Study plan

Name of study plan: Master Full-Time DS from 2022/23

Faculty/Institute/Others: Department: Branch of study guaranteed by the department: Welcome page Garantor of the study branch: Program of study: Transportation Systems and Technology 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-DS-20/21 Name of the group: 1st Sem. Master Full-Time DS from 2020/21 Requirement credits in the group: In this group you have to gain 22 credits Requirement courses in the group: In this group you have to complete 7 courses Credits in the group: 22 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
12IKD	Rail Transport Infrastructure Lukáš Týfa, Ond ej Trešl	Z,ZK	5	2P+2C	Z	Z
12TKVP	Highway Engineering Materials Otakar Vacín	Z,ZK	4	2P+2C	Z	Z
18GAZ	Geomechanics and Foundation Engineering Jitka ezní ková, Linda erná Vydrová, Vít Malinovský Linda erná Vydrová Linda erná Vydrová (Gar.)	Z,ZK	3	2P+1C	Z	Z
18TIK	Theory of Engineering Structures Petr Koudelka, Petr Zlámal, Ond ej Jiroušek, Ján Kopa ka Ond ej Jiroušek Ond ej Jiroušek (Gar.)	Z,ZK	4	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+8E	Z	Z
22MSV	Modelling and Vehicle Movement Simulation Michal Frydrýn, Drahomír Schmidt Michal Frydrýn Drahomír Schmidt (Gar.)	KZ	2	0P+2C	Z	Z
15J2A1	Language - English 1 Jitka He manová, Dana Boušová, Lenka Monková, Peter Morpuss, Markéta Vojanová, Marie Michlová, Markéta Musilová, Jan Feit, Eva Rezlerová	Z	2	0P+2C+10E	Z	Z

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

12IKD	Rail Transport Infrastructure	Z,ZK	5				
Non-compensated latera	al acceleration, parameters eduction for transition curve and cant transition, curves without straight, track spacing change. Track	detailed construct	on. Substructure				
design, slab track. Tram	train. Interoperability. Noise precautions. Railway line modernization for non-tilting and tilting trains.						
12TKVP	Highway Engineering Materials	Z,ZK	4				
The theory of road cons	The theory of road construction - Material Aspects. The course emphasizes the development of road construction from the beginning of the 20th century to the present, focusing on						
materials, understandin	g the production and placing of asphalt mixtures.						
18GAZ	Geomechanics and Foundation Engineering	Z,ZK	3				
Geology (basics of pert	ographyand stratigraphy), mechanics of soils (classification of fundamental soils, mechanic properties of fundamental soils,	permeability), pla	nar foundations				
(footings, footers, plates	, depth of founding), determination of planar foundations bearing and deformation, depth foundations classification of depth	foundations eleme	ents, examples				
of their use, piles (class	ification, technology od performing).						
18TIK	Theory of Engineering Structures	Z,ZK	4				
The course builds upon	the knowledge gained in basic mechanics courses in bachelor study (especially Statics and Elasticity) in the field of mathema	tical theory of ela	sticity. Emphasis				
is placed on plane and a	axisymmetric problems, as well as on the calculation of stress and strain in plates and shells. Students are further acquainted	d with methods of	modeling the				
behavior of subsoil used in the design of line structures.							
14GISS	Geographical Information Systems	KZ	2				
Construction of saving f	ormat of space-oriented information land-survey and cartography minimum basic tasks of spatial operations principles of ter	ritorial identificatio	n				

22MSV	Modelling and Vehicle Movement Simulation	KZ	2			
Principles and posibilitie	s of simulation tools with regards to vehicle movement analysis and vehicle crash analysis. Kinematic and dynamic modelling of	vehicle/set of veh	nicles movement.			
View conditions. Propos	/iew conditions. Proposed road space passage. Processing of road 3D models.					
15J2A1	Language - English 1	Z	2			
Presentation Skills - exp	esentation Skills - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work engagement.					

Code of the group: 1S-NP-DS-V1-22/23

Name of the group: 1st Sem. Master Full-Time DS Alternative from 2022/23 Requirement credits in the group: In this group you have to gain 4 credits Requirement courses in the group: In this group you have to complete 1 course Credits in the group: 4

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
17DOPD	Transportation Planning and Modeling	Z,ZK	4	2P+2C	Z	Z
17TZND	Technology of Railway Transport Daniel Drnec, Michal Drábek, Zden k Michl, Vít Janoš, Rudolf Vávra Vít Janoš (Gar.)	Z,ZK	4	2P+2C	Z	Z

Characteristics of the courses of this group of Study Plan: Code=1S-NP-DS-V1-22/23 Name=1st Sem. Master Full-Time DS Alternative from 2022/23

17DOPD	Transportation Planning and Modeling	Z,ZK	4			
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.						
17TZND	Technology of Railway Transport	Z,ZK	4			
Track line capacity asse	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.						

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

Name of the group: 2nd Sem. Bachelor Full-Time DS from 2020/21 Requirement credits in the group: In this group you have to gain 20 credits Requirement courses in the group: In this group you have to complete 6 courses Credits in the group: 20 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
12NAPI	Design and Maintenance of Transportation Structures Otakar Vacín, Gabriela Sidorinová	Z,ZK	4	2P+2C	L	Z
12UMUP	Sustainable Mobility and Land - Use Planning Dagmar Ko árková, Václav Novotný Dagmar Ko árková (Gar.)	Z,ZK	5	2P+2C	L	Z
12ZSUZ	Railway Stations and Centres Ond ej Trešl, Martin Jacura, Tomáš Javo ík	Z,ZK	3	2P+1C	L	Z
16PDP	Principles of Vehicle Design Jaroslav Machan, Jan Leistner, Filip Kotas, David Lehet Jaroslav Machan (Gar.)	ZK	2	2P+0C+8B	L	Z
22AMMD	Measuring Methods Applied to Transportation Michal Frydrýn, Drahomír Schmidt, Tomáš Mi unek, Luboš Nouzovský, Zden k Svatý Luboš Nouzovský Tomáš Mi unek (Gar.)	KZ	4	1P+3C	L	Z
15JBA2	Language - English 2 Jitka He manová, Dana Boušová, Lenka Monková, Peter Morpuss, Markéta Vojanová, Marie Michlová, Markéta Musilová, Jan Feit, Eva Rezlerová,	Z	2	0P+2C+10B	L	Z

Characteristics of the courses of this group of Study Plan: Code=2S-NP-DS-20/21 Name=2nd Sem. Bachelor Full-Time DS from 2020/21

12NAPI	Design and Maintenance of Transportation Structures	Z,ZK	4			
Design and constructior	of cement-concrete pavements and their maintenance. Construction of bridge objects, examples and choice of bridge const	ruction materials.	Construction			
and operation of tunnels).					
12UMUP	Sustainable Mobility and Land - Use Planning	Z,ZK	5			
Spatial planning - objec	tives and tasks, development over time. Land-use planning tools. SUMP. Territorial and transport planning context. Ways of ur	ban growth in cor	nnection with			
transport. Basic principl	es of the transport solution. The impact of transport on the size and shape of the city, on the development of the street and th	e square and the	roads. Solutions			
for pedestrian and bicyc	le transport. Suburbanization and transport. City economics.					
12ZSUZ	12ZSUZ Railway Stations and Centres Z,ZK 3					
Equipment for passenge	Equipment for passenger transport. Platform construction. Access roads to platforms. Modification of railway stations according to the TSI PRM. Station heads design. Variant solutions					
of station heads for curr	f station heads for current ride. Junction stations. Crossing stations. Passenger stations. Moving stations. Public transport terminals.					

16PDP	Principles of Vehicle Design	ZK	2
Design of transportation	vehicle according to its usage and function. Marketing and user demands. Vehicle dynamics. Propulsion systems. Design pr	rocess, functional	design and
vehicle structure. Evaluation	ation of variant concepts. Design phases. Realiability, technological aspects etc.		
22AMMD	Measuring Methods Applied to Transportation	KZ	4
Geodetic location and to	echnical processing of traffic route with geodetic total station, GPS and photogrammetry, 3D scanning. Transport corridor set	ting out using geo	detic methods.
Detection and technical	processing of several vehicle dynamic characteristics using high-speed cameras and accelerometers. It is a week course and	d the terms are us	sually set in June
and September - usuall	y in examination period.		
15JBA2	Language - English 2	Z	2
Presentation Skills - exp	pert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work engagement.	•	•

Code of the group: 2S-NP-DS-V-20/21 Name of the group: 2nd Sem. Master Full-Time DS Alternative from 2020/21 Requirement credits in the group: In this group you have to gain 4 credits Requirement courses in the group: In this group you have to complete 1 course Credits in the group: 4

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
12BED	Road Safety Audit Dagmar Ko árková, Josef Kocourek, Polina Zayats, Karel Kocián, Zuzana arská Josef Kocourek (Gar.)	Z,ZK	4	2P+1C	L	Z
18TEAM	Theoretical and Applied Mechanics Jitka ezní ková, Ond ej Jiroušek, Radim Dvo ák	Z,ZK	4	2P+1C	L	Z

Characteristics of the courses of this group of Study Plan: Code=2S-NP-DS-V-20/21 Name=2nd Sem. Master Full-Time DS Alternative from 2020/21

12BED	Road Safety Audit	Z,ZK	4				
Schedules of applications of safety assessments (especially Road Safety Audit, Road Safety Inspection) during the process of preparations, and of the particular realization of the road							
network that should mir	network that should minimize traffic accident risks for all those who take part in road traffic. Application of European Directive 2008/96/EC on road safety infrastructure management.						
18TEAM	Theoretical and Applied Mechanics	Z,ZK	4				
Fundamentals of theory of plasticity. Plasticity conditions. Elastoplastic and plastic states of cross-sections and beams. Reliability and durability of structures. The stress and strain							
state around a notch. Stress intensity factor. Fracture toughness. Energy methods of linear fracture mechanics. Crack driving force.							

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

Name of the group: Thesis Master Full-Time DS 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
11XNDD	Master Thesis for study programme DS	Z	18	0P+20C	L	Z
12XNDD	Master Thesis for study programme DS Lukáš Týfa, Ond ej Trešl, Gabriela Sidorinová, Dagmar Ko árková, Václav Novotný, Martin Jacura, Tomáš Javo ík, Josef Kocourek, Polina Zayats,	Z	18	0P+20C	L	Z
14XNDD	Master Thesis for study programme DS	Z	18	0P+20C	L	Z
15XNDD	Master Thesis for study programme DS	Z	18	0P+20C	L	Z
16XNDD	Master Thesis for study programme DS P emysl Toman, Josef Svoboda, Michal Cenkner, Josef Mík	Z	18	0P+20C	L	Z
17XNDD	Master Thesis for study programme DS	Z	18	0P+20C	L	Z
18XNDD	Master Thesis for study programme DS Petr Koudelka, Tomáš Fíla	Z	18	0P+20C	L	Z
20XNDD	Master Thesis for study programme DS Ji í R ži ka, Patrik Horaž ovský	Z	18	0P+20C	L	Z
21XNDD	Master Thesis for study programme DS	Z	18	0P+20C	L	Z
22XNDD	Master Thesis for study programme DS Michal Frydrýn, Luboš Nouzovský, Zden k Svatý, Karel Kocián, Jakub Nová ek Luboš Nouzovský	Z	18	0P+20C	L	Z
23XNDD	Master Thesis for study programme DS Zden k Svatý	Z	18	0P+20C	L	Z

Characteristics of the courses of this group of Study Plan: Code=XD-NP-DS-21/22 Name=Thesis Master Full-Time DS from 2021/22 11XNDD Master Thesis for study programme DS Ζ 18

12XNDD	Master Thesis for study programme DS	Z	18
14XNDD	Master Thesis for study programme DS	Z	18
15XNDD	Master Thesis for study programme DS	Z	18
16XNDD	Master Thesis for study programme DS	Z	18
17XNDD	Master Thesis for study programme DS	Z	18
18XNDD	Master Thesis for study programme DS	Z	18
20XNDD	Master Thesis for study programme DS	Z	18
21XNDD	Master Thesis for study programme DS	Z	18
22XNDD	Master Thesis for study programme DS	Z	18
23XNDD	Master Thesis for study programme DS	Z	18

Code of the group: 3S-NP-DS-21/22

Name of the group: 3rd Sem. Bachelor Full-Time DS from 2021/22

Requirement credits in the group: In this group you have to gain 20 credits

Requirement courses in the group: In this group you have to complete 5 courses

Credits in the group: 20

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 Evženie Uglickich, Šárka Vorá ová, Natálie Blahitka, Michal Matowicki, Pavla Pecherková Pavla Pecherková Šárka Vorá ová (Gar.)	Z,ZK	4	2P+2C+14B	Z	Z
12DAZP	Transport and Environment Tomáš Javo ík, Kristýna Neubergová	Z,ZK	4	2P+1C	Z	Z
12TEAP	Theory of Road Traffic Operation Zuzana arská, Vladimír Faltus Vladimír Faltus (Gar.)	Z,ZK	7	3P+2C	Z	Z
12VRZ	High Speed Rail Transport Lukáš Týfa	KZ	3	2P+0C	Z	Z
15JBA3	Language - English 3 Jitka He manová, Dana Boušová, Lenka Monková, Peter Morpuss, Markéta Vojanová, Marie Michlová, Markéta Musilová, Jan Feit, Eva Rezlerová,	Z	2	0P+2C+10B	Z	Z

Characteristics of the courses of this group of Study Plan: Code=3S-NP-DS-21/22 Name=3rd Sem. Bachelor Full-Time DS from 2021/22

11STS	Stochastic Systems	Z,ZK	4
The subject deals with t	he problems of mathematical modelling of dynamical systems, estimation od these models and their utilization for prediction	The results are il	lustrated on
practical transportation	tasks. Mathematical theory roots from probability and mathematical statistics and they use the methods of the Bayesian prob	abilistic approach	۱.
12DAZP	Transport and Environment	Z,ZK	4
This course aims the im	pact of transport on environment. The accent is put mainly on noise and vibration, emission, barrier effect and energy deman	ds. The noise mea	asury is part and
parcel of this course.			
12TEAP	Theory of Road Traffic Operation	Z,ZK	7
Traffic parameters and t	heir measurement, acquisition and processing. Road capacity analysis. Theoretical foundations and applications of mathema	atical models - ma	acroscopic,
statistical and microsco	pic traffic models. Theory of traffic management. Traffic light signals, roundabouts, coordination, public transport priority. Urba	an and highway m	anagement.
Traffic excesses manag	ement. Road assessment and maintenance methods. Health risks assessment.		
12VRZ	High Speed Rail Transport	KZ	3
High speed railway (HS	R) transport characteristics and position in transportation system. Types / models of HSR systems, preparation of high speed	railway lines build	ling in the Czech
Republic conditions. No	n-adhesion HSR systems. City and region traffic service by HSR. HSR operating points. HSR worldwide network. HSR routin	g and traffic conc	eption. Specifics
of HSR track construction	on and layout track parameteres.		
15JBA3	Language - English 3	Z	2
Presentation Skills - exp	ert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work engagement.	Optional courses f	or certificates
FCE, CAE.			

Code of the group: 3S-NP-DS-V-21/22

Name of the group: 3rd Sem. Master Full-Time DS Alternative from 2021/22 Requirement credits in the group: In this group you have to gain 3 credits Requirement courses in the group: In this group you have to complete 1 course Credits in the group: 3

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
12IDOS	Integrated Transport Systems Petr Chmela, Martin Jareš	ZK	3	2P+0C	Z	Z
16STK	Simulation and Testing of Vehicle Body and Systems Josef Svoboda, Michal Cenkner, Petr Bouchner	ZK	3	2P+0C	Z	Z

Characteristics of the courses of this group of Study Plan: Code=3S-NP-DS-V-21/22 Name=3rd Sem. Master Full-Time DS Alternative from 2021/22

12IDOS	Integrated Transport Systems	ZK	3						
Reasons for building of integrated transport systems, principle of integration, dividing of integration methods, traffic, infrastructure, technical, organizational methods, integration of									
tariff, sales systems, inf	ormation systems, marketing of system, examples of non-integration.								
16STK	Simulation and Testing of Vehicle Body and Systems	ZK	3						
Simulation theory. Com	Simulation theory. Computing equipment for simulation. Modeling of mechanical and dynamic systems. Simulation and optimization methods. Hardware in the Loop (HIL). Simulation								
approaches for vehicle	design. Simulation of propulsion and electric systems. Strength and material analyses of dynamical phenomena for vehicles	of on-land carriag	e.						

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

Name of the group: 4th Sem. Bachelor Full-Time DS 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, Dana Boušová, Lenka Monková, Peter Morpuss, Markéta Vojanová, Marie Michlová, Markéta Musilová, Jan Feit, Eva Rezlerová,	ZK	2	0P+2C+10B	L	Z

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

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-DS-20/21

Name of the group: Research Groups Master Full-Time DS 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:

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 Jana Kuklová Jana Kuklová Jana Kuklová (Gar.)	Z	2	0P+2C+4E	s Z	ZP
12XN1	Master Project 1 Lukáš Týfa, Ond ej Trešl, Gabriela Sidorinová, Dagmar Ko árková, Václav Novotný, Martin Jacura, Tomáš Javo ík, Josef Kocourek, Polina Zayats,	Z	2	0P+2C+4E	s Z	ZP
14XN1	Master Project 1	Z	2	0P+2C+4E	Z	ZP
15XN1	Master Project 1	Z	2	0P+2C+4E	B Z	ZP
16XN1	Master Project 1 P emysl Toman, Josef Mík	Z	2	0P+2C+4E	s Z	ZP
17XN1	Master Project 1 Milan K íž, Michal Drábek, Zden k Michl, Vít Janoš, Rudolf Vávra, Václav Baroch, Alexandra Dvo á ková, Veronika Faifrová, Eliška Glaserová,	Z	2	0P+2C+4E	s Z	ZP
18XN1	Master Project 1 Daniel Kytý, Václav Rada, Nela Kr má ová	Z	2	0P+2C+4E	8 Z	ZP
20XN1	Master Project 1 Ji í R ži ka, Milan Sliacky	Z	2	0P+2C+4E	8 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, Luboš Nouzovský, Zden k Svatý, Karel Kocián, Jakub Nová ek	Z	2	0P+2C+4E	8 Z	ZP
23XN1	Master Project 1	Z	2	0P+2C+4E	Z	ZP
11XN2	Master Project 2 Jana Kuklová Jana Kuklová Jana Kuklová (Gar.)	Z	2	0P+2C+8E	B L	ZP

12XN2	Master Project 2 Lukáš Tyfa, Ond ej Trešl, Gabriela Sidorinová, Dagmar Ko árková, Václav	Z	2	0P+2C+8B	L	ZP
14XN2	Novotný, Martin Jacura, Tomáš Javo ík, Josef Kocourek, Polina Zayats, Master Project 2 Vít Fábera, Tomáš Brandejský, Mária Jánešová, Jan Zelenka	Z	2	0P+2C+8B	L	ZP
15XN2	Master Project 2	Z	2	0P+2C+8B	L	ZP
16XN2	Master Project 2 P emysl Toman, Josef Mík	Z	2	0P+2C+8B	L	ZP
17XN2	Master Project 2 Milan K íž, Michal Drábek, Zden k Michl, Vít Janoš, Rudolf Vávra, Václav Baroch, Alexandra Dvo á ková, Veronika Faifrová, Rudolf Franz Heidu, Vít Janoš (Gar.)	Z	2	0P+2C+8B	L	ZP
18XN2	Master Project 2 Petr Koudelka, Nela Kr má ová Daniel Kytý	Z	2	0P+2C+8B	L	ZP
20XN2	Master Project 2 Ji í R ži ka, Patrik Horaž ovský, Milan Sliacky Vladimír Faltus	Z	2	0P+2C+8B	L	ZP
21XN2	Master Project 2 Stanislav Kušmírek, Jakub Trýb, Jakub Kraus, Andrej Lališ, Slobodan Stoji , Terézia Pilmannová, Jakub Hospodka, Lenka Hanáková, Peter Vittek,	Z	2	0P+2C+8B	L	ZP
22XN2	Master Project 2 Michal Frydrýn, Luboš Nouzovský, Zden k Svatý, Karel Kocián, Jakub Nová ek	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 Lukáš Týfa, Ond ej Trešl, Gabriela Sidorinová, Dagmar Ko árková, Václav Novotný, Martin Jacura, Tomáš Javo ík, Josef Kocourek, Polina Zayats,	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 P emysl Toman, Josef Svoboda, Michal Cenkner, Josef Mik	Z	1	0P+4C	Z	ZP
17XN3	Master Project 3 Milan K íž, Michal Drábek, Zden k Michl, Vít Janoš, Rudolf Vávra, Václav Baroch, Alexandra Dvo á ková, Veronika Faifrová, Eliška Glaserová,	Z	1	0P+4C	Z	ZP
18XN3	Master Project 3 Tomáš Fíla, Daniel Kytý, Nela Kr má ová	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, Tornáš Mi unek, Luboš Nouzovský, Zden k Svatý, Karel Kocián	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 Lukáš Týfa, Ond ej Trešl, Gabriela Sidorinová, Dagmar Ko árková, Martin Jacura, Tomáš Javo ík, Josef Kocourek, Polina Zayats, Zuzana arská,	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 Michal Cenkner, Josef Mik	Z	8	0P+4C	L	ZP
17XN4	Master Project 4 Milan K íž, Michal Drábek, Zden k Michl, Vít Janoš, Rudolf Vávra, Václav Baroch, Alexandra Dvo á ková, Veronika Faifrová, Rudolf Franz Heidu, Václav Baroch (Gar.)	Z	8	0P+4C	L	ZP
18XN4	Master Project 4 Petr Koudelka, Tomáš Fíla	Z	8	0P+4C	L	ZP
20XN4	Master Project 4 Ji í R ži ka, Patrik Horaž ovský Patrik Horaž ovský	Z	8	0P+4C	L	ZP
21XN4	Master Project 4 Stanisłav Pleninger, Iveta Kameníková, Slobodan Stoji , Terézia Pilmannová, Vladimír Socha, Peter Vittek, Jakub Steiner, Miloš Strouhal, Ota Hajzler,	Z	8	0P+4C	L	ZP
22XN4	Master Project 4 Michal Frydrýn, Luboš Nouzovský, Zden k Svatý, Karel Kocián	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-DS-20/21 Name=Research Groups Master Full-Time DS 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-DS-22/23

Name of the group: Comp. Sel. Courses Master Full-Time DS from 2022/23 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 Tomáš Tlu ho, Michal erný Tomáš Tlu ho	KZ	2	2P+0C+8B	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+8B		PV
-	Ladislav Capoušek Transport in the Context of Sustainability					
12Y2DU	Kristýna Neubergová	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 Nela Kr má ová	KZ	2	2P+0C	L	PV
16Y2EE	Emissions and Ergonomics of Vehicles	KZ	2	2P+0C	L	PV
17Y2FM	Financing in Urban Mass Transportation Václav Baroch, Olga Mertlová, Petra Skolilová Petra Skolilová (Gar.)	KZ	2	2P+0C	Z	PV
21Y2FM	Aviation Company Financial Management Radoslav Zozu ák Radoslav Zozu ák	KZ	2	2P+0C+8B	Z	PV
23Y2FB	Physics for Security Branches	KZ	2	2P+0C	Z	PV
18Y2FZ	Physical foundation of materials' properties	KZ	2	2P+0C	L	PV
15Y2HS	Road Transport History Zuzana arská	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	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	KZ	2	2P+0C	Z	PV
12Y2KE	Landscape Ecology Dagmar Ko árková, Kristýna Neubergová	KZ	2	2P+0C	Z	PV
21Y2LS	Air Traffic Services	KZ	2	2P+0C+8B	L	PV
11Y2LG	Logics of Engineer's Judgement	KZ	2	2P+0C	L	PV
23Y2MA	Magdalena Hykšová Magdalena Hykšová Magdalena Hykšová (Gar.) Risk Analysis and Management	KZ	2	2P+0C	L	PV
21Y2MQ	Quality Management	KZ	2	2P+0C+8B	L	PV
15Y2MS	Luboš Šocha Sociology for Managers	KZ	2	2P+0C	Z	PV
21Y2MK	Martina Śmidochová Marketing of Air Transport	KZ	2	2P+0C+8B		PV
	Peter Vittek Peter Vittek					
12Y2MH	Measurement and Modeling of Traffic Noise	KZ	2	2P+0C		PV
12Y2MI	Urban Engineering Finite Element Method And Its Application	KZ	2	2P+0C		PV
18Y2MP	Ján Kopa ka, Radek Kolman	KZ	2	2P+0C	L	PV
16Y2MK	Quality Methods for Vehicles	KZ	2	2P+0C	L	PV
12Y2MD	Methods of Traffic Regulation and Prediction Zuzana arská	KZ	2	2P+0C	L	PV
17Y2MO	International Organisations in Transportation	KZ	2	2P+0C	L	PV
17Y2MS	Microsimulation of Railway Operation	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	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 Dagmar Ko árková, Miroslav Veliš	KZ	2	2P+0C	L	PV
12Y2NS	Shared Space Design Vojt ch Novotný, Karel Hájek	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	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	KZ	2	2P+0C	Z	PV

22Y2PS	Traffic Accidents Computer Simulation and Analysis	KZ	2	2P+0C	L	PV
15Y2PT	Food in Transportation Petr Musil	ΚZ	2	2P+0C	L	PV
23Y2PD	Practical vehicle dynamics	KZ	2	2P+0C	L	PV
15Y2PD	Practical Spanish for Transportation	KZ	2	2P+0C	Z	PV
21Y2PP	Law and Operation in Air Transport Radoslav Zozu ák	KZ	2	2P+0C+8B	L	PV
20Y2PR	Prediction of time series	KZ	2	2P+0C	L	PV
12Y2PV	Public transport priority Vojt ch Novotný Vojt ch Novotný (Gar.)	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 Dagmar Ko árková, Martin Höfler, Tomáš Honc	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	KZ	2	2P+0C	Z	PV
17Y2SJ	Network Timetabling on the Railway Zden k Michl, Vít Janoš, Rudolf Vávra Vít Janoš (Gar.)	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	ΚZ	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	KZ	2	2P+0C	Z	PV
12Y2ZK	Traffic Calming Zuzana arská	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-DS-22/23 Name=Comp. Sel. Courses Master Full-Time DS from 2022/23

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 marke	ting principles in transport issues, marketing tools suitable for transport, case studies of the use of marketing in the sphere	of public passenger tr	ansport.
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 t	he point of view of safe	ty. Psychological
right of way. Rounda	bouts. Pedestrian transport, cyclists. Traffic lights coordination. Transport control and regulation.		
23Y2BP	Security Class	KZ	2
The most prevalent	opics include data management, data and text mining applications, terrorism informatics, deception and intent detection, te	errorist and criminal so	cial network
analysis, crime analy	vsis, cyber-infrastructure protection, transportation infrastructure security, and information assurance, among others.		
21Y2BS	Unmanned aircraft systems 2	KZ	2
Modern trends in unr	nanned aircraft development. Use of unmanned aircraft. Managerial activities related to the operation of unmanned aircraft. F	lights beyond the appli	cable legislation.
14Y2C1	CATIA I	KZ	2
Fundaments of work	ing with CATIA, making basic parts and bodies. Making 2D sketches, geometric stucture, parametric linking, making adapti	ive models from 2D sk	etches. Import
and export of made	parts and bodies. Making assemble and visualization.		

14Y2C2	CATIA II	KZ	2
	se. Modeling compound bodies. Possibility of enumeration, comunications with other systems. Surface x solid bodies. Kinema	atic mechanism. F	roject making
and project cooperatior	. 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, definit	ion of sensitivity f	unctions and
matrices and their usab	ility in system design.		
21Y2CR	CRM	KZ	2
Introduction to CRM. Ar	halysis of air accidents. Human factor. Error. Historical development of CRM. Health and fitness. Stress and its effect on the h	uman body. Fatigu	ie Sleep &
Vigilance. Information F	Processing. Situational Awareness. Workload Management. Decision Making. Communication. Leadership & amp; Team Behav	viour. Automation.	
12Y2DU	Transport in the Context of Sustainability	KZ	2
Definitions of sustainab	le transport, historical context, development in our country and in the world. Sustainable development and sustainable transport	rt. Demand for trai	nsport. Induction
	of sustainable transport. Biofuels. Electromobility. New trends in transport. Practical examples.		
15Y2DN	Transportation Psychology in German Speaking Countries	KZ	2
	er view of traffic problems with regard to the work with texts (Physics for drivers, abusing alcohol during driving, exhaustion, g	etting of driving lic	cence, children
	t, 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 model		-
-	h a finite number of degrees of freedom. Methods of stiffness constants and pliability constants. Fundamentals of vibration of bi	ridges. Criteria for	the admissibility
	ntal methods in dynamics.		2
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 electron procession and the second se	i microscopy. Evai	uation of data
		1/7	2
16Y2EE	Emissions and Ergonomics of Vehicles	KZ	2
-	ny of vehicles and the influence on man and nature. National and international law related to the hygiene. Noise and vibrations i measuring, prevention, elimination. Exhausts - creation, measurement, reduction, non-regular fuels and drives. Ergonomy - sit		
	ng, ventilation, air-conditioning, filtration, tiredom.	ung, standing, coi	nioi, operational
17Y2FM	Financing in Urban Mass Transportation	KZ	2
	prent in Prague and other cities in the world. Building and operation of public tram, bus, and trolleybus networks. Undergrou		
-	opment in small towns. Particularities of investment and operation of public train, bus, and trolleybus networks. Ordergroup	-	-
	ssengers. Tourism & UMT. UMT typology & choice of optimum financing.		ong. nanoport
21Y2FM	Aviation Company Financial Management	KZ	2
	nance - financial statements, budget, forecast. Financial policy of the company. Financial resources - long-term financial reso		
	s, loans, leasing, capital. Financial and economic analysis of the company - structure and content.		, rotainoù
23Y2FB	Physics for Security Branches	KZ	2
	ubstances and phenomena at extreme conditions. Grounds of rheology. Physics of Earth's interior. Geophysics. Physics of at		
dengineering branches			
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		
behavior are the main o			0
15Y2HS	Road Transport History	KZ	2
	n the Ancient Age, corridors of main mediveal pathways. Development of road traffic in the modern period, acceleration of road		
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.
	tions, bridges and traffic control, development of road signs.		
16Y2HP	Vehicle Hygiene	KZ	2
Emissions and ergonor	hy of vehicles and the influence on man and nature. National and international law related to the hygiene. Noise and vibrations	s - sources, creati	on, propagation,
physical values, ways of	measuring, prevention, elimination. Exhausts - creation, measurement, reduction, non-regular fuels and drives. Ergonomy - sit	ting, standing, cor	ntrol, operational
reach. Condition - heati	ng, ventilation, air-conditioning, filtration, tiredom.		
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 processin	g nodes in the
	ng logistics processes in the post. The appreciation of the real implementation of the Czech post in operation both in lectures ar	nd in the framewor	k of the practical
desk.			
12Y2IS	Urban Networks	KZ	2
	e position of UN as public and technical infrastructure / utilities, metodology of the UN master planning, of UN design, UN coo	ordination, UN ins	tallation and UN
	cal standards of UN, trenchless technologies for UN).		
14Y2JM	One-Chip Controllers	KZ	2
	chitecture, embedded peripherals (counters, timers, converters, ports) and their utilisation. Practical tasks are programmed w		-
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	-	of this process,
	bb-hunting in English. Students will also be introduced to the English vocabulary and phraseology necessary for a successful		2
14Y2KI	Capital Investment in Transportation and Telecommunications	KZ	2
	iment desicion making - long term goals and investment strategies, long term financing	•	-
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		-
	I passive safety parts. Ergonomics, HMI, view out of the vehicle, operational extent, view behind the car. Conditioning tools, s	ignaling function.	Aerodynamics
	and artistic design principles. Practical training.	1/7	2
12Y2KS	Rail Transport in Settlements and Regions	KZ	2
	elopment of railway infrastructure in Czech Republic. Arrangement of railway networks and junctions. Suburban railway servic		guration and
	ems. Network configuration and operation of tram systems. Special thematic lectures (rail transport in selected countries / reg		2
12Y2KE	Landscape Ecology	KZ	2
	ndscape - definition, types, evolution. Landscape systems. Anthropogenic impacts on landscape. Methods using for evaluating tions in landscape accelery. Landscape planning	y ianuscape. ⊢rac	tal geometry
and its potential applica	tions in landscape ecology. Landscape planning.		

	1/7	-
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, A	PP a ACC contro	I. History of ATS
at USA and Czechoslovakia. ATS - Model of financing. Training Systém of Air Traffic Controllers. Future development of ATS.		
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 truthfulnes	s and semantic a	nalysis charts.
Venn's diagram method. Logical basis for network design for the solution of technical tasks.		-
23Y2MA Risk Analysis and Management	KZ	2
	1	_
Concept of risks and terms. Risk sources, definition of hazard, impacts and risks. Methods for identification, analysis, assessment and management	-	
and good engineering practice. Methods, tools and techniques for risk engineering. System of systems risk. Application of strategic and system appro	bach for benefit o	r security and
development. Territorial, emergency and crisis planning. Human factor - its role.		
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 mana-	gement system. E	invironmental
management systems. Integrated management systems. Risk management in the context of the requirements of ISO standards. Sectoral quality mana	gement systems.	Comprehensive
quality management, excellence models and corporate social responsibility. Quality audits.		
	KZ	2
	ļ	
Sociological approach to a corporation. Corporation and its organization. Corporation and its running - human role and communication. Corporation,	its culture and so	cial system.
Human's work position in free market economy. Corporate directorship, work groups, adaptation, strife, different roles and positions in corporation.		
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	or analysis, strate	gy development
and implementation of sales of goods and services in the aviation industry. In addition to the theoretical foundations of marketing, the lectures preser	-	· ·
and product analysis, creation of marketing strategies and planning.	,	, I
	1/7	
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. It and the second sec	leasurement 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.	I	
	1/7	
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 is		• I
variational principles. Element formulation (bar and beam elements, CST, LST, quadrilateral, tetrahedral and brick elements). Natural coordinates, na	tural shape functi	ons and
isoparametric representation. Numerical integration. Introduction to dynamics. FEM programming.		
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 eff	ect analysis). Elei	ments of parallel
(team) design.		
	1/7	
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 (a	analogical and sy	nthetic methods,
modal split, traffic distribution to road network). Shock wave in traffic flow. Service levels and their traffic volumes. Acceleration noise.		
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 t	ransport. Internat	ional mode
organisations of public transport, Air-Rail, railways, roads, air, waterways, forwarding and postal services.		
	1/7	
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 con		
adaptation of the infrastructure model and modification to the infrastructure to allow the implementation of the proposed operational concept. Stability	tests and evaluation	ions. Evaluation
of sensitivity of the operational concept to delays.		
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 was	1	
	re modelling, ser	nce systems,
modelling of advanced problems in distribution systems - exact, heuristic and metaheuristic principles of solving problems.		
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 mathe	matical approach	es and software
tools. A large part is devoted to air targets tracking, measurement-to-track association, track filtering and multisensor tracking.		
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 Ei	1	
American Civil War, transatlantic transportation development. Imperial China: Late Qing dynasty. Selected chapters from the 20. century history: From	-	
Czechoslovak historical myths.	I	
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 bas	ic concepts, indiv	dual principles).
Track geometrical characteristics on modernized railway lines. Superstructure and substructure on upgraded lines. Designing of railway stations. Brid	ges and tunnels.	Development
and realization of projects. Technical description of the tranzit corridors.		
12Y2NS Shared Space Design		2
	K 7	~
Introducing students to the concept of integrated use of public spaces by sharing space with all users. Active promotion of settlements and sustainab	KZ	public chock of 1
towns and sitiss. Analysis of implemented foreign avanual - minimized - fore dealers in the set of	le mobility in the	
towns and cities. Analysis of implemented foreign examples, principles of zone design in the context of legal and technical requirements. Linking traff	le mobility in the	
and architecture in the process of designing quality public spaces.	le mobility in the	ban planning
	le mobility in the	
and architecture in the process of designing quality public spaces.	le mobility in the ic engineering, ui KZ	ban planning
and architecture in the process of designing quality public spaces. 14Y2OP Object Oriented Programming in Transport	le mobility in the ic engineering, ui KZ	ban planning
and architecture in the process of designing quality public spaces. 14Y2OP Object Oriented Programming in Transport Class, object, encapsulation, inheritance, polymorphism, templates, retyping, stream, exceptions, repository, collections, virtual methods and classes from microscopic simulation system, discrete event simulation, celular automata simulation and virtual life area.	le mobility in the ic engineering, u KZ . Problem cases	ban planning 2 wil be chosen
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	Computer Graphics and Virtual Reality	KZ	2
-	nd processing of bitmap and vector 2D graphics, 3D virtual scenes and algorithms used for their computerized processing. Adop	-	with professional
	creation and processing of 2D, 3D and interactive graphics, and basics of programming language VRML and graphic libraries	1 1	0
22Y2PS	Traffic Accidents Computer Simulation and Analysis lation, multi body systems and vehicle active safety systems, vehicle slipping, external influence on virtual model, crash tests	KZ	2 track vehicle
-	destrian, traffic accident simulation and analysis.	evaluation, single	-track verificie,
15Y2PT	Food in Transportation	KZ	2
	eraction transportation and foodstuffs. The health risks. Hygienic safeguard. The practical examples from the Czech Republic	I I	
dining cars, work trains	and other railroad equipment. Legislation.		
23Y2PD	Practical vehicle dynamics	KZ	2
	mics. Multibody vehicle modeling. Modeling with IPG CarMaker. Standard and development stage experiments with road vehi	cles. Realization of	of experimental
	ssenger vehicles. Experiment evaluation.		-
15Y2PD	Practical Spanish for Transportation	KZ	2
Terminology of transpo	unication skills, training of correct written expression of formal character, basic technical vocabulary, cultural specifics of the S	spanish speaking o	countries.
21Y2PP	Law and Operation in Air Transport	KZ	2
	n law. International conventions on civil aviation. International organisations and including of the Czech Republic in these organisations and including of the Czech Republic in these organisations and including of the Czech Republic in these organisations and including of the Czech Republic in these organisations are called a statement of the czech Republic in these organisations are called as the czech Republic in these organisations are called as the czech Republic in these organisations are called as the czech Republic in the czech Republic	I I	
-	tate administration and state supervision in matters of civil aviation, in accordance with Act No. 49/1997 Col. Facilitation. Res	-	
passengers, luggage a	nd cargo. The safe transport of dangerous goods.	-	
20Y2PR	Prediction of time series	KZ	2
Introduction to time ser	ies prediction, meaning of prediction, basics of quantitative prediction. Methods for predictive quality evaluation, descriptive sta	atistics, MAE, MAF	PE, RMSE, naive
	or general formula of loss function. Calculation and programming environment R. Regression models, basics of linear regressi	ion, simple regres	sion. Multiple
	ests of linear dependence, selection of input variables.	·	-
12Y2PV	Public transport priority	KZ	2
	backbone of sustainable mobility. Public transport priority (PTP) in strategic documents. PTP in the Czech Republic and abroactionship between Basics of public transport stops and stations design. PTP measures and evaluation of their operation. Econ		-
	eparing PTP measures.	iomic and environ	iental effects of
14Y2PI	Process Information Systems in Transportation	KZ	2
	ed usage of transport information systems, e.g. EFC, ePurse and transport check-in systems for public transport with focus or	1 1	
	Architecture). Inforamtion systems implementation and operations description in the Czech Republic (technical and process)		
14Y2PJ	C++ Programming Language	KZ	2
	asics of C++ programming language. Class, object, constructor, destructor, inheritance, abstract class, virtual methods, exception	ons, streams, meth	nod and operator
overloading, abstract d	ata type implementation in C++.		
14Y2PH	CAD Interface Programming	KZ	2
	erface programming techniques with the help of LIST and VBA programming languages. Possibilities of proper objects (comm	nands), dialogues,	interfaces, and
	CAD systems. Programming of cooperation with other applications (databases, spread-sheets).		-
11Y2PM	Programming in MATLAB of modelling and simulation, description of Matlab environment and its settings, optimization and program code debugging, c	KZ	2
		toto fitting and day	nigning CLIL in
		data fitting and des	signing GUI in
Matlab.			
Matlab. 21Y2PL	Operational Aspects of Aerodromes	KZ	2
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20Y2TE	Technology of Electronic Systems	KZ	2
	or an effective operation of electronically controlled systems. Maintaining, meassuring, optimization of safety and reliability of		. Semiconductor
technologies, printed cir	rcuits, assembly operations, interconnection and repairs technologiesusers and operators.		
14Y2TU	Telecommunications Systems and Multimedia	KZ	2
New trends in telecomm	unications namely applied in transport solutions, identification and quantification of telecommunications networks and services	performance bas	ed on redundant
architecture, provissioni	ing of guaranteed service quality, two generations of the handover principles.		
16Y2TT	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 cons	•	
vehicles, description and	d construction features, delivered mass calculation, economy of operation. Technics and technology of underground construct	ions. Terrestrial ve	ehicles operation
management methodolo	ogy (ultrasound, laser, GPS, total stations).		
23Y2TP	Creation of legal and technical regulations	KZ	2
Creation of legislation, s	structure of the bills of law, legal process, compatibility with the EC law, the creation of technical standards and their publicati	on, ÚNMZ (Czecł	n Office for
standards, metrology ar	nd testing) in Czech Republic, organizations CEN, CENELEC and ETSI, the notification process.		
14Y2UI	Artificial Intelligence	KZ	2
History of artificial intelli	igence, knowledge, its representation including frames, state space search, constraints, genetic algorithms, machine learning	j .	
18Y2UB	Accident Biomechanics and Safety	KZ	2
Anatomy of man. Metho	ds of Medical Diagnostics - RTG, CT, MRI, US. Dynamics of traumatic events. Factors influencing the severity of an accident a	and the extent of a	a traffic accident.
	edestrian injuries. Injury in railway and air traffic accidents. Analysis of biomechanical events in accidents and their computat	ional modeling. P	rinciples of
treatment and rehabilita	tion. Protective elements and safety measures in transport.		
23Y2VZ	Leadership and Human Resource Development	KZ	2
Introduction to the study	y of human resources, human resources management, corporate goals, strategies, cultural and ethical aspects. Team manag	ement, communi	cation in teams,
strategy and planning ir	human resources, ethics and corporate culture, cross-cultural differences. The labor code. Introduction into protocols.		
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 dyna	mics of transporta	ational systems.
Elastic, elastoplastic an	d viscoelastic material. FEM in problems of biomechanics. Numerical analysis of structural parts with programme ANSYS on	instances.	
23Y2VR	Cope with Risks in Engineering Branches	KZ	2
Types of engineering brain	anches directed to risks, procedures used in risk engineering, ensuring the secured systems, ensuring the safe systems, ensuring	uring the safe syst	tems of systems.
15Y2ZA	Basic Principles of English Academic Writing and Abstract in English	KZ	2
Theory, creating a phras	sal bank according to students' specialisations, rhetorical analysis or texts/abstracts, drafting an abstract, providing effective	feedback.	
12Y2ZK	Traffic Calming	KZ	2
Principles of traffic calm	ning. Solution of road network organization. Urban road layouts. Psychological and physical obstacles (measures of traffic ca	ming) and their co	ombinations.
Traffic calming measure	es in crossroads. Pedestrian zones. Residential streets and zones.		
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 proc	edures of collectir	g and evaluating
information. Means of ir	telligence services. Internal and external intelligence, military intelligence. The means and methods of state security services	s. Cooperation an	nong Intelligence
services within NATO, E	U. The organization of the intelligence services.		

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-DS Name of the group: Master Full-Time DS 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 Irena Veselková	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 Irena Veselková	Z		0P+2C	L	V

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

15JCZ1	Czech Language for Foreign Students 1	Z	0			
Basic structures of C	zech language, common communication situations, study, work, leisure time activities, introduction of myself, phonetics of Czer	ch language, writii	ng skills.			
15JCZ2	Czech Language for Foreign Students 2	Z	0			
Basic structures of C	zech language, common communication situations, study, work, leisure time activities, introduction of myself, phonetics of Czer	ch language, writii	ng skills.			
15JCZ3	Czech Language for Foreign Students 3	Z				
Language structures	anguage 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.	•	<u>'</u>			

Code of the group: JZ-NP-DS-20/21 Name of the group: Language Courses Master Full-Time DS 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:

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	8 Z	J
15J2l1	Language - Italian 1 Irena Veselková	Z	2	0P+2C+10E	8 Z	J
15J2N1	Language - German 1 Eva Rezlerová, Martina Navrátilová, Jana Štikarová	Z	2	0P+2C+10E	8 Z	J
15J2R1	Language - Russian 1 Marie Michlová	Z	2	0P+2C+10E	8 Z	J
15J2S1	Language - Spanish 1 Nina Hricsina Puškinová	Z	2	0P+2C+10E	8 Z	J
15JBF2	Language - French 2 Irena Veselková	Z	2	0P+2C+10E	B L	J
15JBI2	Language - Italian 2	Z	2	0P+2C+10E	B L	J
15JBN2	Language - German 2 Eva Rezlerová, Martina Navrátilová, Jana Štikarová	Z	2	0P+2C+10E	B L	J
15JBR2	Language - Russian 2 Marie Michlová	Z	2	0P+2C+10E	B L	J
15JBS2	Language - Spanish 2 Nina Hricsina Puškinová, Zuzana Krinková	Z	2	0P+2C+10E	B L	J
15JBF3	Language - French 3 Irena Veselková	Z	2	0P+2C+10E	8 Z	J
15JBI3	Language - Italian 3 Irena Veselková	Z	2	0P+2C+10E	8 Z	J
15JBN3	Language - German 3 Eva Rezlerová, Martina Navrátilová, Jana Štikarová	Z	2	0P+2C+10E	8 Z	J
15JBR3	Language - Russian 3 Marie Michlová	Z	2	0P+2C+10E	8 Z	J
15JBS3	Language - Spanish 3 Nina Hricsina Puškinová	Z	2	0P+2C+10E	8 Z	J
15JBF4	Language - French 4 Irena Veselková	ZK	2	0P+2C+10E	B L	J
15JBI4	Language - Italian 4	ZK	2	0P+2C+10E	3 L	J
15JBN4	Language - German 4 Eva Rezlerová, Martina Navrátilová, Jana Štikarová	ZK	2	0P+2C+10E	B L	J
15JBR4	Language - Russian 4 Marie Michlová	ZK	2	0P+2C+10E	B L	J
15JBS4	Language - Spanish 4 Eva Rezlerová, Nina Hricsina Puškinová	ZK	2	0P+2C+10E	B L	J

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

15J2F1	Language - French 1	Z	2
Grammatical Structures	and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative sk	ills, feedback skill	s, summarising
technical text content, s	tructuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and	technical register	rs and their use,
language of manageme	nt.		
15J2I1	Language - Italian 1	Z	2
Grammatical Structures	and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative sk	ills, feedback skill	s, summarising
technical text content, s	tructuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and	technical register	rs and their use,
language of manageme	nt.		
15J2N1	Language - German 1	Z	2
Grammatical Structures	and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative sk	ills, feedback skill	s, summarising
technical text content, s	tructuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and	technical register	rs and their use,
language of manageme	nt.		

		Υ <u></u>
15J2R1 Language - Russian 1	Z	2
Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative s	kills, feedback skil	ls, summarising
technical text content, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal an	d technical registe	rs 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 s	kills. feedback skil	1
technical text content, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal an		-
language of management.	a toorninear regiote	ie and then dee,
		2
15JBF2 Language - French 2	Z	2
Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative s		-
technical text content, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal an	d technical registe	rs and their use,
language of management.		
15JBl2 Language - Italian 2	Z	2
Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative s	kills, feedback skil	ls, summarising
technical text content, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal an	d technical registe	rs and their use,
language of management.		
15JBN2 Language - German 2	7	2
Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative s	kills, feedback skil	ls. summarising
technical text content, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal an		-
language of management.	a toorninoar rogioto	
		0
15JBR2 Language - Russian 2	Z	2
Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative s		-
technical text content, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal an	d technical registe	rs and their use,
language of management.	. <u></u>	
15JBS2 Language - Spanish 2	Z	2
Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative s	kills, feedback skil	ls, summarising
technical text content, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal an	d technical registe	rs 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	-	
and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. We		-
features. Practice of oral and written presentation.		
	7	2
15JBI3 Language - Italian 3	. –	. –
Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement		-
and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. We	ork with (profession	nal) text and its
features. Practice of oral and written presentation.		1
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 struc	ture knowledge
and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. We	ork with (professio	nal) text and its
features. Practice of oral and written presentation.		
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 struc	
and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. We		
features. Practice of oral and written presentation.		
	Z	2
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		•
and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. We	ork with (protessio	nal) text and its
features. Practice of oral and written presentation.		1
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 struc	ture knowledge
and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. We	ork with (professio	nal) 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 struc	ture knowledge
and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. We		-
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	1	1
		•
and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. We	Jik with (professio	inar ien anu is
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		-
and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. We	ork with (professio	nal) 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 struc	ture knowledge
and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. We	ork with (professio	nal) 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
11STS	Stochastic Systems	Z,ZK	4
	with the problems of mathematical modelling of dynamical systems, estimation od these models and their utilization for prediction		
practical trar	nsportation tasks. Mathematical theory roots from probability and mathematical statistics and they use the methods of the Bayesi	an probabilistic appro	ach.
11XN1	Master Project 1	Z	2
11XN2	Master Project 2	Z	2
11XN3	Master Project 3	Z	1
11XN4	Master Project 4	Z	8
11XNDD	Master Thesis for study programme DS	Z	18
11Y2LG	Logics of Engineer's Judgement	KZ	2
	engineer's judgement, its propositional and predicative logical base. Solutions of logical tasks through the methods of truthfulner. Venn's diagram method. Logical basis for network design for the solution of technical tasks.		ysis charts.
11Y2PM	Programming in MATLAB	KZ	2
To explain the prine	ciple of modelling and simulation, description of Matlab environment and its settings, optimization and program code debugging, Matlab.	data fitting and desigr	hing GUI in
12BED	Road Safety Audit	Z,ZK	4
	ations of safety assessments (especially Road Safety Audit, Road Safety Inspection) during the process of preparations, and of the	e particular realization	
network that should	minimize traffic accident risks for all those who take part in road traffic. Application of European Directive 2008/96/EC on road set	afety infrastructure ma	anagement.
12DAZP	Transport and Environment	Z,ZK	4
This course aims the	e impact of transport on environment. The accent is put mainly on noise and vibration, emission, barrier effect and energy demand parcel of this course.	ts. The noise measury	y is part and
12IDOS	Integrated Transport Systems	ZK	3
Reasons for buildi	ng of integrated transport systems, principle of integration, dividing of integration methods, traffic, infrastructure, technical, organi tariff, sales systems, information systems, marketing of system, examples of non-integration.	zational methods, inte	egration of
12IKD	Rail Transport Infrastructure	Z,ZK	5
Non-compensated la	ateral acceleration, parameters eduction for transition curve and cant transition, curves without straight, track spacing change. Track o design, slab track. Tram-train. Interoperability. Noise precautions. Railway line modernization for non-tilting and tilting tra		Substructure
12NAPI	Design and Maintenance of Transportation Structures	Z,ZK	4
Design and constr	uction of cement-concrete pavements and their maintenance. Construction of bridge objects, examples and choice of bridge con- and operation of tunnels.		onstruction
12TEAP	Theory of Road Traffic Operation	Z.ZK	7
	s and their measurement, acquisition and processing. Road capacity analysis. Theoretical foundations and applications of mathe	· · ·	roscopic,
statistical and mic	roscopic traffic models. Theory of traffic management. Traffic light signals, roundabouts, coordination, public transport priority. Url Traffic excesses management. Road assessment and maintenance methods. Health risks assessment.	oan and highway man	agement.
12TKVP	Highway Engineering Materials	Z,ZK	4
I	construction - Material Aspects. The course emphasizes the development of road construction from the beginning of the 20th ce	1 1	ocusing on
	materials, understanding the production and placing of asphalt mixtures.		
12UMUP	Sustainable Mobility and Land - Use Planning	Z,ZK	5
Spatial planning -	objectives and tasks, development over time. Land-use planning tools. SUMP. Territorial and transport planning context. Ways of	urban growth in conne	ection with
transport. Basic prin	ciples of the transport solution. The impact of transport on the size and shape of the city, on the development of the street and the for pedestrian and bicycle transport. Suburbanization and transport. City economics.	e square and the road	ls. Solutions
12VRZ	High Speed Rail Transport	KZ	3
	(HSR) transport characteristics and position in transportation system. Types / models of HSR systems, preparation of high speed		
Republic conditions.	Non-adhesion HSR systems. City and region traffic service by HSR. HSR operating points. HSR worldwide network. HSR routin	g and traffic conception	on. Specifics
40)(1)4	of HSR track construction and layout track parameteres.		-
12XN1	Master Project 1	Z	2
12XN2	Master Project 2	Z	2
12XN3	Master Project 3	Z	1
12XN4	Master Project 4	Z	8
12XNDD	Master Thesis for study programme DS	Z	18
12Y2BM	Safety on The Local Roads	KZ	2
Classification of road	d accidents rates, social looses. Collision points, diagrams. Tools and methods for safer road transportation. Crossroads from the po		sychological
	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 sustail	nable transport, historical context, development in our country and in the world. Sustainable development and sustainable transport		ort. Induction
10/010	of transport. Examples of sustainable transport. Biofuels. Electromobility. New trends in transport. Practical examples		<u> </u>
12Y2IS The importance and	Urban Networks I the position of UN as public and technical infrastructure / utilities, metodology of the UN master planning, of UN design, UN cod	KZ brdination, UN installa	2 tion and UN
	operation (basic technical standards of UN, trenchless technologies for UN).		
		1/7	<u>^</u>
12Y2KE	Landscape - definition, types, evolution. Landscape systems. Anthropogenic impacts on landscape. Methods using for evaluati	KZ	2

12Y2KS			r
1	Rail Transport in Settlements and Regions d development of railway infrastructure in Czech Republic. Arrangement of railway networks and junctions. Suburban railway services	KZ	2
	tion of metro systems. Network configuration and operation of tram systems. Special thematic lectures (rail transport in selected cour	-	
12Y2MD	Methods of Traffic Regulation and Prediction	KZ	2
	prognosis, traffic prognosis for large area (calculation of future traffic volumes, calculation of future traffic volumes between areas (anal		
	modal split, traffic distribution to road network). Shock wave in traffic flow. Service levels and their traffic volumes. Acceleration n	oise.	
12Y2MH	Measurement and Modeling of Traffic Noise	KZ	2
Theoretical introdu	ction 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.	asurement and ca	alculation of
	noise from road traffic. Modelling of traffic noise in the CADNA A.		
12Y2MI	Urban Engineering	KZ	2
	aching aming on utilities storage in area, coordination engineering activities in area, arrangement of public space, concepement of pu		T
12Y2MZ	Modernization of Railway Lines and Stations	KZ	2
	ng. AGC and AGTC Agreement. AGC and AGTC railway network. Principles of modernization (conceptual papers, definitions of basic co		• • •
Irack geometrical	characteristics on modernized railway lines. Superstructure and substructure on upgraded lines. Designing of railway stations. Bridge	s and tunnels. De	evelopment
12Y2NS	and realization of projects. Technical description of the tranzit corridors.	KZ	2
- 1	Shared Space Design s to the concept of integrated use of public spaces by sharing space with all users. Active promotion of settlements and sustainable r		
-	nalysis of implemented foreign examples, principles of zone design in the context of legal and technical requirements. Linking traffic		-
	and architecture in the process of designing quality public spaces.	ongoom.g, a.oo	an pianing
12Y2PV	Public transport priority	KZ	2
1	he backbone of sustainable mobility. Public transport priority (PTP) in strategic documents. PTP in the Czech Republic and abroad. Ty		
	Relationship between Basics of public transport stops and stations design. PTP measures and evaluation of their operation. Economi		-
	PTP. The process of preparing PTP measures.		
12Y2RD	Realization of Transport Buildings	KZ	2
	Types. Project Documentation Types. Building Code. Land Permission and Building Permission Process. Building Process. Project Ecol	,	
12Y2ZK	Traffic Calming	KZ	2
Principles of traffi	c calming. Solution of road network organization. Urban road layouts. Psychological and physical obstacles (measures of traffic calmi	ng) and their com	hbinations.
	Traffic calming measures in crossroads. Pedestrian zones. Residential streets and zones.		
12ZSUZ	Railway Stations and Centres	Z,ZK	3
-quipment for pass	enger transport. Platform construction. Access roads to platforms. Modification of railway stations according to the TSI PRM. Station he of station heads for current ride. Junction stations. Crossing stations. Passenger stations. Moving stations. Public transport termi	-	ant solution:
14GISS		KZ	2
	Geographical Information Systems		1
14XN1	Master Project 1	Z	2
14XN2		Z	2
	Master Project 2	Z	
14XN3	Master Project 3		1
14XN4	Master Project 4	<u>Z</u>	8
14XNDD	Master Thesis for study programme DS	Z	18
14Y2C1	CATIA I	KZ	2
Fundaments of wo	rking with CATIA, making basic parts and bodies. Making 2D sketches, geometric stucture, parametric linking, making adaptive mode	els from 2D sketc	hes. Import
14/2022	and export of made parts and bodies. Making assemble and visualization.	KZ	2
14Y2C2	CATIA II		2
	source Medeling compound hadies. Describility of enumeration, comunications with other systems. Surface y calid hadies. Kinematic		
Extension of basic	course. Modeling compound bodies. Possibility of enumeration, comunications with other systems. Surface x solid bodies. Kinematic		ject making
	and project cooperation. Outputs of projects.	mechanism. Proj	
14Y2CS	and project cooperation. Outputs of projects. Sensitivity of Systems	mechanism. Proj	2
14Y2CS	and project cooperation. Outputs of projects. Sensitivity of Systems with defined reliability. The impact of changing parameters and subsystems within a system. System sensitivity computing, definition	mechanism. Proj	2
14Y2CS Design of system	and project cooperation. Outputs of projects. Sensitivity of Systems with defined reliability. The impact of changing parameters and subsystems within a system. System sensitivity computing, definition matrices and their usability in system design.	mechanism. Proj KZ n of sensitivity fun	2 actions and
14Y2CS Design of system 14Y2IS	and project cooperation. Outputs of projects. Sensitivity of Systems with defined reliability. The impact of changing parameters and subsystems within a system. System sensitivity computing, definition	mechanism. Proj KZ n of sensitivity fun KZ	2 actions and
14Y2CS Design of system 14Y2IS The use of informa	and project cooperation. Outputs of projects. Sensitivity of Systems with defined reliability. The impact of changing parameters and subsystems within a system. System sensitivity computing, definition matrices and their usability in system design. Intelligent Systems in Postal Services	mechanism. Proj KZ n of sensitivity fun KZ mail processing n	2 actions and 2 nodes in the
14Y2CS Design of system 14Y2IS The use of informa postal network, opti	and project cooperation. Outputs of projects. Sensitivity of Systems with defined reliability. The impact of changing parameters and subsystems within a system. System sensitivity computing, definition matrices and their usability in system design. Intelligent Systems in Postal Services tion systems in the postal services (ITIS, and POST, T + T, PS, KMP, DS), application of information technology in the processing of r mizing logistics processes in the post. The appreciation of the real implementation of the Czech post in operation both in lectures and in desk.	mechanism. Proj KZ n of sensitivity fun KZ mail processing n the framework of	2 Inctions and 2 Inodes in the the practica
14Y2CS Design of system 14Y2IS The use of informa postal network, opti 14Y2JM	and project cooperation. Outputs of projects. Sensitivity of Systems with defined reliability. The impact of changing parameters and subsystems within a system. System sensitivity computing, definition matrices and their usability in system design. Intelligent Systems in Postal Services tion systems in the postal services (ITIS, and POST, T + T, PS, KMP, DS), application of information technology in the processing of r mizing logistics processes in the post. The appreciation of the real implementation of the Czech post in operation both in lectures and in desk. One-Chip Controllers	mechanism. Proj KZ n of sensitivity fun KZ mail processing n the framework of KZ	2 actions and 2 odes in the the practica
14Y2CS Design of system 14Y2IS The use of informa postal network, opti 14Y2JM One-chip cont	and project cooperation. Outputs of projects. Sensitivity of Systems with defined reliability. The impact of changing parameters and subsystems within a system. System sensitivity computing, definition matrices and their usability in system design. Intelligent Systems in Postal Services Ition systems in the postal services (ITIS, and POST, T + T, PS, KMP, DS), application of information technology in the processing of r mizing logistics processes in the post. The appreciation of the real implementation of the Czech post in operation both in lectures and in desk. One-Chip Controllers ollers architecture, embedded peripherals (counters, timers, converters, ports) and their utilisation. Practical tasks are programmed w	mechanism. Proj KZ n of sensitivity fun KZ mail processing n the framework of KZ vith the aid of AV	2 actions and 2 odes in the the practica
14Y2CS Design of system 14Y2IS The use of informa postal network, opti 14Y2JM	and project cooperation. Outputs of projects. Sensitivity of Systems with defined reliability. The impact of changing parameters and subsystems within a system. System sensitivity computing, definition matrices and their usability in system design. Intelligent Systems in Postal Services Intelligent Systems in Postal Services Intelligent Systems in the postal services (ITIS, and POST, T + T, PS, KMP, DS), application of information technology in the processing of r mizing logistics processes in the post. The appreciation of the real implementation of the Czech post in operation both in lectures and in desk. One-Chip Controllers Ollers architecture, embedded peripherals (counters, timers, converters, ports) and their utilisation. Practical tasks are programmed w Capital Investment in Transportation and Telecommunications	mechanism. Proj KZ n of sensitivity fun KZ mail processing n the framework of KZ	2 actions and 2 odes in the the practica
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14Y2CS Design of system 14Y2IS The use of informa postal network, opti 14Y2JM One-chip contr 14Y2KI 14Y2OP	and project cooperation. Outputs of projects. Sensitivity of Systems with defined reliability. The impact of changing parameters and subsystems within a system. System sensitivity computing, definition matrices and their usability in system design. Intelligent Systems in Postal Services tion systems in the postal services (ITIS, and POST, T + T, PS, KMP, DS), application of information technology in the processing of r mizing logistics processes in the post. The appreciation of the real implementation of the Czech post in operation both in lectures and in desk. One-Chip Controllers ollers architecture, embedded peripherals (counters, timers, converters, ports) and their utilisation. Practical tasks are programmed w Capital Investment in Transportation and Telecommunications Financial market, investment desicion making - long term goals and investment strategies, long term financing Object Oriented Programming in Transport	mechanism. Proj KZ n of sensitivity fun KZ mail processing n the framework of KZ <i>v</i> ith the aid of AVF KZ	2 actions and 2 aodes in the the practica R chips. 2 2 2
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14Y2CS Design of system 14Y2IS The use of informa iostal network, opti 14Y2JM One-chip contr 14Y2KI 14Y2OP Class, object, enco 14Y2PH	and project cooperation. Outputs of projects. Sensitivity of Systems with defined reliability. The impact of changing parameters and subsystems within a system. System sensitivity computing, definition matrices and their usability in system design. Intelligent Systems in Postal Services tion systems in the postal services (ITIS, and POST, T + T, PS, KMP, DS), application of information technology in the processing of r mizing logistics processes in the post. The appreciation of the real implementation of the Czech post in operation both in lectures and in desk. One-Chip Controllers ollers architecture, embedded peripherals (counters, timers, converters, ports) and their utilisation. Practical tasks are programmed w Capital Investment in Transportation and Telecommunications Financial market, investment desicion making - long term goals and investment strategies, long term financing Object Oriented Programming in Transport apsulation, inheritance, polymorphism, templates, retyping, stream, exceptions, repository, collections, virtual methods and classes. P from microscopic simulation system, discrete event simulation, celular automata simulation and virtual life area. CAD Interface Programming interface programming techniques with the help of LIST and VBA programming languages. Possibilities of proper objects (command	Mechanism. Proj	2 actions and 2 aodes in the the practica 2 R chips. 2 be chosen 2
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14Y2CS Design of system 14Y2IS The use of informa ostal network, opti 14Y2JM One-chip contri 14Y2KI 14Y2OP Class, object, enca 14Y2PH ntroduction to CAE 14Y2PI	and project cooperation. Outputs of projects. Sensitivity of Systems with defined reliability. The impact of changing parameters and subsystems within a system. System sensitivity computing, definition matrices and their usability in system design. Intelligent Systems in Postal Services Intelligent Systems in Postal Services Intelligent Systems in Postal Services Interligent Systems in Postal Services Intelligent Systems in Postal Services Intelligent Systems in Postal Services Interligent Systems in Postal Services Intelligent Systems in Postal Services Interligent Systems in Interligent Systems in Transportation and Telecommunications Interligent Programming Internsport Interligent Programming Intransport Interligent Programming Internsport Internet Internet Programming Internet Internet Internet Programming Interligent Programming Internet Internet Internet Programming Internet Int	mechanism. Proj KZ n of sensitivity fun KZ mail processing n the framework of KZ vith the aid of AVF KZ Problem cases wil KZ	2 actions and 2 aodes in the the practica 2 R chips. 2 be chosen 2 be chosen 2 chfaces, and 2
14Y2CS Design of system: 14Y2IS The use of informa postal network, opti 14Y2JM One-chip contri 14Y2KI 14Y2OP Class, object, enca 14Y2PH ntroduction to CAE 14Y2PI Introduction and design of the system 14Y2PI	and project cooperation. Outputs of projects. Sensitivity of Systems swith defined reliability. The impact of changing parameters and subsystems within a system. System sensitivity computing, definition matrices and their usability in system design. Intelligent Systems in Postal Services Interface programming techniques with the help of LIST and VBA programming languages. Possibilities of proper objects (command applications creation in CAD systems. Programming of cooperation with other applications (databases, spread-sheets). Process Information Systems in Transport tinformation could be the set of the systems of the system design of the set of the set of the set of the system of the set of the set of the system of the set of the set of the system of the set	mechanism. Proj KZ n of sensitivity fun KZ mail processing n the framework of KZ vith the aid of AVF KZ Problem cases wil KZ s), dialogues, inter KZ chitecture of this	2 actions and 2 actions and 2 actions in the the practicat 2 C chips. 2 be chosen 2 be chosen 2
14Y2CS Design of system: 14Y2IS The use of informa postal network, opti 14Y2JM One-chip contri 14Y2KI 14Y2OP Class, object, enca 14Y2PH Introduction to CAE 14Y2PI Introduction and do SOA (Service Or	and project cooperation. Outputs of projects. Sensitivity of Systems swith defined reliability. The impact of changing parameters and subsystems within a system. System sensitivity computing, definition matrices and their usability in system design. Intelligent Systems in Postal Services Intelligent Systems in the post. The appreciation of the real implementation of the Czech post in operation both in lectures and in desk. One-Chip Controllers Intelligent Systems in Transportation and Telecommunications Financial market, investment desicion making - long term goals and investment strategies, long term financing Object Oriented Programming in Transport apsulation, inheritance, polymorphism, templates, retyping, stream, exceptions, repository, collections, virtual methods and classes. P from microscopic simulation system, discrete event simulation, celular automata simulation and virtual life area. CAD Interface Programming interface Programming languages. Possibilities of proper objects (command applications creation in CAD systems. Programming of cooperation with other applications (databases, spread-sheets). Process Information Systems in Transportation etailed usage of transport information systems, e.g. EFC, ePurse and transport check-in systems for public transport with focus on are iented Architecture). Inforamtion systems implementation and operations description in the Czech Republic (technical and process) in	mechanism. Proj KZ n of sensitivity fun KZ mail processing n the framework of KZ vith the aid of AVF KZ Problem cases will KZ soluted uccures in chitecture of this necluded lectures i	2 actions and 2 actions and 2 actions in the the practicat 2 Chips. 2 be chosen 2 be chosen 2 chips. 2 be chosen 2 chips. 2 be chosen 2 chips.
14Y2CS Design of system: 14Y2IS The use of informa bostal network, opti 14Y2JM One-chip contri 14Y2KI 14Y2OP Class, object, enca 14Y2PH Introduction to CAE 14Y2PI Introduction and di SOA (Service Or 14Y2PJ	and project cooperation. Outputs of projects. Sensitivity of Systems swith defined reliability. The impact of changing parameters and subsystems within a system. System sensitivity computing, definition matrices and their usability in system design. Intelligent Systems in Postal Services ition systems in the postal services (ITIS, and POST, T + T, PS, KMP, DS), application of information technology in the processing of r mizing logistics processes in the post. The appreciation of the real implementation of the Czech post in operation both in lectures and in desk. One-Chip Controllers ollers architecture, embedded peripherals (counters, timers, converters, ports) and their utilisation. Practical tasks are programmed w Capital Investment in Transportation and Telecommunications Financial market, investment desicion making - long term goals and investment strategies, long term financing Object Oriented Programming in Transport apsulation, inheritance, polymorphism, templates, retyping, stream, exceptions, repository, collections, virtual methods and classes. CAD Interface Programming interface Programming techniques with the help of LIST and VBA programming languages. Possibilities of proper objects (command applications creation in CAD systems. Programming of cooperation with other applications (databases, spread-sheets). Process Information Systems in Transportation etailed usage of transport information systems implementation and operations description in the Czech Republic (technical and process) in C++ Programming Language	mechanism. Proj KZ n of sensitivity fun KZ mail processing n the framework of KZ vith the aid of AVF KZ Problem cases will KZ shitecture of this chitecture of this KZ	2 actions and 2 actions and 2 actions in the the practical 2 chips. 2 be chosen 2 be chosen 2 chosen 2 chips. 2 be chosen 2
14Y2CS Design of system: 14Y2IS The use of informa postal network, opti 14Y2JM One-chip contri 14Y2KI 14Y2OP Class, object, enca 14Y2PH Introduction to CAE 14Y2PI Introduction and di SOA (Service Or 14Y2PJ	and project cooperation. Outputs of projects. Sensitivity of Systems swith defined reliability. The impact of changing parameters and subsystems within a system. System sensitivity computing, definition matrices and their usability in system design. Intelligent Systems in Postal Services Intelligent Systems in the post. The appreciation of the real implementation of the Czech post in operation both in lectures and in desk. One-Chip Controllers Intelligent Systems in Transportation and Telecommunications Financial market, investment desicion making - long term goals and investment strategies, long term financing Object Oriented Programming in Transport apsulation, inheritance, polymorphism, templates, retyping, stream, exceptions, repository, collections, virtual methods and classes. P from microscopic simulation system, discrete event simulation, celular automata simulation and virtual life area. CAD Interface Programming interface Programming languages. Possibilities of proper objects (command applications creation in CAD systems. Programming of cooperation with other applications (databases, spread-sheets). Process Information Systems in Transportation etailed usage of transport information systems, e.g. EFC, ePurse and transport check-in systems for public transport with focus on are iented Architecture). Inforamtion systems implementation and operations description in the Czech Republic (technical and process) in	mechanism. Proj KZ n of sensitivity fun KZ mail processing n the framework of KZ vith the aid of AVF KZ Problem cases will KZ shitecture of this chitecture of this KZ	2 actions and 2 actions and actions and actions and actions and 2 actions and 2
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14Y2CS Design of system: 14Y2IS The use of information informatio	and project cooperation. Outputs of projects. Sensitivity of Systems swith defined reliability. The impact of changing parameters and subsystems within a system. System sensitivity computing, definition matrices and their usability in system design. Intelligent Systems in Postal Services ition systems in the postal services (ITIS, and POST, T + T, PS, KMP, DS), application of information technology in the processing of r mizing logistics processes in the post. The appreciation of the real implementation of the Czech post in operation both in lectures and in desk. One-Chip Controllers ollers architecture, embedded peripherals (counters, timers, converters, ports) and their utilisation. Practical tasks are programmed w Capital Investment in Transportation and Telecommunications Financial market, investment desicion making - long term goals and investment strategies, long term financing Object Oriented Programming in Transport apsulation, inheritance, polymorphism, templates, retyping, stream, exceptions, repository, collections, virtual methods and classes. CAD Interface Programming Pinterface programming techniques with the help of LIST and VBA programming languages. Possibilities of proper objects (command applications creation in CAD systems, Programming of cooperation with other applications (databases, spread-sheets). Process Information Systems in Transportation tented Architecture]. Information systems, eng. EFC, ePurse and transport check-in systems for public transport with focus on ar iented Architecture]. Information systems implementation and operations description in the Czech Republic (technical and process) ir C++ Programming Language	mechanism. Proj KZ n of sensitivity fun KZ mail processing n the framework of KZ vith the aid of AVf KZ Problem cases wil KZ ls), dialogues, inter KZ chitecture of this neluded lectures a KZ streams, method a	2 actions and 2 actions and 2 actips. 2 chips. 2 be chosen 2 chos chos 2 chosen 2 chos 2 chos 2 chos 2 chos 2 chos 2 chosen 2 chos 2 chos 2 chos 2 chos 2 chos 2 chos 2 chos 2 chos 2 c

14Y2UI	Artificial Intelligence	KZ	2
	listory of artificial intelligence, knowledge, its representation including frames, state space search, constraints, genetic algorithms, ma	1	1 2
15J2A1	Language - English 1 Presentation Skills - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work	Z engagement.	2
15J2F1	Language - French 1	Z	2
Grammatical Str	uctures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills	s, feedback skills, s	ummarising
technical text co	ntent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and te	chnical registers an	nd their use,
	language of management.		
15J2I1	Language - Italian 1	Z	2
Grammatical Str	uctures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills	s, feedback skills, s	ummarising
technical text co	ntent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and te	chnical registers a	nd their use,
	language of management.		-
15J2N1	Language - German 1	Z	2
	uctures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills		-
technical text co	ntent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and te	chnical registers a	nd their use,
151051	language of management.		
15J2R1	Language - Russian 1	Z	2
	uctures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills		-
technical text col	ntent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and te	cnnical registers a	na their use,
45 1004	language of management.	Z	
15J2S1	Language - Spanish 1	-	2
	uctures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills ntent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and te		-
	language of management.	critical registers a	nu men use,
15JBA2	Language - English 2	Z	2
TUUDAZ	Presentation Skills - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work		2
15 ID A 2		Z	2
15JBA3	Language - English 3		2
Fresentation Si	vills - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work engagement.Of FCE, CAE.	Juonal courses ion	Certificates
15JBA4		ZK	2
	Language - English 4 kills - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work engagement.Op	1	1
Fresentation Si	FCE, CAE.		Certinicates
15JBF2	Language - French 2	Z	2
	uctures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills		
	ntent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and te		-
	language of management.	chinical registers a	
15JBF3	Language - French 3	Z	2
	lylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of		
	and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work	0 0	0
	features. Practice of oral and written presentation.	, , , , , , , , , , , , , , , , , , ,	
15JBF4	Language - French 4	ZK	2
	tylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of		
	and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work		
	features. Practice of oral and written presentation.		
15JBI2	Language - Italian 2	Z	2
	uctures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills		
technical text co	ntent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and te	chnical registers a	nd their use,
	language of management.		
15JBI3	Language - Italian 3	Z	2
Grammar and s	tylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of	language structure	knowledge
and perceptive a	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 s	ylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of	anguage structure	knowledge
and perceptive a	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
	uctures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills		-
technical text co	ntent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and te	chnical registers ar	nd their use,
	language of management.		1
15JBN3	Language - German 3	Z	2
	ylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of		
and perceptive a	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.		1
15JBN4	Language - German 4	ZK	2
	ylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of		
and perceptive a	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		Z	2
nammancai on uc	Language - Russian 2 tures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, t		1
	nt, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and tech		
	language of management.	U	
15JBR3	Language - Russian 3	Z	2
rammar and styli	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la	nguage structu	
	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.		
15JBR4	Language - Russian 4	ZK	2
rammar and styli	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la	nguage structur	re knowled
nd perceptive and	I communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work w	ith (professiona	I) text and
	features. Practice of oral and written presentation.		
15JBS2	Language - Spanish 2	Z	2
	tures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, f		
chnical text conte	nt, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and tech	inical registers	and their u
	language of management.	7	
15JBS3	Language - Spanish 3 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la	Z	2
	sucs. Selection of conversation and professional topics based on the language level and study locus at the Facuity. Improvement of all I communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work w		
nu perceptive and	features. Practice of oral and written presentation.	itii (proiessiona	ii) text and
15JBS4	Language - Spanish 4	ZK	2
	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la		
	I 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.	, a	,
15JCZ1	Czech Language for Foreign Students 1	Z	0
Basic structure	s of Czech language, common communication situations, study, work, leisure time activities, introduction of myself, phonetics of Czech	n language, wri	ting skills.
15JCZ2	Czech Language for Foreign Students 2	Z	0
Basic structure	s of Czech language, common communication situations, study, work, leisure time activities, introduction of myself, phonetics of Czech	n language, wri	ting skills.
15JCZ3	Czech Language for Foreign Students 3	Z	
	Language structures with regard to the group level. Listening and oral fluency drill. Basic terminology.		I
15JCZ4	Czech Language for Foreign Students 4	Z	
	Language structures with regard to the group level. Listening and oral fluency drill. Basic terminology.		I
15XN1	Master Project 1	Z	2
15XN2	Master Project 2	Z	2
15XN3	Master Project 3	Z	1
15XN4	Master Project 4	Z	8
15XNDD	Master Thesis for study programme DS	Z	18
	·· ·	 KZ	2
15Y2DN	Transportation Psychology in German Speaking Countries		
	in traffic, traffic accident, traffic psychology in the internet etc.)	g of alloing lice	nce, childh
15Y2HS	Road Transport History	KZ	2
	iffic in the Ancient Age, corridors of main mediveal pathways. Development of road traffic in the modern period, acceleration of road tr		
	tury. Development of road layout, geometric and construction layers. Beginning of modern road civil engineering. Development of road	-	-
pur of zour oor	History of road intercections, bridges and traffic control, development of road signs.	u llavelling in n	odeni pen
15Y2JH	Job Hunting in English es a practical guide to applying for a job in English. The interview process is mapped out, with the course including skills practise for a	KZ	2
15Y2JH he course provid	Job Hunting in English	KZ	2 this proces
15Y2JH he course provid includir	Job Hunting in English es a practical guide to applying for a job in English. The interview process is mapped out, with the course including skills practise for a g specifics for job-hunting in English. Students will also be introduced to the English vocabulary and phraseology necessary for a suc	KZ	2 this proces
15Y2JH he course provid includir 15Y2MS	Job Hunting in English es a practical guide to applying for a job in English. The interview process is mapped out, with the course including skills practise for a	KZ III the stages of cessful intervie KZ	this proces w.
15Y2JH he course provid includir 15Y2MS Sociological appr	Job Hunting in English es a practical guide to applying for a job in English. The interview process is mapped out, with the course including skills practise for a g specifics for job-hunting in English. Students will also be introduced to the English vocabulary and phraseology necessary for a suc Sociology for Managers	KZ III the stages of cessful intervie KZ s culture and so	this proces w.
15Y2JH he course provid includir 15Y2MS Sociological appr	Job Hunting in English es a practical guide to applying for a job in English. The interview process is mapped out, with the course including skills practise for a g specifics for job-hunting in English. Students will also be introduced to the English vocabulary and phraseology necessary for a success Sociology for Managers oach to a corporation. Corporation and its organization. Corporate directorship, work groups, adaptation, strife, different roles and positions in content or the section.	KZ III the stages of cessful intervie KZ s culture and so	this proces w.
15Y2JH he course provid includir 15Y2MS Sociological appr H 15Y2OF	Job Hunting in English es a practical guide to applying for a job in English. The interview process is mapped out, with the course including skills practise for a g specifics for job-hunting in English. Students will also be introduced to the English vocabulary and phraseology necessary for a succost Sociology for Managers Doach to a corporation. Corporation and its organization. Corporation and its running - human role and communication. Corporation, its	KZ III the stages of cessful intervie KZ s culture and so corporation. KZ	2 this proces w. 2 cial system
15Y2JH he course provid includir 15Y2MS Sociological appr H 15Y2OF	Job Hunting in English es a practical guide to applying for a job in English. The interview process is mapped out, with the course including skills practise for a g specifics for job-hunting in English. Students will also be introduced to the English vocabulary and phraseology necessary for a success Sociology for Managers oach to a corporation. Corporation and its organization. Corporate directorship, work groups, adaptation, strife, different roles and positions in constraints of the communications Specialised French for Transportation and Telecommunications ortation (public transport, railway, air, road and ship transport) and telecommunications terminology. Special focus on independent special	KZ III the stages of cessful intervie KZ s culture and so corporation. KZ	2 this proces w. 2 cial system
15Y2JH he course provid includir 15Y2MS Sociological appr H 15Y2OF Basic transpo 15Y2OZ	Job Hunting in English es a practical guide to applying for a job in English. The interview process is mapped out, with the course including skills practise for a g specifics for job-hunting in English. Students will also be introduced to the English vocabulary and phraseology necessary for a success Sociology for Managers Sociology for Managers oach to a corporation. Corporation and its organization. Corporate directorship, work groups, adaptation, strife, different roles and positions in c Specialised French for Transportation and Telecommunications	KZ III the stages of cessful interview KZ coulture and so corporation. KZ aking and writir KZ	2 this proces w. cial system g skills. 2
15Y2JH he course provid includir 15Y2MS Sociological appr H 15Y2OF Basic transpo 15Y2OZ Health protection	Job Hunting in English es a practical guide to applying for a job in English. The interview process is mapped out, with the course including skills practise for a g specifics for job-hunting in English. Students will also be introduced to the English vocabulary and phraseology necessary for a success is mapped out, with the course including skills practise for a sociology for Managers oach to a corporation. Corporation and its organization. Corporate directorship, work groups, adaptation, strife, different roles and positions in constraints of the communications Specialised French for Transportation and Telecommunications rtation (public transport, railway, air, road and ship transport) and telecommunications terminology. Special focus on independent spectrum. Health Protection in Transportation and EU	KZ III the stages of cessful interview KZ coulture and so corporation. KZ aking and writir KZ	2 this proces w. cial system g skills. 2
15Y2JH he course provid includir 15Y2MS Sociological appr H 15Y2OF Basic transpo 15Y2OZ	Job Hunting in English es a practical guide to applying for a job in English. The interview process is mapped out, with the course including skills practise for a g specifics for job-hunting in English. Students will also be introduced to the English vocabulary and phraseology necessary for a success is mapped out, with the course including skills practise for a sociology for Managers oach to a corporation. Corporation and its organization. Corporate directorship, work groups, adaptation, strife, different roles and positions in constrained for the tengency of	KZ III the stages of cessful interview KZ coulture and so corporation. KZ aking and writir KZ	2 this proces w. cial system g skills. 2
15Y2JH he course provid includir 15Y2MS Sociological appr H 15Y2OF Basic transpo 15Y2OZ Health protection	Job Hunting in English es a practical guide to applying for a job in English. The interview process is mapped out, with the course including skills practise for a g specifics for job-hunting in English. Students will also be introduced to the English vocabulary and phraseology necessary for a success is mapped out, with the course including skills practise for a sociology for Managers oach to a corporation. Corporation and its organization. Corporate directorship, work groups, adaptation, strife, different roles and positions in constrained in the market economy. Corporate directorship, work groups, adaptation, strife, different roles and positions in constrained for the social sed French for Transportation and Telecommunications rtation (public transport, railway, air, road and ship transport) and telecommunications terminology. Special focus on independent spectration in CR in the past and present. Conditions before 1989 and after, current legislature, future prospects. Harmonisation members. Fundamental principles of health protection and support in selected EU countries.	KZ III the stages of cessful interview KZ a culture and so corporation. KZ aking and writir KZ of legislation w	2 this proces w. 2 cial system g skills. 2 ith other E ith other E
15Y2JH he course provid includir 15Y2MS Sociological appr H 15Y2OF Basic transpo 15Y2OZ Health protection	Job Hunting in English es a practical guide to applying for a job in English. The interview process is mapped out, with the course including skills practise for a g specifics for job-hunting in English. Students will also be introduced to the English vocabulary and phraseology necessary for a successary for a successary for a corporation. Corporation and its organization. Corporation and its running - human role and communication. Corporation, its uman's work position in free market economy. Corporate directorship, work groups, adaptation, strife, different roles and positions in constraints work position in free market economy. Corporate directorship, work groups, adaptation, strife, different roles and positions in construction (public transport, railway, air, road and ship transport) and telecommunications terminology. Special focus on independent spection (public transport, railway, air, road and ship transport) and telecommunication and EU in transportation in CR in the past and present. Conditions before 1989 and after, current legislature, future prospects. Harmonisation members. Fundamental principles of health protection and support in selected EU countries. Practical Spanish for Transportation communication skills, training of correct written expression of formal character, basic technical vocabulary, cultural specifics of the Sp Terminology of transport and commerce.	KZ III the stages of cessful interview KZ a culture and so corporation. KZ aking and writir KZ of legislation w	2 this proces w. 2 cial system g skills. 2 ith other E ith other E
15Y2JH he course provid includir 15Y2MS Sociological appr H 15Y2OF Basic transpo 15Y2OZ Health protection	Job Hunting in English es a practical guide to applying for a job in English. The interview process is mapped out, with the course including skills practise for a g specifics for job-hunting in English. Students will also be introduced to the English vocabulary and phraseology necessary for a success of a corporation. Corporation and its organization. Corporation and its running - human role and communication. Corporation, its uman's work position in free market economy. Corporate directorship, work groups, adaptation, strife, different roles and positions in constrained for the communications of the specialised French for Transportation and Telecommunications rtation (public transport, railway, air, road and ship transport) and telecommunications terminology. Special focus on independent spectration in CR in the past and present. Conditions before 1989 and after, current legislature, future prospects. Harmonisation members. Fundamental principles of health protection and support in selected EU countries. Practical Spanish for Transportation communication skills, training of correct written expression of formal character, basic technical vocabulary, cultural specifics of the Sp	KZ III the stages of cessful interview KZ a culture and so corporation. KZ aking and writir KZ of legislation w	2 this proces w. 2 cial system g skills. 2 ith other E
15Y2JH ne course provid includir 15Y2MS Sociological appr H 15Y2OF Basic transpo 15Y2OZ dealth protection 15Y2PD Development of 15Y2PT	Job Hunting in English es a practical guide to applying for a job in English. The interview process is mapped out, with the course including skills practise for a g specifics for job-hunting in English. Students will also be introduced to the English vocabulary and phraseology necessary for a success of a corporation. Corporation and its organization. Corporation and its running - human role and communication. Corporation, its uman's work position in free market economy. Corporate directorship, work groups, adaptation, strife, different roles and positions in constraints work position in free market economy. Corporate directorship, work groups, adaptation, strife, different roles and positions in constraints (public transport, railway, air, road and ship transport) and telecommunications terminology. Special focus on independent spection (public transport, railway, air, road and ship transport) and telecommunication and EU In transportation in CR in the past and present. Conditions before 1989 and after, current legislature, future prospects. Harmonisation members. Fundamental principles of health protection and support in selected EU countries. Practical Spanish for Transportation communication skills, training of correct written expression of formal character, basic technical vocabulary, cultural specifics of the Sp Terminology of transport and commerce. Food in Transportation Interaction transportation and foodstuffs. The health risks. Hygienic safeguard. The practical examples from the Czech Republic and the safeguard. The practical examples from the Czech Republic and the safeguard. The practical examples from the Czech Republic and the safeguard. The practical examples from the Czech Republic and the safeguard. The practical examples from the Czech Republic and the safeg	KZ III the stages of cessful interview KZ a culture and so corporation. KZ aking and writir KZ of legislation w KZ anish speaking KZ	2 this process w. 2 cial system ng skills. 2 ng skills. 2 ith other E 2 countries. 2
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r			
15Y2TS	Technician and Contemporary Society	KZ	2
Why to take off a ha	at 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, Internet and in newspapers, what are the sights for, interest in public affairs - a hangover from the past?	it must be true	- it s on th
15Y2ZA	Basic Principles of English Academic Writing and Abstract in English	ΚZ	2
	creating a phrasal bank according to students' specialisations, rhetorical analysis or texts/abstracts, drafting an abstract, providing effective		-
16PDP	Principles of Vehicle Design	ZK	2
Design of transpo	ortation vehicle according to its usage and function. Marketing and user demands. Vehicle dynamics. Propulsion systems. Design proces	s, functional de	esign and
	vehicle structure. Evaluation of variant concepts. Design phases. Realiability, technological aspects etc.		
16STK	Simulation and Testing of Vehicle Body and Systems	ZK	3
-	Computing equipment for simulation. Modeling of mechanical and dynamic systems. Simulation and optimization methods. Hardware in the vehicle design Simulation of propulsion and electric systems.		
16XN1	for vehicle design. Simulation of propulsion and electric systems. Strength and material analyses of dynamical phenomena for vehicles Master Project 1	Z	age. 2
16XN2	Master Project 1 Master Project 2	Z	2
16XN2	Master Project 2 Master Project 3	Z	1
16XN3	Master Project 3 Master Project 4	Z	8
16XNDD	Master Thesis for study programme DS	Z	18
16Y2EE	Emissions and Ergonomics of Vehicles	KZ	2
	nomy of vehicles and the influence on man and nature. National and international law related to the hygiene. Noise and vibrations - sour		
-	/s of measuring, prevention, elimination. Exhausts - creation, measurement, reduction, non-regular fuels and drives. Ergonomy - sitting, sta		
	reach. Condition - heating, ventilation, air-conditioning, filtration, tiredom.		
16Y2HP	Vehicle Hygiene	ΚZ	2
-	nomy of vehicles and the influence on man and nature. National and international law related to the hygiene. Noise and vibrations - sour	-	
hysical values, way	ys of measuring, prevention, elimination. Exhausts - creation, measurement, reduction, non-regular fuels and drives. Ergonomy - sitting, sta	anding, control,	operation
161/21/1	reach. Condition - heating, ventilation, air-conditioning, filtration, tiredom.	KZ	0
16Y2KV	Car Body Design		2 car body
	e and passive safety parts. Ergonomics, HMI, view out of the vehicle, operational extent, view behind the car. Conditioning tools, signalin		-
	of the car body. Design and artistic design principles. Practical training.	g	
16Y2MK	Quality Methods for Vehicles	ΚZ	2
uality managemer	nt methods list, customer data acquisition and analysis of customer requirements, QFD, DFM, DFA, DFS. FMEA (Failure mode effect ana	lysis). Element	s of parall
	(team) design.		
16Y2PG	Computer Graphics and Virtual Reality	KZ	2
	n and processing of bitmap and vector 2D graphics, 3D virtual scenes and algorithms used for their computerized processing. Adopting skil	-	
16Y2ST	ware tools for creation and processing of 2D, 3D and interactive graphics, and basics of programming language VRML and graphic libra	KZ	2
	Special Technologies in Transport and Telecommunications		
milliono, nano una c	vehicles, laser and laser technologies, soldering, gluing, ultrasound, diffusion, friction and explosion technologies, micro stoves, ga		ionaling of
16Y2SV	Special technologies in vehicle manufacturing	ΚZ	2
Micro, nano and	special technologies, electric arc and its applications, plasma technologies, dipping, beam technologies, electron beams technology in ro	duction and m	ending of
	vehicles, laser and laser technologies, soldering, gluing, ultrasound, diffusion, friction and explosion technologies, micro stoves, ga	S.	
16Y2TT	Transportation and Building Technology and Equipment	KZ	2
-	nd building technology and equipment. Transport of solid and mass material, soil and rock above all. Highway and underground construction and track above all. Highway and underground construction and track and track above all.	-	
enicies, description	n and construction features, delivered mass calculation, economy of operation. Technics and technology of underground constructions. Te management methodology (ultrasound, laser, GPS, total stations).	rrestrial vehicle	es operatio
17DOPD	Transportation Planning and Modeling	Z,ZK	4
	Is used within four step model (trip generation, trip distribution, mode choice and trip distribution). Mobility and availability in urban areas		
	transportation planning and modelling.	,	
17TZND	Technology of Railway Transport	Z,ZK	4
	assesment, model operational situation with a system running time between IPT-nodes, calculation of traction energy savings compared		
for designing of fle	eting crossing station, solving of capacity problem and blocking time in relation to train protection system, robustness of timetable, syste	m concept of f	reight trair
	paths, guidelines for centralised operational traffic control and management.	7	0
17XN1	Master Project 1	Z	2
17XN2	Master Project 2	Z	2
17XN3	Master Project 3	Z	1
17XN4	Master Project 4	Z	8
17XNDD	Master Thesis for study programme DS	Z	18
17Y2AM	Application of Marketing Tools in Transportation	KZ	2
	narketing principles in transport issues, marketing tools suitable for transport, case studies of the use of marketing in the sphere of public		-
17Y2FM	Financing in Urban Mass Transportation evelopment in Prague and other cities in the world. Building and operation of public tram, bus, and trolleybus networks. Underground bui	KZ	2 ation Othe
IMT history and de	levelopment in small towns. Particularities of investment and operation of public train, bus, and trolleybus networks. Onderground but levelopment in small towns. Particularities of investment and operation financing of individual UMT types. Historic and present models of		
-			,
-	inspection and blind passengers. Tourism & UMT. UMT typology & choice of optimum financing.		-
-	Modelling and optimization on transport networks	ΚZ	2
UMT types. UMT d			
UMT types. UMT d 17Y2MD Coordination prob	Modelling and optimization on transport networks	odelling, service	
UMT types. UMT d 17Y2MD Coordination prob 17Y2MO	Modelling and optimization on transport networks lems on public transport networks, scheduling vehicles, design of control plans for light-controlled intersections including green wave models.	odelling, service	e systems, 2

17Y2MS		1/7	2
1712000	Microsimulation of Railway Operation	KZ	-
	characteristics of simulation tools, creation of a simulation model of railway infrastructure, verification of a specific operational concer-		
adaptation of the in	frastructure model and modification to the infrastructure to allow the implementation of the proposed operational concept. Stability test	ts and evaluation	ns. Evaluatio
	of sensitivity of the operational concept to delays.		
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 Empi		
American Civil W	/ar, 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 super-	port, risk of deci	sion making
	telematics.		
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		•
sirculation planning	. Rules of train-diagramm creating. Timetables for more service-levels on the line. Construction slot conflicts between passenger- and	freight transport	. Network lin
10017	relations and waiting times, timetables for lines under construction.	7 71/	-
18GAZ	Geomechanics and Foundation Engineering	Z,ZK	3
	pertrographyand stratigraphy), mechanics of soils (classification of fundamental soils, mechanic properties of fundamental soils, per		
(tootings, tooters, p	plates, depth of founding), determination of planar foundations bearing and deformation, depth foundations classification of depth four of their use, piles (classification, technology od performing).	ndations elemen	ts, example:
		7 71/	4
18TEAM	Theoretical and Applied Mechanics	Z,ZK	4 a and atrain
rundamentals of	theory of plasticity. Plasticity conditions. Elastoplastic and plastic states of cross-sections and beams. Reliability and durability of structure truthede of linear fracture mechanics. Croal driving for		s and strain
40711	state around a notch. Stress intensity factor. Fracture toughness. Energy methods of linear fracture mechanics. Crack driving fo		
18TIK	Theory of Engineering Structures	Z,ZK	4
	pon the knowledge gained in basic mechanics courses in bachelor study (especially Statics and Elasticity) in the field of mathematical	-	
is placed on plane	e and axisymmetric problems, as well as on the calculation of stress and strain in plates and shells. Students are further acquainted w	ith methods of n	nodeling the
10)(1)(behavior of subsoil used in the design of line structures.		
18XN1	Master Project 1	<u>Z</u>	2
18XN2	Master Project 2	Z	2
18XN3	Master Project 3	Z	1
18XN4	Master Project 4	Z	8
18XNDD	Master Thesis for study programme DS	Z	18
18Y2DC			2
/ibration of systems	Dynamics of Transport Routes and Vehicles Ilculations of more mass systems. Analysis of the forces acting between the vehicle and transport route. Creation of dynamic models of s with a finite number of degrees of freedom. Methods of stiffness constants and pliability constants. Fundamentals of vibration of bridge of oscillation. Experimental methods in dynamics.	KZ vehicles and trai es. Criteria for the	e admissibili
Basic theory and ca /ibration of systems 18Y2EM	Dynamics of Transport Routes and Vehicles Iculations of more mass systems. Analysis of the forces acting between the vehicle and transport route. Creation of dynamic models of s with a finite number of degrees of freedom. Methods of stiffness constants and pliability constants. Fundamentals of vibration of bridge	KZ vehicles and tra es. Criteria for the KZ	admissibili
Basic theory and ca /ibration of systems 18Y2EM Basic principles of	Dynamics of Transport Routes and Vehicles Ilculations of more mass systems. Analysis of the forces acting between the vehicle and transport route. Creation of dynamic models of s with a finite number of degrees of freedom. Methods of stiffness constants and pliability constants. Fundamentals of vibration of bridge of oscillation. Experimental methods in dynamics. Electron microscopy	KZ vehicles and trai es. Criteria for the KZ ata evaluation u	admissibilit
Basic theory and ca /ibration of systems 18Y2EM Basic principles of analysis, quantific	Dynamics of Transport Routes and Vehicles Ilculations of more mass systems. Analysis of the forces acting between the vehicle and transport route. Creation of dynamic models of s with a finite number of degrees of freedom. Methods of stiffness constants and pliability constants. Fundamentals of vibration of bridge of oscillation. Experimental methods in dynamics. Electron microscopy of electron microscopy, construction, control and maintenance of SEM, sample preparation, signal detection, types of detectors and d	KZ vehicles and trai es. Criteria for the KZ ata evaluation u	admissibilit
Basic theory and ca /ibration of system: 18Y2EM Basic principles of analysis, quantific 18Y2FZ	Dynamics of Transport Routes and Vehicles Ilculations of more mass systems. Analysis of the forces acting between the vehicle and transport route. Creation of dynamic models of s with a finite number of degrees of freedom. Methods of stiffness constants and pliability constants. Fundamentals of vibration of bridge of oscillation. Experimental methods in dynamics. Electron microscopy of electron microscopy, construction, control and maintenance of SEM, sample preparation, signal detection, types of detectors and d ation of results and automation of data processing, energy dispersive X-ray microanalysis and other analytical methods in electron mi obtained from ED detector, practical examples of ED microanalysis on samples. Physical foundation of materials' properties	KZ vehicles and trai as. Criteria for the KZ lata evaluation u icroscopy. Evalu- KZ	e admissibili 2 sing image ation of data
Basic theory and ca /ibration of system: 18Y2EM Basic principles of analysis, quantific 18Y2FZ	Dynamics of Transport Routes and Vehicles Ideulations of more mass systems. Analysis of the forces acting between the vehicle and transport route. Creation of dynamic models of s with a finite number of degrees of freedom. Methods of stiffness constants and pliability constants. Fundamentals of vibration of bridge of oscillation. Experimental methods in dynamics. Electron microscopy of electron microscopy, construction, control and maintenance of SEM, sample preparation, signal detection, types of detectors and d ation of results and automation of data processing, energy dispersive X-ray microanalysis and other analytical methods in electron mi obtained from ED detector, practical examples of ED microanalysis on samples. Physical foundation of materials' properties attice defects influence on properties of materials, stiffness, plasticity, strength, fracture, fatigue, creep, corrosion, effects of environm	KZ vehicles and trai as. Criteria for the KZ lata evaluation u icroscopy. Evalu- KZ	e admissibili 2 sing image ation of data
Basic theory and ca /ibration of system: 18Y2EM Basic principles of analysis, quantific 18Y2FZ	Dynamics of Transport Routes and Vehicles Ilculations of more mass systems. Analysis of the forces acting between the vehicle and transport route. Creation of dynamic models of s with a finite number of degrees of freedom. Methods of stiffness constants and pliability constants. Fundamentals of vibration of bridge of oscillation. Experimental methods in dynamics. Electron microscopy of electron microscopy, construction, control and maintenance of SEM, sample preparation, signal detection, types of detectors and d ation of results and automation of data processing, energy dispersive X-ray microanalysis and other analytical methods in electron mi obtained from ED detector, practical examples of ED microanalysis on samples. Physical foundation of materials' properties	KZ vehicles and trai as. Criteria for the KZ lata evaluation u icroscopy. Evalu- KZ	admissibili
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Basic theory and ca /ibration of systems 18Y2EM Basic principles of analysis, quantifice 18Y2FZ Atomistic models, I 18Y2MP Basic mathemati	Dynamics of Transport Routes and Vehicles Ideulations of more mass systems. Analysis of the forces acting between the vehicle and transport route. Creation of dynamic models of s with a finite number of degrees of freedom. Methods of stiffness constants and pliability constants. Fundamentals of vibration of bridge of oscillation. Experimental methods in dynamics. Electron microscopy of electron microscopy, construction, control and maintenance of SEM, sample preparation, signal detection, types of detectors and d ation of results and automation of data processing, energy dispersive X-ray microanalysis and other analytical methods in electron mi obtained from ED detector, practical examples of ED microanalysis on samples. Physical foundation of materials' properties attice defects influence on properties of materials, stiffness, plasticity, strength, fracture, fatigue, creep, corrosion, effects of environm behavior are the main discussed topics. Finite Element Method And Its Application cal formulation of the Finite Element Method. Direct Stiffness Method used in structural mechanics. Evaluation of stiffness matrices for	KZ vehicles and trai as. Criteria for the KZ lata evaluation u icroscopy. Evalue KZ ent and loading KZ or the basic elem	admissibili a admissibili asing image ation of data ation of data ation materials an materials an attraction an attraction an attraction attrac
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20Y2TE Principle technolog	Technology of Electronic Systems ies for an effective operation of electronically controlled systems. Maintaining, meassuring, optimization of safety and reliability of con	npiex systems. Se	miconduct
	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
21XNDD	Master Thesis for study programme DS	Z	18
21Y2BS	Unmanned aircraft systems 2	KZ	2
	manned aircraft development. Use of unmanned aircraft. Managerial activities related to the operation of unmanned aircraft. Flights be		e legislatio
21Y2CR	CRM	KZ	2
ntroduction to CRI	M. Analysis of air accidents. Human factor. Error. Historical development of CRM. Health and fitness. Stress and its effect on the human	an body. Fatigue S	leep &am
-	nformation Processing. Situational Awareness. Workload Management. Decision Making. Communication. Leadership & amp; Team B		tion.
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	rces, depreciation	n, retained
041/01.0	earnings, shares, bonds, loans, leasing, capital. Financial and economic analysis of the company - structure and content.	1/7	-
21Y2LS	Air Traffic Services in Czech Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, APP	KZ	2
irspace structure	at USA and Czechoslovakia. ATS - Model of financing. Training Systém of Air Traffic Controllers. Future development of ATS		ISIOTY OF A
21Y2MC	CNS Systems Modelling	KZ	2
	ined as a set of model tasks in the field of communication navigation and surveillance systems in aviation, addressed using mathema		
	tools. A large part is devoted to air targets tracking, measurement-to-track association, track filtering and multisensor trackin		
21Y2MK	Marketing of Air Transport	KZ	2
	course "Marketing in air transport" is the management of activities and processes using available marketing tools and processes for a		
nd 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	competiti
	and product analysis, creation of marketing strategies and planning.		
21Y2MQ	Quality Management	KZ	2
	nition. Pioneers in the field of quality. International quality organisations and quality promotion in the Czech Republic. Quality manage		
nanagement syste	ms. Integrated management systems. Risk management in the context of the requirements of ISO standards. Sectoral quality manager	nent systems. Co	mprehensi
	quality management, excellence models and corporate social responsibility. Quality audits.		-
21Y2PL	Operational Aspects of Aerodromes		2
		KZ	
	ts of aerodromes. Location of aerodrome and orientation of runways. Requirements for apron. Capacity of airports runways and term	inals. Operation u	
Operational aspec	ts of aerodromes. Location of aerodrome and orientation of runways. Requirements for apron. Capacity of airports runways and term conditions. Firefighting units. Protection against unlawful interference. Local transport connection. Environmental protection	inals. Operation ι	inder winte
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Operational aspective of average of a spectrum of average of a spectrum of average of a spectrum of	ts of aerodromes. Location of aerodrome and orientation of runways. Requirements for apron. Capacity of airports runways and term conditions. Firefighting units. Protection against unlawful interference. Local transport connection. Environmental protection Law and Operation in Air Transport	inals. Operation u KZ ations. EU legisla	inder winte
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Operational aspect 21Y2PP Development of av aviation. Executi 22AMMD	ts of aerodromes. Location of aerodrome and orientation of runways. Requirements for apron. Capacity of airports runways and term conditions. Firefighting units. Protection against unlawful interference. Local transport connection. Environmental protection Law and Operation in Air Transport and the conditions on civil aviation. International organisations and including of the Czech Republic in these organis on of state administration and state supervision in matters of civil aviation, in accordance with Act No. 49/1997 Col. Facilitation. Resp	inals. Operation u KZ ations. EU legisla onsibilities of air o KZ	tion and ci arriers for
Operational aspect 21Y2PP Development of av aviation. Executi 22AMMD Geodetic location	ts of aerodromes. Location of aerodrome and orientation of runways. Requirements for apron. Capacity of airports runways and term conditions. Firefighting units. Protection against unlawful interference. Local transport connection. Environmental protection Law and Operation in Air Transport ation law. International conventions on civil aviation. International organisations and including of the Czech Republic in these organis on of state administration and state supervision in matters of civil aviation, in accordance with Act No. 49/1997 Col. Facilitation. Resp passengers, luggage and cargo. The safe transport of dangerous goods. Measuring Methods Applied to Transportation	inals. Operation u KZ ations. EU legisla onsibilities of air o KZ out using geode	tion and ci arriers for
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23Y2PD	Practical vehicle dynamics	KZ	2		
Theory of vehicle	dynamics. Multibody vehicle modeling. Modeling with IPG CarMaker. Standard and development stage experiments with road vehicle	s. Realization of e	xperimental		
	measurements with passenger vehicles. Experiment evaluation.				
23Y2TP	Creation of legal and technical regulations	KZ	2		
Creation of legis	Creation of legislation, structure of the bills of law, legal process, compatibility with the EC law, the creation of technical standards and their publication, UNMZ (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 engineerir	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 managem	ent, communicatio	on 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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