data warehouses and Big Data. Cloud computing. Data warehouses and Big Data. Other Big Data issues.			
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 territorial identification			
14TEL	Telecommunications	KZ	3
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.			
14XN1	Master Project 1	Z	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
Fundaments of working with CATIA, making basic parts and bodies. Making 2D sketches, geometric stucture, parametric linking, making adaptive models from 2D sketches. Import and export of made 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. Project making and project cooperation. 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 functions and matrices and their usability in system design.			
14Y2IS	Intelligent Systems in Postal Services	KZ	2
The use of information systems in the postal services (ITIS, and POST, T + T, PS, KMP, DS), application of information technology in the processing of mail processing nodes in the postal network, optimizing logistics processes in the post. The appreciation of the real implementation of the Czech post in operation both in lectures and in the framework of the practical desk.			
14Y2JM	One-Chip Controllers	KZ	2
One-chip controllers architecture, embedded peripherals (counters, timers, converters, ports) and their utilisation. Practical tasks are programmed with the aid of AVR chips.			
14Y2KI	Capital Investment in Transportation and Telecommunications	KZ	2
Financial market, investment desicion making - long term goals and investment strategies, long term financing			
14Y2OP	Object Oriented Programming in Transport	KZ	2
Class, object, encapsulation, inheritance, polymorphism, templates, retyping, stream, exceptions, repository, collections, virtual methods and classes. Problem cases wil be chosen from microscopic simulation system, discrete event simulation, celular automata simulation and virtual life area.			
14Y2PH	CAD Interface Programming	KZ	2
Introduction to CAD interface programming techniques with the help of LIST and VBA programming languages. Possibilities of proper objects (commands), dialogues, interfaces, and applications creation in CAD systems. Programming of cooperation with other applications (databases, spread-sheets).			
14Y2PI	Process Information Systems in Transportation	KZ	2
Introduction and detailed usage of transport information systems, e.g. EFC, ePurse and transport check-in systems for public transport with focus on architecture of this system and SOA (Service Oriented Architecture). Inforamtion systems implementation and operations description in the Czech Republic (technical and process) included lectures and visits.			
14Y2PJ	C++ Programming Language	KZ	2
OOP philosophy and basics of C++ programming language. Class, object, constructor, destructor, inheritance, abstract class, virtual methods, exceptions, streams, method and operator overloading, abstract data type implementation in C++.			
14Y2TU	Telecommunications Systems and Multimedia	KZ	2
New trends in telecommunications namely applied in transport solutions, identification and quantification of telecommunications networks and services performance based on redundant architecture, provissioning of guaranteed service quality, two generations of the handover principles.			
14Y2UI	Artificial Intelligence	KZ	2
History of artificial intelligence, knowledge, its representation including frames, state space search, constraints, genetic algorithms, machine learning.			
15J2A1	Language - English 1	Z	2
Presentation Skills - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work engagement.			
15J2F1	Language - French 1	Z	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.			
15J2I1	Language - Italian 1	Z	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.			
15J2N1	Language - German 1	Z	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.			
15J2R1	Language - Russian 1	Z	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.			
15J2S1	Language - Spanish 1	Z	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.			
15JBA2	Language - English 2	Z	2
Presentation Skills - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work engagement.			
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.			
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.			
15JBF2	Language - French 2	Z	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	Z	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.			
15JBF4	Language - French 4	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.			

15JBI2	Language - Italian 2	Z	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.			
15JBI3	Language - Italian 3	Z	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.			
15JBI4	Language - Italian 4	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.			
15JBN2	Language - German 2	Z	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.			
15JBN3	Language - German 3	Z	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.			
15JBN4	Language - German 4	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.			
15JBR2	Language - Russian 2	Z	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.			
15JBR3	Language - Russian 3	Z	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.			
15JBR4	Language - Russian 4	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.			
15JBS2	Language - Spanish 2	Z	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.			
15JBS3	Language - Spanish 3	Z	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	Language - Spanish 4	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.			
15JCZ1	Czech Language for Foreign Students 1	Z	0
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 Czech language, common communication situations, study, work, leisure time activities, introduction of myself, phonetics of Czech language, writing skills.			
15JCZ3	Czech Language for Foreign Students 3	Z	
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 with regard to the group level. Listening and oral fluency drill. Basic terminology.			
15XN1	Master Project 1	Z	2
15XN2	Master Project 2	Z	2
15XN3	Master Project 3	Z	1
15XN4	Master Project 4	Z	8
15XNDM	Master Thesis for study programme LA	Z	18
15Y2DN	Transportation Psychology in German Speaking Countries	KZ	2
Introduction into broader view of traffic problems with regard to the work with texts (Physics for drivers, abusing alcohol during driving, exhaustion, getting of driving licence, children in traffic, traffic accident, traffic psychology in the internet etc.)			
15Y2HS	Road Transport History	KZ	2
Roads and road traffic in the Ancient Age, corridors of main mediveal pathways. Development of road traffic in the modern period, acceleration of road transport development during 1st part of 20th century. Development of road layout, geometric and construction layers. Beginning of modern road civil engineering. Development of road travelling in modern period. History of road intercections, bridges and traffic control, development of road signs.			
15Y2JH	Job Hunting in English	KZ	2
The course provides a practical guide to applying for a job in English. The interview process is mapped out, with the course including skills practise for all the stages of this process, including specifics for job-hunting in English. Students will also be introduced to the English vocabulary and phraseology necessary for a successful interview.			

15Y2MS	Sociology for Managers	KZ	2
Sociological approach to a corporation. Corporation and its organization. Corporation and its running - human role and communication. Corporation, its culture and social system. Human's work position in free market economy. Corporate directorship, work groups, adaptation, strife, different roles and positions in corporation.			
15Y2OF	Specialised French for Transportation and Telecommunications	KZ	2
Basic transportation (public transport, railway, air, road and ship transport) and telecommunications terminology. Special focus on independent speaking and writing skills.			
15Y2OZ	Health Protection in Transportation and EU	KZ	2
Health protection in transportation in CR in the past and present. Conditions before 1989 and after, current legislature, future prospects. Harmonisation of legislation with other EU members. Fundamental principles of health protection and support in selected EU countries.			
15Y2PD	Practical Spanish for Transportation	KZ	2
Development of communication skills, training of correct written expression of formal character, basic technical vocabulary, cultural specifics of the Spanish speaking countries. Terminology of transport and commerce.			
15Y2PT	Food in Transportation	KZ	2
The nutrition policy. Interaction transportation and foodstuffs. The health risks. Hygienic safeguard. The practical examples from the Czech Republic and from the world. The issues of dining cars, work trains and other railroad equipment. Legislation.			
15Y2PU	Publications and Their Creation	KZ	2
Scientific texts types. Footnotes and references. Exploration of facts. Quotations. Formal document layout. Working with information databases. Typographic principles. Typographic editors - MS Word, Tex/LaTeX. Practical creation of simple scientific documents.			
15Y2SP	Seminar on Political Philosophy	KZ	2
Interpreting of philosophical texts, view of society, state and their system of government.			
15Y2SR	Stylistics and Rhetorics	KZ	2
Basic skills of oral and written expression as a means of human communication. Basic information about speech, articulation, oral and written language. Teaching to speak well-vocal organs, voice training. Language semantics, language syntactic and the pragmatic aspect. Creative thought and its oral and written expression. Practice - cultivating the skills of speech.			
15Y2TS	Technician and Contemporary Society	KZ	2
Why to take off a hat in a 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 newspapers, what are the sights for, interest in public affairs - a hangover from the past?			
15Y2ZA	Basic Principles of English Academic Writing and Abstract in English	KZ	2
Theory, creating a phrasal bank according to students' specialisations, rhetorical analysis or texts/abstracts, drafting an abstract, providing effective feedback.			
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
Emissions and ergonomy of vehicles and the influence on man and nature. National and international law related to the hygiene. Noise and vibrations - sources, creation, propagation, physical values, ways of measuring, prevention, elimination. Exhausts - creation, measurement, reduction, non-regular fuels and drives. Ergonomy - sitting, standing, control, operational reach. Condition - heating, ventilation, air-conditioning, filtration, tiredom.			
16Y2HP	Vehicle Hygiene	KZ	2
Emissions and ergonomy of vehicles and the influence on man and nature. National and international law related to the hygiene. Noise and vibrations - sources, creation, propagation, physical values, ways of measuring, prevention, elimination. Exhausts - creation, measurement, reduction, non-regular fuels and drives. Ergonomy - sitting, standing, control, operational reach. Condition - heating, ventilation, air-conditioning, filtration, tiredom.			
16Y2KV	Car Body Design	KZ	2
Personal cars body, high-load car body, bus car body, and motorcycle as a construction set. Principles of design, production, testing and operation. Materials used for car body construction. Active and passive safety parts. Ergonomics, HMI, view out of the vehicle, operational extent, view behind the car. Conditioning tools, signaling function. Aerodynamics of the car body. Design and artistic design principles. Practical training.			
16Y2MK	Quality Methods for Vehicles	KZ	2
Quality management methods list, customer data acquisition and analysis of customer requirements, QFD, DFM, DFA, DFS. FMEA (Failure mode effect analysis). Elements of parallel (team) design.			
16Y2PG	Computer Graphics and Virtual Reality	KZ	2
Principles of creation and processing of bitmap and vector 2D graphics, 3D virtual scenes and algorithms used for their computerized processing. Adopting skills of work with professional and freeware tools for creation and processing of 2D, 3D and interactive graphics, and basics of programming language VRML and graphic libraries (OpenGL).			
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 vehicles, laser and laser technologies, soldering, gluing, ultrasound, diffusion, friction and explosion technologies, micro stoves, gas.			
16Y2SV	Special technologies in vehicle manufacturing	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 vehicles, laser and laser technologies, soldering, gluing, ultrasound, diffusion, friction and explosion technologies, micro stoves, gas.			
16Y2TT	Transportation and Building Technology and Equipment	KZ	2
Transportation and building technology and equipment.Transport of solid and mass material, soil and rock above all. Highway and underground constructions. Transport surface vehicles, description and construction features, delivered mass calculation, economy of operation. Technics and technology of underground constructions. Terrestrial vehicles operation management methodology (ultrasound, laser, GPS, total stations).			
17AMAN	Application of Marketing Tools in Transport Industry	KZ	3
Strategic marketing plans. Implementation of marketing campaigns. Branding and brand promotion. Multimedia presentations. Direct marketing and related lead generation campaigns.			
17DOCH	Travel Behavior	KZ	3
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).			
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 urban areas, land use. New trends for transportation planning and modelling.			

17KMD	Quantitative Methods in Transport	Z,ZK	6
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.			
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.			
17MADS	Management of Transport Systems	KZ	2
Functions, processes and systems of management in transport, organisational structures, strategy, social responsibility, soft skills.			
17MID	Managerial Information Systems in Transport	Z,ZK	3
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.			
17PPC	Carriage Processes	ZK	3
Domestic carriages, international carriages, nomenclature of goods, pricing, contracting, responsibility for damages.			
17RKOP	Management of commercial projects in transport	Z,ZK	3
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.			
17RVIP	Public Project Management in Transport	Z,ZK	5
Basic concepts of project management in the public sector, used procedures and standards of project management, organizational structure in project management in the public sector, project and pre-project preparation in transport and transport infrastructure and their specifics, feasibility study and CBA, project evaluation.			
17TSI	Technology of Road Transport	KZ	2
Legislative, operational, technical, logistic and safety conditions of road transport, basic transport technologies, special transport, international agreements, requirements on the parameters and specialization of transport, handling and loading/unloading means, maintenance, service and repairs of road vehicles, safety of road transport and choice of optimal transport unit.			
17TZND	Technology of Railway Transport	Z,ZK	4
Track line capacity assesment, 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 - introduction, 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, parallel machine scheduling problems, flow shop scheduling problems and job shop scheduling problems.			
17XN1	Master Project 1	Z	2
17XN2	Master Project 2	Z	2
17XN3	Master Project 3	Z	1
17XN4	Master Project 4	Z	8
17XNDM	Master Thesis for study programme LA	Z	18
17Y2AM	Application of Marketing Tools in Transportation	KZ	2
Application of marketing principles in transport issues, marketing tools suitable for transport, case studies of the use of marketing in the sphere of public passenger transport.			
17Y2FM	Financing in Urban Mass Transportation	KZ	2
UMT history and development in Prague and other cities in the world. Building and operation of public tram, bus, and trolleybus networks. Underground building and operation. Other UMT types. UMT development in small towns. Particularities of investment and operation financing of individual UMT types. Historic and present models of UMT financing. Transport inspection and blind passengers. Tourism & UMT. UMT typology & choice of optimum financing.			
17Y2MD	Modelling and optimization on transport networks	KZ	2
Coordination problems on public transport networks, scheduling vehicles, design of control plans for light-controlled intersections including green wave modelling, service systems, modelling of advanced problems in distribution systems - exact, heuristic and metaheuristic principles of solving problems.			
17Y2MO	International Organisations in Transportation	KZ	2
International relations in transport, UN, EEC UN, Intergovernmental organisations, EU Offices and Agencies, Conference of European Ministries of transport, International mode organisations of public transport, Air-Rail, railways, roads, air, waterways, forwarding and postal services.			
17Y2MS	Microsimulation of Railway Operation	KZ	2
Introduction to the characteristics of simulation tools, creation of a simulation model of railway infrastructure, verification of a specific operational concept on the given infrastructure, adaptation of the infrastructure model and modification to the infrastructure to allow the implementation of the proposed operational concept. Stability tests and evaluations. Evaluation of sensitivity of the operational concept to delays.			
17Y2MT	Modern History for Engineering Students	KZ	2
Selected chapters from the 19. century history. Geopolitical situation in Europe explained on the examples of Great Britain, Germany and Austrian Empire. Rise of the United States, American Civil War, transatlantic transportation development. Imperial China: Late Qing dynasty. Selected chapters from the 20. century history: From Bellé Epoque to Cold War. Czechoslovak historical myths.			
17Y2RZ	Control of Transport Processes	KZ	2
Theoretical bases, transport system, decomposition, factors influencing control, quality diagnosis, methods of control, systems for decision making support, risk of decision making, telematics.			
17Y2SJ	Network Timetabling on the Railway	KZ	2
Timetable samples. Capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds and supplements. Rolling stock circulation planning. Rules of train-diagramm creating. Timetables for more service-levels on the line. Construction slot conflicts between passenger- and freight transport. Network line 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 calculations of more mass systems. Analysis of the forces acting between the vehicle and transport route. Creation of dynamic models of vehicles and transport routes. Vibration of systems with a finite number of degrees of freedom. Methods of stiffness constants and pliability constants. Fundamentals of vibration of bridges. Criteria for the admissibility of oscillation. Experimental methods in dynamics.			
18Y2EM	Electron microscopy	KZ	2
Basic principles of electron microscopy, construction, control and maintenance of SEM, sample preparation, signal detection, types of detectors and data evaluation using image analysis, quantification of results and automation of data processing, energy dispersive X-ray microanalysis and other analytical methods in electron microscopy. Evaluation of data obtained from ED detector, practical examples of ED microanalysis on samples.			
18Y2FZ	Physical foundation of materials' properties	KZ	2
Atomistic models, lattice defects influence on properties of materials, stiffness, plasticity, strength, fracture, fatigue, creep, corrosion, effects of environment and loading on materials' behavior are the main discussed topics.			
18Y2MP	Finite Element Method And Its Application	KZ	2
Basic mathematical formulation of the Finite Element Method. Direct Stiffness Method used in structural mechanics. Evaluation of stiffness matrices for the basic elements using variational principles. Element formulation (bar and beam elements, CST, LST, quadrilateral, tetrahedral and brick elements). Natural coordinates, natural shape functions and isoparametric representation. Numerical integration. Introduction to dynamics. FEM programming.			
18Y2OB	Optical Contactless Strain Measurements	KZ	2
In the course students will get theoretical knowledge and practical experience in optical strain measurement methods. Students will get experience with use of laboratory cameras, DSLRs and high speed cameras for acquisition of suitable image data and with digital image correlation algorithms for displacements measurements and strain fields calculation.			
18Y2SD	Reliability and Diagnostics, Experimental Methods	KZ	2
The course is focused on theoretical background and practical experience in the field of reliability of constructions, implementation of diagnostic procedures for the detection of material defects and determination of residual life of structures. For this purpose, non-destructive methods of experimental mechanics (e. g. strain-gauge measurement, photoelasticimetry) and optical methods, including electron microscopy, will be used.			
18Y2UB	Accident Biomechanics and Safety	KZ	2
Anatomy of man. Methods of Medical Diagnostics - RTG, CT, MRI, US. Dynamics of traumatic events. Factors influencing the severity of an accident and the extent of a traffic accident. Injuries in road traffic. Pedestrian injuries. Injury in railway and air traffic accidents. Analysis of biomechanical events in accidents and their computational modeling. Principles of treatment and rehabilitation. Protective elements and safety measures in transport.			
18Y2VC	Computational Mechanics in Transportation	KZ	2
Principle of virtual work and variational principles in FEM. Bar shaped, planar and three - dimensional structures in FEM. FEM in statics and in dynamics of transportational systems. Elastic, elastoplastic and viscoelastic material. FEM in problems of biomechanics. Numerical analysis of structural parts with programme ANSYS on instances.			
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
Introduction to time series prediction, meaning of prediction, basics of quantitative prediction. Methods for predictive quality evaluation, descriptive statistics, MAE, MAPE, RMSE, naive prediction, prediction for general formula of loss function. Calculation and programming environment R. Regression models, basics of linear regression, simple regression. Multiple regression, statistical tests of linear dependence, selection of input variables.			
20Y2TE	Technology of Electronic Systems	KZ	2
Principle technologies for an effective operation of electronically controlled systems. Maintaining, meassuring, optimization of safety and reliability of complex systems. Semiconductor technologies, printed circuits, assembly operations, interconnection and repairs technologiesusers and operators.			
21XN1	Master Project 1	Z	2
21XN2	Master Project 2	Z	2
21XN3	Master Project 3	Z	1
21XN4	Master Project 4	Z	8
21XNDM	Master Thesis for study programme LA	Z	18
21Y2BS	Unmanned aircraft systems 2	KZ	2
Modern trends in unmanned aircraft development. Use of unmanned aircraft. Managerial activities related to the operation of unmanned aircraft. Flights beyond the applicable legislation.			
21Y2CR	CRM	KZ	2
Introduction to CRM. Analysis of air accidents. Human factor. Error. Historical development of CRM. Health and fitness. Stress and its effect on the human body. Fatigue Sleep & Vigilance. Information Processing. Situational Awareness. Workload Management. Decision Making. Communication. Leadership & Team Behaviour. Automation.			
21Y2FM	Aviation Company Financial Management	KZ	2
Theories of corporate finance - financial statements, budget, forecast. Financial policy of the company. Financial resources - long-term financial resources, depreciation, retained earnings, shares, bonds, loans, leasing, capital. Financial and economic analysis of the company - structure and content.			
21Y2LS	Air Traffic Services	KZ	2
Airspace structure in Czech Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, APP a ACC control. History of ATS at USA and Czechoslovakia. ATS - Model of financing. Training Systém of Air Traffic Controllers. Future development of ATS.			
21Y2MC	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 mathematical approaches and software tools. A large part is devoted to air targets tracking, measurement-to-track association, track filtering and multisensor tracking.			
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 analysis, strategy development and implementation of sales of goods and services in the aviation industry. In addition to the theoretical foundations of marketing, the lectures present systems of market, competition and product analysis, creation of marketing strategies and planning.			
21Y2MQ	Quality Management	KZ	2
History, basic definition. Pioneers in the field of quality. International quality organisations and quality promotion in the Czech Republic. Quality management system. Environmental management systems. Integrated management systems. Risk management in the context of the requirements of ISO standards. Sectoral quality management systems. Comprehensive quality management, excellence models and corporate social responsibility. Quality audits.			

21Y2PL	Operational Aspects of Aerodromes	KZ	2
Operational aspects of aerodromes. Location of aerodrome and orientation of runways. Requirements for apron. Capacity of airports runways and terminals. Operation under winter conditions. Firefighting units. Protection against unlawful interference. Local transport connection. Environmental protection.			
21Y2PP	Law and Operation in Air Transport	KZ	2
Development of aviation law. International conventions on civil aviation. International organisations and including of the Czech Republic in these organisations. EU legislation and civil aviation. Execution of state administration and state supervision in matters of civil aviation, in accordance with Act No. 49/1997 Col. Facilitation. Responsibilities of air carriers 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
Vehicle dynamics simulation, multi body systems and vehicle active safety systems, vehicle slipping, external influence on virtual model, crash tests evaluation, single-track vehicle, 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	Security Class	KZ	2
The most prevalent topics include data management, data and text mining applications, terrorism informatics, deception and intent detection, terrorist and criminal social network analysis, crime analysis, cyber-infrastructure protection, transportation infrastructure security, and information assurance, among others.			
23Y2FB	Physics for Security Branches	KZ	2
Grounds of physics of substances and phenomena at extreme conditions. Grounds of rheology. Physics of Earth´s interior. Geophysics. Physics of atmosphere. Applications in dengineering branches directed to safety.			
23Y2MA	Risk Analysis and Management	KZ	2
Concept of risks and terms. Risk sources, definition of hazard, impacts and risks. Methods for identification, analysis, assessment and management of risks. Risk engineering targets and good engineering practice. Methods, tools and techniques for risk engineering. System of systems risk. Application of strategic and system approach for benefit of security and development. Territorial, emergency and crisis planning. Human factor - its role.			
23Y2PD	Practical vehicle dynamics	KZ	2
Theory of vehicle dynamics. Multibody vehicle modeling. Modeling with IPG CarMaker. Standard and development stage experiments with road vehicles. Realization of experimental measurements with passenger vehicles. Experiment evaluation.			
23Y2TP	Creation of legal and technical regulations	KZ	2
Creation of legislation, structure of the bills of law, legal process, compatibility with the EC law, the creation of technical standards and their publication, ÚNMZ (Czech Office for standards, metrology and testing) in Czech Republic, organizations CEN, CENELEC and ETSI, the notification process.			
23Y2VR	Cope with Risks in Engineering Branches	KZ	2
Types of engineering branches directed to risks, procedures used in risk engineering, ensuring the secured systems, ensuring the safe systems, ensuring the safe systems of systems.			
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 management, communication in teams, strategy and planning in human resources, ethics and corporate culture, cross-cultural differences. The labor code. Introduction into protocols.			
23Y2ZM	Intelligence Means and Methods	KZ	2
History and the present of intelligence services and their role in the modern world. How intelligence services handle with information. Methods and procedures of collecting and evaluating information. Means of intelligence services. Internal and external intelligence, military intelligence. The means and methods of state security services. Cooperation among Intelligence services within NATO, EU. The organization of the intelligence services.			

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