### Study plan

### Name of study plan: Master Full-Time DS from 2023/24

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:

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 quarantors (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 <b>Ond ej Jiroušek</b> 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+8B	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+10B	Z	Z

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	ion. 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 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	rographyand stratigraphy), mechanics of soils (classification of fundamental soils, mechanic properties of fundamental soils,	permeability), pla	nar foundations			
(footings, footers, plates	s, depth of founding), determination of planar foundations bearing and deformation, depth foundations classification of depth	foundations elem-	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	atical theory of ela	sticity. Emphasis			
is placed on plane and	is placed on plane and axisymmetric problems, as well as on the calculation of stress and strain in plates and shells. Students are further acquainted with methods of modeling the					
behavior of subsoil use	d in the design of line structures.					
14GISS	Geographical Information Systems	KZ	2			

Construction of saving format of space-oriented information land-survey and cartography minimum basic tasks of spatial operations principles of territorial identification

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

Code of the group: 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

1700PD	Transportation Planning and Modeling	∠,∠K	4
Basic steps and tools us	sed within four step model (trip generation, trip distribution, mode choice and trip distribution). Mobility and availability in urba	ın areas, land use	. New trends for
transportation planning	and modelling.		
17TZND	Technology of Railway Transport	Z,ZK	4
Track line capacity asse	sment, model operational situation with a system running time between IPT-nodes, calculation of traction energy savings cor	npared with infras	structure 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
noths guidalines for as	etroliced enerational traffic central 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:

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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+8E	L 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  Voianová. Marie Michlová. Markéta Musilová. Jan Feit. Eva Rezlerová	Z	2	0P+2C+10E	L 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 construction of cement-concrete pavements and their maintenance. Construction of bridge objects, examples and choice of bridge construction	ruction materials. Co	onstruction
and operation of tunnels.		

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 connection with transport. Basic principles of the transport solution. The impact of transport on the size and shape of the city, on the development of the street and the square and the roads. Solutions for pedestrian and bicycle transport. Suburbanization and transport. City economics.

12ZSUZ Railway Stations and Centres Z,ZK 3

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 current ride. Junction stations. Crossing stations. Passenger stations. Moving stations. Public transport terminals.

16PDP	Principles of Vehicle Design	ZK	2		
Design of transportati	on vehicle according to its usage and function. Marketing and user demands. Vehicle dynamics. Propulsion systems. Design p	rocess, functional	design and		
vehicle structure. Evaluation of variant concepts. Design phases. Realiability, technological aspects etc.					
22AMMD	Measuring Methods Applied to Transportation	KZ	4		
Geodetic location and	Geodetic location and technical processing of traffic route with geodetic total station, GPS and photogrammetry, 3D scanning. Transport corridor setting out using geodetic methods.				
Detection and technic	al processing of several vehicle dynamic characteristics using high-speed cameras and accelerometers. It is a week course an	d the terms are us	sually set in June		
and September - usua	and September - usually in examination period.				
15JBA2	Language - English 2	Z	2		
Presentation Skills - e	entation Skills - expert 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 application	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 min	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			
	Theoretical and Applied Mechanics of plasticity. Plasticity conditions. Elastoplastic and plastic states of cross-sections and beams. Reliability and durability of s	,	4 ess and strain			

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=35-NP-D5-21/22 Name=3rd Sem. Bachelor i	-uii-i ime DS	from 2021/22			
11STS	Stochastic Systems	Z,ZK	4			
The subject deals with the problems of mathematical modelling of dynamical systems, estimation od these models and their utilization for prediction. The results are illi						
practical transportation	on tasks. Mathematical theory roots from probability and mathematical statistics and they use the methods of the Bayesian prol	oabilistic approacl	٦.			
12DAZP	Transport and Environment	Z,ZK	4			
This course aims the	impact of transport on environment. The accent is put mainly on noise and vibration, emission, barrier effect and energy demar	ds. The noise me	asury is part and			
parcel of this course.						
12TEAP	Theory of Road Traffic Operation	Z,ZK	7			
Traffic parameters an	d their measurement, acquisition and processing. Road capacity analysis. Theoretical foundations and applications of mathem	atical models - ma	acroscopic,			
statistical and micros	copic traffic models. Theory of traffic management. Traffic light signals, roundabouts, coordination, public transport priority. Urba	an and highway m	anagement.			
Traffic excesses man	agement. Road assessment and maintenance methods. Health risks assessment					

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:

FCE, CAE.

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 Martin Jareš, Petr Chmela	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	Reasons for building of integrated transport systems, principle of integration, dividing of integration methods, traffic, infrastructure, technical, organizational methods, integration of							
tariff, sales systems, in	formation systems, marketing of system, examples of non-integration.							
16STK	Simulation and Testing of Vehicle Body and Systems	ZK	3					
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 carriage.								

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

15JBA	Language - English 4	ZK	2					
Presenta	Presentation Skills - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work engagement. Optional courses for							
FCF CA								

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:

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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 Josef Svoboda, Michal Cenkner, Pemysl Toman, Josef Mik	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	Z	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

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 Pavla Pecherková, Jana Kuklová Jana Kuklová (Gar.)	Z	2	0P+2C+4B	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+4B	Z	ZP
14XN1	Master Project 1	Z	2	0P+2C+4B	Z	ZP
15XN1	Master Project 1	Z	2	0P+2C+4B	Z	ZP
16XN1	Master Project 1 P emysl Toman, Josef Mík	Z	2	0P+2C+4B	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+4B	Z	ZP
18XN1	Master Project 1 Daniel Kytý, Václav Rada, Nela Kr má ová	Z	2	0P+2C+4B	Z	ZP
20XN1	Master Project 1 Ji í R ži ka, Milan Sliacky	Z	2	0P+2C+4B	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+4B	Z	ZP
22XN1	Master Project 1 Michal Frydrýn, Luboš Nouzovský, Zden k Svatý, Karel Kocián, Jakub Nová ek	Z	2	0P+2C+4B	Z	ZP
23XN1	Master Project 1	Z	2	0P+2C+4B	Z	ZP

11XN2	Master Project 2 Pavla Pecherková, Jana Kuklová Jana Kuklová (Gar.)	Z	2	0P+2C+8B	L	ZP
12XN2	Master Project 2 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+8B	L	ZP
14XN2	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, Tomáš Fíla, 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 Josef Svoboda, Michal Cenkner, Pemysl Toman, 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, Tomáš 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 Stanislav 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-23/24

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

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

Credits in the group: 6 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
00Y2XN	Active participation in a scientific project, workshop, short-term trip abroad  Patrik Horaž ovský Patrik Horaž ovský (Gar.)	KZ	2	2P+0C		PV
17Y2AM	Application of Marketing Tools in Transportation	KZ	2	2P+0C	L	PV
12Y2BM	Safety on The Local Roads	KZ	2	2P+0C	Z	PV
23Y2BP	Security Class	KZ	2	2P+0C	Z	PV
21Y2BS	Unmanned aircraft systems 2 Tomáš Tlu ho, Michal erný Jakub Kraus	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 Ladislav Capoušek	KZ	2	2P+0C+8B	L	PV
12Y2DU	Transport in the Context of Sustainability 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 Miroslav Veliš	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 Magdalena Hykšová Magdalena Hykšová (Gar.)	KZ	2	2P+0C	L	PV
23Y2MA	Risk Analysis and Management	KZ	2	2P+0C	L	PV
21Y2MQ	Quality Management Luboš Socha	KZ	2	2P+0C+8B	L	PV
15Y2MS	Sociology for Managers Martina Śmidochová	KZ	2	2P+0C	Z	PV
21Y2MK	Marketing of Air Transport Peter Vittek Peter Vittek	KZ	2	2P+0C+8B	Z	PV
12Y2MH	Measurement and Modeling of Traffic Noise	KZ	2	2P+0C	L	PV
12Y2MI	Urban Engineering	KZ	2	2P+0C	L	PV
18Y2MP	Finite Element Method And Its Application  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	KZ	2	2P+0C	L	PV
17Y2MO	Zuzana arská International Organisations in Transportation	KZ	2	2P+0C	L	PV
17Y2MS	Microsimulation of Railway Operation  Zden k Michl Zden k Michl (Gar.)	KZ	2	2P+0C	Z	PV
17Y2MD	Modelling and optimization on transport networks	KZ	2	2P+0C	Z	PV
21Y2MC	CNS Systems Modelling Stanislav Pleninger Stanislav Pleninger	KZ	2	2P+0C+8B	Z	PV
17Y2MT	Modern History for Engineering Students Petra Skolilová Petra Skolilová (Gar.)	KZ	2	2P+0C	Z	PV
21Y2MG	Military Aerospace Technologies: Applications and Global Dynamics	KZ	2	2P+0C	Z	PV
12Y2MZ	Modernization of Railway Lines and Stations	KZ	2	2P+0C	L	PV
12Y2NS	Dagmar Ko árková, Miroslav Veliš  Shared Space Design	KZ	2	2P+0C	Z	PV
14Y2OP	Vojt ch Novotný, Karel Hájek  Object Oriented Programming in Transport	KZ	2	2P+0C	L	PV
15Y2OZ	Health Protection in Transportation and EU	KZ	2	2P+0C	 Z	PV

	Specialised French for Transportation and			T T		
15Y2OF	Telecommunications	KZ	2	2P+0C	Z	PV
18Y2OB	Optical Contactless Strain Measurements	KZ	2	2P+0C	L	PV
16Y2PG	Computer Graphics and Virtual Reality Petr Bouchner, Stanislav Novotný	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	KZ	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  Jan Feit	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
21Y2UL	Aircraft Maintenance Kate ina Stuchlíková	KZ	2	2P+0C+8B	L	PV
14Y2UI	Artificial Intelligence	KZ	2	2P+0C+8B	Z,L	PV
18Y2UB	Accident Biomechanics and Safety	KZ	2	2P+0C	L	PV
23Y2VZ	Leadership and Human Resource Development	KZ	2	2P+0C	L	PV
18Y2VC	Computational Mechanics in Transportation	KZ	2	2P+0C	L	PV
23Y2VR	Cope with Risks in Engineering Branches	KZ	2	2P+0C		PV
15Y2ZA	Basic Principles of English Academic Writing and Abstract in English  Dana Boušová	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-23/24 Name=Comp. Sel. Courses Master Full-Time DS from 2023/24

00Y2XN	Active participation in a scientific project, workshop, short-term trip abroad	KZ	2			
17Y2AM	Application of Marketing Tools in Transportation	KZ	2			
Application of marketing	pplication of marketing principles in transport issues, marketing tools suitable for transport, case studies of the use of marketing in the sphere of public passenger transport.					
12Y2BM	Safety on The Local Roads	KZ	2			
Classification of road ac	cidents rates, social looses. Collision points, diagrams. Tools and methods for safer road transportation. Crossroads from the po	oint of view of safe	ty. Psychological			
right of way. Roundabo	uts. Pedestrian transport, cyclists. Traffic lights coordination. Transport control and regulation.					
23Y2BP	Security Class	KZ	2			
The most prevalent top	The most prevalent topics include data management, data and text mining applications, terrorism informatics, deception and intent detection, terrorist and criminal social network					
analysis, crime analysis	s, cyber-infrastructure protection, transportation infrastructure security, and information assurance, among others.					

Modern trends in unmanned aircraft development. Use of unmanned aircraft. Managerial activities related to the operation of unmanned aircraft. Flights beyond 14Y2C1 CATIA I  Fundaments of working with CATIA, making basic parts and bodies. Making 2D sketches, geometric stucture, parametric linking, making adaptive models from and export of made parts and bodies. Making assemble and visualization.	KZ I the applic	2
14Y2C1 CATIA I Fundaments of working with CATIA, making basic parts and bodies. Making 2D sketches, geometric stucture, parametric linking, making adaptive models from and export of made parts and bodies. Making assemble and visualization.		able legislation.
and export of made parts and bodies. Making assemble and visualization.	KZ	2
	om 2D ske	tches. Import
14Y2C2   CATIA II	KZ	2
Extension of basic course. Modeling compound bodies. Possibility of enumeration, comunications with other systems. Surface x solid bodies. Kinematic med		<del>-</del>
and project cooperation. Outputs of projects.		-
1 - 1 - 7 - 7 - 7 - 7 - 7	KZ	2
Design of systems with defined reliability. The impact of changing parameters and subsystems within a system. System sensitivity computing, definition of so matrices and their usability in system design.	ensitivity tu	nctions and
	KZ	2
Introduction to CRM. Analysis of air accidents. Human factor. Error. Historical development of CRM. Health and fitness. Stress and its effect on the human by		e Sleep &
Vigilance. Information Processing. Situational Awareness. Workload Management. Decision Making. Communication. Leadership & Decision Making.	KZ	2
Definitions of sustainable transport, historical context, development in our country and in the world. Sustainable development and sustainable transport. Dema		
of transport. Examples of sustainable transport. Biofuels. Electromobility. New trends in transport. Practical examples.		
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	KZ	2
Introduction into broader view of traffic problems with regard to the work with texts (Physics for drivers, abusing alcohol during driving, exhaustion, getting of in traffic, traffic accident, traffic psychology in the internet etc.)	driving lice	ence, children
	KZ	2
Basic theory and calculations of more mass systems. Analysis of the forces acting between the vehicle and transport route. Creation of dynamic models of vehicles and transport route.		ansport routes.
Vibration of systems with a finite number of degrees of freedom. Methods of stiffness constants and pliability constants. Fundamentals of vibration of bridges. Of oscillation, Experimental methods in dispance.	riteria for t	he admissibility
of oscillation. Experimental methods in dynamics.  18Y2EM Electron microscopy	ΚZ	2
Basic principles of electron microscopy, construction, control and maintenance of SEM, sample preparation, signal detection, types of detectors and data ev	1	
analysis, quantification of results and automation of data processing, energy dispersive X-ray microanalysis and other analytical methods in electron micros	copy. Evalu	ation of data
obtained from ED detector, practical examples of ED microanalysis on samples.	<del>/7</del>	
16Y2EE   Emissions and Ergonomics of Vehicles   I Emissions and ergonomy of vehicles and the influence on man and nature. National and international law related to the hygiene. Noise and vibrations - source	KZ	2 In propagation
physical values, ways of measuring, prevention, elimination. Exhausts - creation, measurement, reduction, non-regular fuels and drives. Ergonomy - sitting, sta		
reach. Condition - heating, ventilation, air-conditioning, filtration, tiredom.		
· · · = · · · ·   · · · · · · · · · ·	KZ	2
UMT history and development in Prague and other cities in the world. Building and operation of public tram, bus, and trolleybus networks. Underground build UMT types. UMT development in small towns. Particularities of investment and operation financing of individual UMT types. Historic and present models of U		
inspection and blind passengers. Tourism & Durts with the state of the	nvii iiilaile	ing. Hanoport
	KZ	2
Theories of corporate finance - financial statements, budget, forecast. Financial policy of the company. Financial resources - long-term financial resources, or	epreciation	n, retained
earnings, shares, bonds, loans, leasing, capital. Financial and economic analysis of the company - structure and content.  23Y2FB Physics for Security Branches	ΚZ	2
Grounds of physics of substances and phenomena at extreme conditions. Grounds of rheology. Physics of Earth's interior. Geophysics. Physics of atmospherations of the conditions of the conditions.		
dengineering branches directed to safety.		
	KZ	2
Atomistic models, lattice defects influence on properties of materials, stiffness, plasticity, strength, fracture, fatigue, creep, corrosion, effects of environment behavior are the main discussed topics.	and loading	g on materials'
	KZ	2
Roads and road traffic in the Ancient Age, corridors of main mediveal pathways. Development of road traffic in the modern period, acceleration of road trans		
1st part of 20th century. Development of road layout, geometric and construction layers. Beginning of modern road civil engineering. Development of road tra	avelling in r	modern period.
History of road intercections, bridges and traffic control, development of road signs.	<del>/7</del>	
16Y2HP   Vehicle Hygiene   I Emissions and ergonomy of vehicles and the influence on man and nature. National and international law related to the hygiene. Noise and vibrations - source	KZ   ces creation	2 n propagation
physical values, ways of measuring, prevention, elimination. Exhausts - creation, measurement, reduction, non-regular fuels and drives. Ergonomy - sitting, sta		
reach. Condition - heating, ventilation, air-conditioning, filtration, tiredom.		
1 3	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 postal network, optimizing logistics processes in the post. The appreciation of the real implementation of the Czech post in operation both in lectures and in the		
desk.		or tire praetical
12Y2IS Urban Networks	KZ	2
The importance and the position of UN as public and technical infrastructure / utillities, metodology of the UN master planning, of UN design, UN coordination	n, UN inst	allation and UN
operation (basic technical standards of UN, trenchless technologies for UN).  14Y2JM One-Chip Controllers	KZ	2
One-chip controllers architecture, embedded peripherals (counters, timers, converters, ports) and their utilisation. Practical tasks are programmed with the a		
15Y2JH Job Hunting in English	KZ	2
The source provides a provided suide to emploise for a lab in Familia. The intended provides a recording to the familiar for a lab in Familiar to the familiar formation and the famili	_	this process,
The course provides a practical guide to applying for a job in English. The interview process is mapped out, with the course including skills practise for all the	w. KZ	2
including specifics for job-hunting in English. Students will also be introduced to the English vocabulary and phraseology necessary for a successful interview		,
including specifics for job-hunting in English. Students will also be introduced to the English vocabulary and phraseology necessary for a successful intervier 14Y2KI Capital Investment in Transportation and Telecommunications	1	_
including specifics for job-hunting in English. Students will also be introduced to the English vocabulary and phraseology necessary for a successful intervier 14Y2KI Capital Investment in Transportation and Telecommunications  Financial market, investment desicion making - long term goals and investment strategies, long term financing	KZ	2
including specifics for job-hunting in English. Students will also be introduced to the English vocabulary and phraseology necessary for a successful interviee  14Y2KI Capital Investment in Transportation and Telecommunications  Financial market, investment desicion making - long term goals and investment strategies, long term financing  16Y2KV Car Body Design  Personal cars body, high-load car body, bus car body, and motorcycle as a construction set. Principles of design, production, testing and operation. Materials	KZ s used for o	2 car body
including specifics for job-hunting in English. Students will also be introduced to the English vocabulary and phraseology necessary for a successful interviee  14Y2KI Capital Investment in Transportation and Telecommunications  Financial market, investment desicion making - long term goals and investment strategies, long term financing  16Y2KV Car Body Design	KZ s used for o	2 car body

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		
12Y2KE	Landscape Ecology	KZ	2
	ndscape - definition, types, evolution. Landscape systems. Anthropogenic impacts on landscape. Methods using for evaluatin		
	tions in landscape ecology. Landscape planning.	g	···· g····,
21Y2LS	Air Traffic Services	KZ	2
	rech Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, A		
	akia. ATS - Model of financing. Training Systém of Air Traffic Controllers. Future development of ATS.	AFF a ACC contic	ii. I iistory of Ar S
		1/7	0
11Y2LG	Logics of Engineer's Judgement	KZ	2
"	ineer's judgement, its propositional and predicative logical base. Solutions of logical tasks through the methods of truthfulness	ss and semantic a	naiysis charts.
	Logical basis for network design for the solution of technical tasks.		
23Y2MA	Risk Analysis and Management	KZ	2
Concept of risks and te	ms. Risk sources, definition of hazard, impacts and risks. Methods for identification, analysis, assessment and management	of risks. Risk eng	ineering targets
and good engineering p	ractice. Methods, tools and techniques for risk engineering. System of systems risk. Application of strategic and system appı	roach for benefit o	f 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	agement system. E	Environmental
management systems.	ntegrated management systems. Risk management in the context of the requirements of ISO standards. Sectoral quality mana	agement systems.	Comprehensive
quality management, ex	cellence models and corporate social responsibility. Quality audits.		
15Y2MS	Sociology for Managers	KZ	2
	o a corporation. Corporation and its organization. Corporation and its running - human role and communication. Corporation,		cial system.
	in free market economy. Corporate directorship, work groups, adaptation, strife, different roles and positions in corporation.		-
21Y2MK	Marketing of Air Transport	KZ	2
	se "Marketing of All Transport" is the management of activities and processes using available marketing tools and processes	1	_
	cales of goods and services in the aviation industry. In addition to the theoretical foundations of marketing, the lectures prese	· ·	
		ili systems oi mai	ket, competition
	reation of marketing strategies and planning.	1/7	0
12Y2MH	Measurement and Modeling of Traffic Noise	KZ	2
	to noise from traffic. Noise from rail transport. Noise from road traffic. Measurement and calculation of noise from rail traffic.	Measurement and	d calculation of
noise from road traffic.	Modelling of traffic noise in the CADNA A.		
12Y2MI	Urban Engineering	KZ	2
Teaching aming on utility	es storage in area, coordination engineering activities in area, arrangement of public space, concepement of public spaces.		
18Y2MP	Finite Element Method And Its Application	KZ	2
	nulation of the Finite Element Method. Direct Stiffness Method used in structural mechanics. Evaluation of stiffness matrices	for the basic elem	nents using
variational principles. E	ement formulation (bar and beam elements, CST, LST, quadrilateral, tetrahedral and brick elements). Natural coordinates, na	atural shape funct	ions and
		•	
l isoparametric represen	ation, Numerical integration, Introduction to dynamics, FEM programming.		
	ation. Numerical integration. Introduction to dynamics. FEM programming.	K7	2
16Y2MK	Quality Methods for Vehicles	KZ	2
16Y2MK Quality management m		I I	_
16Y2MK Quality management m (team) design.	Quality Methods for Vehicles ethods list, customer data acquisition and analysis of customer requirements, QFD, DFM, DFA, DFS. FMEA (Failure mode ef	fect analysis). Ele	ments of parallel
16Y2MK Quality management m (team) design. 12Y2MD	Quality Methods for Vehicles ethods list, customer data acquisition and analysis of customer requirements, QFD, DFM, DFA, DFS. FMEA (Failure mode ef  Methods of Traffic Regulation and Prediction	fect analysis). Ele	ments of parallel
16Y2MK Quality management m (team) design. 12Y2MD Basic ways of traffic pro	Quality Methods for Vehicles ethods list, customer data acquisition and analysis of customer requirements, QFD, DFM, DFA, DFS. FMEA (Failure mode ef  Methods of Traffic Regulation and Prediction gnosis, traffic prognosis for large area (calculation of future traffic volumes, calculation of future traffic volumes between areas (	fect analysis). Ele	ments of parallel
16Y2MK Quality management m (team) design. 12Y2MD Basic ways of traffic pro modal split, traffic distril	Quality Methods for Vehicles ethods list, customer data acquisition and analysis of customer requirements, QFD, DFM, DFA, DFS. FMEA (Failure mode ef  Methods of Traffic Regulation and Prediction gnosis, traffic prognosis for large area (calculation of future traffic volumes, calculation of future traffic volumes between areas (bution to road network). Shock wave in traffic flow. Service levels and their traffic volumes. Acceleration noise.	fect analysis). Elei  KZ  (analogical and sy	ments of parallel
16Y2MK Quality management m (team) design. 12Y2MD Basic ways of traffic pro	Quality Methods for Vehicles ethods list, customer data acquisition and analysis of customer requirements, QFD, DFM, DFA, DFS. FMEA (Failure mode ef  Methods of Traffic Regulation and Prediction gnosis, traffic prognosis for large area (calculation of future traffic volumes, calculation of future traffic volumes between areas (	fect analysis). Ele	ments of parallel
16Y2MK Quality management m (team) design. 12Y2MD Basic ways of traffic pro modal split, traffic distril 17Y2MO	Quality Methods for Vehicles ethods list, customer data acquisition and analysis of customer requirements, QFD, DFM, DFA, DFS. FMEA (Failure mode ef  Methods of Traffic Regulation and Prediction gnosis, traffic prognosis for large area (calculation of future traffic volumes, calculation of future traffic volumes between areas (bution to road network). Shock wave in traffic flow. Service levels and their traffic volumes. Acceleration noise.	fect analysis). Elei  KZ (analogical and sy	ments of parallel  2 nthetic methods,
16Y2MK Quality management m (team) design. 12Y2MD Basic ways of traffic pro modal split, traffic distril 17Y2MO International relations in	Quality Methods for Vehicles ethods list, customer data acquisition and analysis of customer requirements, QFD, DFM, DFA, DFS. FMEA (Failure mode ef  Methods of Traffic Regulation and Prediction gnosis, traffic prognosis for large area (calculation of future traffic volumes, calculation of future traffic volumes between areas ( pution to road network). Shock wave in traffic flow. Service levels and their traffic volumes. Acceleration noise.  International Organisations in Transportation	fect analysis). Elei  KZ (analogical and sy	ments of parallel  2 nthetic methods,
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15Y2OZ	Health Protection in Transportation and EU	KZ	2
	ransportation in CR in the past and present. Conditions before 1989 and after, current legislature, future prospects. Harmonisantal principles of health protection and support in selected EU countries.	ation of legislation (	with other EU
15Y2OF	Specialised French for Transportation and Telecommunications	KZ	2
	(public transport, railway, air, road and ship transport) and telecommunications terminology. Special focus on independent spe	aking and writing s	,
18Y2OB	Optical Contactless Strain Measurements	KZ	2
	ts will get theoretical knowledge and practical experience in optical strain measurement methods. Students will get experience ed cameras for acquisition of suitable image data and with digital image correlation algorithms for displacements measuremer		=
16Y2PG	Computer Graphics and Virtual Reality	KZ	2
	and processing of bitmap and vector 2D graphics, 3D virtual scenes and algorithms used for their computerized processing. Ado	1	-
	or creation and processing of 2D, 3D and interactive graphics, and basics of programming language VRML and graphic librarie	<del></del>	
22Y2PS	Traffic Accidents Computer Simulation and Analysis	KZ	2
	nulation, multi body systems and vehicle active safety systems, vehicle slipping, external influence on virtual model, crash test pedestrian, traffic accident simulation and analysis.	s evaluation, single	e-track vehicle,
15Y2PT	Food in Transportation	KZ	2
	nteraction transportation and foodstuffs. The health risks. Hygienic safeguard. The practical examples from the Czech Republic	1	I
dining cars, work train	ns and other railroad equipment. Legislation.		
23Y2PD	Practical vehicle dynamics	KZ	2
	namics. Multibody vehicle modeling. Modeling with IPG CarMaker. Standard and development stage experiments with road vel	nicles. Realization	of experimental
15Y2PD	passenger vehicles. Experiment evaluation.  Practical Spanish for Transportation	KZ	2
	Fractical Spanish for transportation   munication skills, training of correct written expression of formal character, basic technical vocabulary, cultural specifics of the	1	I
Terminology of trans	port and commerce.		
21Y2PP	Law and Operation in Air Transport	KZ	2
	tion law. International conventions on civil aviation. International organisations and including of the Czech Republic in these organisations.		
	f state administration and state supervision in matters of civil aviation, in accordance with Act No. 49/1997 Col. Facilitation. Re and cargo. The safe transport of dangerous goods.	sponsibilities of air	carriers for
20Y2PR	Prediction of time series	KZ	2
	eries prediction, meaning of prediction, basics of quantitative prediction. Methods for predictive quality evaluation, descriptive si	1	I
	for general formula of loss function. Calculation and programming environment R. Regression models, basics of linear regres		
regression, statistica	I tests of linear dependence, selection of input variables.		
12Y2PV	Public transport priority	KZ	2
•	ne backbone of sustainable mobility. Public transport priority (PTP) in strategic documents. PTP in the Czech Republic and abro elationship between Basics of public transport stops and stations design. PTP measures and evaluation of their operation. Eco		_
	preparing PTP measures.	Thornic and environ	ieritai eriects oi
14Y2PI	Process Information Systems in Transportation	KZ	2
	ailed usage of transport information systems, e.g. EFC, ePurse and transport check-in systems for public transport with focus of		
	ed Architecture). Inforamtion systems implementation and operations description in the Czech Republic (technical and process	<del>-</del>	,
14Y2PJ	C++ Programming Language	KZ	2
	basics of C++ programming language. Class, object, constructor, destructor, inheritance, abstract class, virtual methods, except data type implementation in C++.	lions, streams, meti	nod and operato
14Y2PH	CAD Interface Programming	KZ	2
	interface programming techniques with the help of LIST and VBA programming languages. Possibilities of proper objects (com		
	in CAD systems. Programming of cooperation with other applications (databases, spread-sheets).		
11Y2PM	Programming in MATLAB	KZ	2
To explain the princip Matlab.	ole of modelling and simulation, description of Matlab environment and its settings, optimization and program code debugging,	data fitting and de	signing GUI in
21Y2PL	Operational Aspects of Aerodromes	KZ	2
	of aerodromes. Location of aerodrome and orientation of runways. Requirements for apron. Capacity of airports runways and	1	I
	ng units. Protection against unlawful interference. Local transport connection. Environmental protection.		
15Y2PU	Publications and Their Creation	KZ	2
= = =	Footnotes and references. Exploration of facts. Quotations. Formal document layout. Working with information databases. Typ	ographic principles	s. Typographic
	ex/LaTeX. Practical creation of simple scientific documents.	1/7	
12Y2RD	Realization of Transport Buildings  ypes. Project Documentation Types. Building Code. Land Permission and Building Permission Process. Building Process. Projec	KZ	2 oct Managemen
17Y2RZ	Control of Transport Processes	KZ	2
	ansport system, decomposition, factors influencing control, quality diagnosis, methods of control, systems for decision making	1	-
		• • •	0.
Theoretical bases, tr	Seminar on Political Philosophy	KZ	2
Theoretical bases, tr telematics. 15Y2SP Interpreting of philos	ophical texts, view of society, state and their system of government.	1	
Theoretical bases, tr telematics. 15Y2SP Interpreting of philos 17Y2SJ	ophical texts, view of society, state and their system of government.  Network Timetabling on the Railway	KZ	2
Theoretical bases, tr telematics. 15Y2SP Interpreting of philos 17Y2SJ Timetable samples.	ophical texts, view of society, state and their system of government.  Network Timetabling on the Railway  Capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds	KZ and supplements. F	2 Rolling stock
Theoretical bases, tr telematics. 15Y2SP Interpreting of philos 17Y2SJ Timetable samples. Circulation planning.	ophical texts, view of society, state and their system of government.  Network Timetabling on the Railway  Capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds a Rules of train-diagramm creating. Timetables for more service-levels on the line. Construction slot conflicts between passenger	KZ and supplements. F	2 Rolling stock
Theoretical bases, tr telematics. 15Y2SP Interpreting of philos 17Y2SJ Timetable samples. Circulation planning.	ophical texts, view of society, state and their system of government.  Network Timetabling on the Railway  Capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds a Rules of train-diagramm creating. Timetables for more service-levels on the line. Construction slot conflicts between passenger times, timetables for lines under construction.	KZ and supplements. F r- and freight transp	2 Rolling stock
Theoretical bases, tr telematics. 15Y2SP Interpreting of philos 17Y2SJ Timetable samples. circulation planning. relations and waiting 16Y2ST	ophical texts, view of society, state and their system of government.  Network Timetabling on the Railway  Capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds a Rules of train-diagramm creating. Timetables for more service-levels on the line. Construction slot conflicts between passenger	KZ and supplements. Fr- and freight transp	2 Rolling stock port. Network lin
Theoretical bases, tr telematics.  15Y2SP Interpreting of philos 17Y2SJ Timetable samples. Circulation planning. relations and waiting 16Y2ST Micro, nano and spe vehicles, laser and la	ophical texts, view of society, state and their system of government.  Network Timetabling on the Railway  Capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds a Rules of train-diagramm creating. Timetables for more service-levels on the line. Construction slot conflicts between passenger times, timetables for lines under construction.  Special Technologies in Transport and Telecommunications	KZ and supplements. Fr- and freight transp KZ gy in roduction and	2 Rolling stock port. Network lin
Theoretical bases, tr telematics.  15Y2SP Interpreting of philos 17Y2SJ Timetable samples. Circulation planning. relations and waiting 16Y2ST Micro, nano and spe vehicles, laser and la	pohical texts, view of society, state and their system of government.  Network Timetabling on the Railway Capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds a Rules of train-diagramm creating. Timetables for more service-levels on the line. Construction slot conflicts between passenger times, timetables for lines under construction.  Special Technologies in Transport and Telecommunications cial technologies, electric arc and its applications, plasma technologies, dipping, beam technologies, electron beams technologies.	KZ and supplements. Fr- and freight transp  KZ gy in roduction and	2 Rolling stock port. Network lin 2 I mending of

 $vehicles, laser\ and\ laser\ technologies,\ soldering,\ gluing,\ ultrasound,\ diffusion,\ friction\ and\ explosion\ technologies,\ micro\ stoves,\ gas.$ 

18Y2SD	Reliability and Diagnostics, Experimental Methods	KZ	2
-	d on theoretical background and practical experience in the field of reliability of constructions, implementation of diagnostic pro		ection of materia
	ation of residual life of structures. For this purpose, non-destructive methods of experimental mechanics (e. g. strain-gauge me		
	iding electron microscopy, will be used.		• • • • • • • • • • • • • • • • • • • •
I5Y2SR	Stylistics and Rhetorics	KZ	2
	d written expression as a means of human communication. Basic information about speech, articulation, oral and written lang	1	ı — speak well-voca
	Language semantics, language syntactic and the pragmatic aspect. Creative thought and its oral and written expression. Practice and the pragmatic aspect.		
5Y2TS	Technician and Contemporary Society	KZ	2
-	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		_
=	papers, what are the sights for, interest in public affairs - a hangover from the past?	on a r o, it must be	ilde it 5 on ti
OY2TE	Technology of Electronic Systems	KZ	2
	rectiniology of Electronic Systems is for an effective operation of electronically controlled systems. Maintaining, meassuring, optimization of safety and reliability	1	l
· -	circuits, assembly operations, interconnection and repairs technologiesusers and operators.	or complex systems	s. Serniconducti
		1/7	
4Y2TU	Telecommunications Systems and Multimedia	KZ	2
	nmunications namely applied in transport solutions, identification and quantification of telecommunications networks and services of guaranteed applies guality, true separations of the bandayay principles.	es performance bas	sea on reaunaai
	oning of guaranteed service quality, two generations of the handover principles.	1/7	
6Y2TT	Transportation and Building Technology and Equipment	KZ	2
=	uilding technology and equipment. Transport of solid and mass material, soil and rock above all. Highway and underground co	•	
•	and construction features, delivered mass calculation, economy of operation. Technics and technology of underground constru	actions. Terrestrial ve	ehicles operation
	ology (ultrasound, laser, GPS, total stations).		Т
3Y2TP	Creation of legal and technical regulations	KZ	2
•	n, structure of the bills of law, legal process, compatibility with the EC law, the creation of technical standards and their public	ation, UNMZ (Czech	n Office for
	and testing) in Czech Republic, organizations CEN, CENELEC and ETSI, the notification process.		
1Y2UL	Aircraft Maintenance	KZ	2
pproved Maintenan	ce Organisations (AMOs), Continuing Airworthiness Management Organisations (CAMOs), Maintenance Training Organisatio	ns (MTOs), technica	al documentation
· ·	nstructions for Continued Airworthiness) instructions, aircraft release to service procedure, maintenance programmes and scl	heduling, modification	ons and genera
epair methods, aircr	aft centre of gravity and weights, human factors in aircraft maintenance.		
4Y2UI	Artificial Intelligence	KZ	2
istory of artificial int	elligence, knowledge, its representation including frames, state space search, constraints, genetic algorithms, machine learn	ing.	
8Y2UB	Accident Biomechanics and Safety	KZ	2
natomy of man. Me	hods of Medical Diagnostics - RTG, CT, MRI, US. Dynamics of traumatic events. Factors influencing the severity of an accider	nt and the extent of a	ı a traffic accider
njuries in road traffic	Pedestrian injuries. Injury in railway and air traffic accidents. Analysis of biomechanical events in accidents and their compu	tational modeling. P	rinciples of
eatment and rehabi	itation. Protective elements and safety measures in transport.		
3Y2VZ	Leadership and Human Resource Development	KZ	2
troduction to the st	udy of human resources, human resources management, corporate goals, strategies, cultural and ethical aspects. Team man	agement, communi	ı cation in teams
	in human resources, ethics and corporate culture, cross-cultural differences. The labor code. Introduction into protocols.		
8Y2VC	Computational Mechanics in Transportation	KZ	2
	rk and variational principles in FEM. Bar shaped, planar and three - dimensional structures in FEM. FEM in statics and in dyl	1	l
	and viscoelastic material. FEM in problems of biomechanics. Numerical analysis of structural parts with programme ANSYS		anorial dy diorric
3Y2VR	Cope with Risks in Engineering Branches	KZ	2
	branches directed to risks, procedures used in risk engineering, ensuring the secured systems, ensuring the safe systems, er		_
	Basic Principles of English Academic Writing and Abstract in English	KZ	2
	rasal bank according to students' specialisations, rhetorical analysis or texts/abstracts, drafting an abstract, providing effectiv	e feedback.	
heory, creating a ph		1.75	_
heory, creating a ph	Traffic Calming	KZ	2
heory, creating a ph 2Y2ZK rinciples of traffic ca	Iming. Solution of road network organization. Urban road layouts. Psychological and physical obstacles (measures of traffic o		!
2Y2ZK Principles of traffic ca traffic calming meas		calming) and their co	!
heory, creating a ph 2Y2ZK rinciples of traffic ca raffic calming meas	Iming. Solution of road network organization. Urban road layouts. Psychological and physical obstacles (measures of traffic o		!
Theory, creating a ph 2Y2ZK Principles of traffic caraffic calming measures 23Y2ZM	Iming. Solution of road network organization. Urban road layouts. Psychological and physical obstacles (measures of traffic ourses in crossroads. Pedestrian zones. Residential streets and zones.	calming) and their co	ombinations.
heory, creating a ph 2Y2ZK rinciples of traffic ca raffic calming measi 3Y2ZM istory and the prese	Ilming. Solution of road network organization. Urban road layouts. Psychological and physical obstacles (measures of traffic ours in crossroads. Pedestrian zones. Residential streets and zones.  Intelligence Means and Methods	KZ ocedures of collectir	ombinations.  2  ng and evaluatir

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:

. toto on the grou	γ.					
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	٧

15JCZ2	Czech Language for Foreign Students 2 Irena Veselková	Z	0	0P+2C	L	٧
15JCZ3	Czech Language for Foreign Students 3 Irena Veselková	Z		0P+2C	Z	V
15JCZ4	Czech Language for Foreign Students 4	Z		0P+2C	L	V

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

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

Name of the block: Jazyky

Minimal number of credits of the block: 8

The role of the block: J

Code of the group: JZ-NP-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	Z	J
15J2l1	Language - Italian 1 Irena Veselková	Z	2	0P+2C+10E	3 Z	J
15J2N1	Language - German 1 Eva Rezlerová, Martina Navrátilová, Jana Štikarová	Z	2	0P+2C+10E	3 Z	J
15J2R1	Language - Russian 1 Marie Michlová	Z	2	0P+2C+10E	B Z	J
15J2S1	Language - Spanish 1 Nina Hricsina Puškinová	Z	2	0P+2C+10E	B 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	L L	J
15JBF3	Language - French 3 Irena Veselková	Z	2	0P+2C+10E	3 Z	J
15JBI3	Language - Italian 3 Irena Veselková	Z	2	0P+2C+10E	3 Z	J
15JBN3	Language - German 3 Eva Rezlerová, Martina Navrátilová, Jana Štikarová	Z	2	0P+2C+10E	3 Z	J
15JBR3	Language - Russian 3 Marie Michlová	Z	2	0P+2C+10E	Z	J
15JBS3	Language - Spanish 3 Nina Hricsina Puškinová	Z	2	0P+2C+10E	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	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	L 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 15.I2F1 Language - French 1 Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, feedback skills, summarising technical text content, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and technical registers and their use, language of management. Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, feedback skills, summarising technical text content, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and technical registers and their use, language of management. 15J2N1 Language - German 1 Ζ 2 Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, feedback skills, summarising technical text content, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and technical registers and their use, language of management. 15J2R1 Language - Russian 1 Ζ 2 Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, feedback skills, summarising technical text content, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and technical registers and their use, language of management. 15J2S1 Language - Spanish 1 Ζ 2 Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, feedback skills, summarising technical text content, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and technical registers and their use, language of management. 15.IRF2 Language - French 2 7 2 Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, feedback skills, summarising technical text content, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and technical registers and their use, language of management 15JBI2 Language - Italian 2 Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, feedback skills, summarising technical text content, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and technical registers and their use, language of management 15JBN2 Z Language - German 2 Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, feedback skills, summarising technical text content, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and technical registers and their use, language of management 15JBR2 Language - Russian 2 Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, feedback skills, summarising technical text content, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and technical registers and their use, language of management. Language - Spanish 2 Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, feedback skills, summarising technical text content, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and technical registers and their use, language of management. 15.JBF3 Language - French 3 Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation. Ζ 15.JBI3 Language - Italian 3 2 Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation. 15JBN3 Language - German 3 Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation. 15JBR3 Language - Russian 3 Ζ 2 Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation 15JBS3 Language - Spanish 3 Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation. 15JBF4 Language - French 4 Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation. 15JBI4 Language - Italian 4 Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation.

15JBN4	Language - German 4	ZK	2	
Grammar and stylistics.	Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of	of language struct	ure knowledge	
and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its				
features. Practice of ora	l and written presentation.			
15JBR4	Language - Russian 4	ZK	2	
Grammar and stylistics.	Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of	of language struct	ure knowledge	
and perceptive and com	ımunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Wo	rk with (profession	nal) text and its	
features. Practice of ora	l 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	of language struct	ure knowledge	
and perceptive and com	ımunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Wo	rk with (profession	nal) text and its	
features. Practice of ora	I 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
The subject deal	s with the problems of mathematical modelling of dynamical systems, estimation od these models and their utilization for prediction.	The results are illus	strated on
practical tra	ansportation tasks. Mathematical theory roots from probability and mathematical statistics and they use the methods of the Bayesian	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
	of engineer's judgement, its propositional and predicative logical base. Solutions of logical tasks through the methods of truthfulness	1	_
3	Venn's diagram method. Logical basis for network design for the solution of technical tasks.		
11Y2PM	Programming in MATLAB	KZ	2
	nciple of modelling and simulation, description of Matlab environment and its settings, optimization and program code debugging, da	1	_
	Matlab.		-
12BED	Road Safety Audit	Z,ZK	4
Schedules of applic	cations of safety assessments (especially Road Safety Audit, Road Safety Inspection) during the process of preparations, and of the p		of the road
network that shoul	d minimize traffic accident risks for all those who take part in road traffic. Application of European Directive 2008/96/EC on road safe	ty infrastructure ma	anagement.
12DAZP	Transport and Environment	Z,ZK	4
This course aims th	ne impact of transport on environment. The accent is put mainly on noise and vibration, emission, barrier effect and energy demands.	The noise measury	y is part and
	parcel of this course.		
12IDOS	Integrated Transport Systems	ZK	3
Reasons for build	ing of integrated transport systems, principle of integration, dividing of integration methods, traffic, infrastructure, technical, organiza	tional methods, inte	egration of
	tariff, sales systems, information systems, marketing of system, examples of non-integration.		
12IKD	Rail Transport Infrastructure	Z,ZK	5
Non-compensated	lateral acceleration, parameters eduction for transition curve and cant transition, curves without straight, track spacing change. Track det		Substructure
	design, slab track. Tram-train. Interoperability. Noise precautions. Railway line modernization for non-tilting and tilting trains	5.	
12NAPI	Design and Maintenance of Transportation Structures	Z,ZK	4
Design and const	ruction of cement-concrete pavements and their maintenance. Construction of bridge objects, examples and choice of bridge construction of bridge objects, examples and choice of bridge construction of bridge objects, examples and choice of bridge construction of bridge objects, examples and choice of bridge construction of bridge objects, examples and choice of bridge construction of bridge objects, examples and choice of bridge construction of bridge objects, examples and choice of bridge construction of bridge objects, examples and choice of bridge construction of bridge objects, examples and choice of bridge objects.	uction materials. Co	onstruction
	and operation of tunnels.		
12TEAP	Theory of Road Traffic Operation	Z,ZK	7
-	ers and their measurement, acquisition and processing. Road capacity analysis. Theoretical foundations and applications of mathematics and their measurement, acquisition and processing. Road capacity analysis. Theoretical foundations and applications of mathematics and their measurement, acquisition and processing.		
statistical and mi	croscopic traffic models. Theory of traffic management. Traffic light signals, roundabouts, coordination, public transport priority. Urbai	n and highway man	agement.
12TKVP	Traffic excesses management. Road assessment and maintenance methods. Health risks assessment.	7.71/	4
	Highway Engineering Materials	Z,ZK	4
The theory of road	d construction - Material Aspects. The course emphasizes the development of road construction from the beginning of the 20th centumaterials, understanding the production and placing of asphalt mixtures.	iry to the present, i	ocusing on
12UMUP		7 71/	5
	Sustainable Mobility and Land - Use Planning - objectives and tasks, development over time. Land-use planning tools. SUMP. Territorial and transport planning context. Ways of urb	Z,ZK	_
	nciples of the transport solution. The impact of transport on the size and shape of the city, on the development of the street and the s		
transport. Dasic pri	for pedestrian and bicycle transport. Suburbanization and transport. City economics.	quare and the road	is. Colutions
12VRZ	High Speed Rail Transport	KZ	3
	(HSR) transport characteristics and position in transportation system. Types / models of HSR systems, preparation of high speed rail	-	
Republic conditions	s. Non-adhesion HSR systems. City and region traffic service by HSR. HSR operating points. HSR worldwide network. HSR routing a	and traffic conception	n. Specific
	of HSR track construction and layout track parameteres.		r
12XN1	Master Project 1	Z	2
401/110	Master Project 2	Z	2
12XN2			
12XN2 12XN3	Master Project 3	Z	1

12Y2BM	Master Thesis for study programme DS Safety on The Local Roads	KZ	2
Classification of roa	ad accidents rates, social looses. Collision points, diagrams. Tools and methods for safer road transportation. Crossroads from the point right of way. Roundabouts. Pedestrian transport, cyclists. Traffic lights coordination. Transport control and regulation.	of view of safety. P	sychologica
12Y2DU	Transport in the Context of Sustainability	KZ	2
	inable transport, historical context, development in our country and in the world. Sustainable development and sustainable transport. D	I	
	of transport. Examples of sustainable transport. Biofuels. Electromobility. New trends in transport. Practical examples.		
12Y2IS	Urban Networks	KZ	2
The importance an	d the position of UN as public and technical infrastructure / utilities, metodology of the UN master planning, of UN design, UN coordi	nation, UN installa	ition and U
40\/0\/5	operation (basic technical standards of UN, trenchless technologies for UN).	1/7	
12Y2KE	Landscape Ecology  gy. Landscape - definition, types, evolution. Landscape systems. Anthropogenic impacts on landscape. Methods using for evaluating	KZ	2
Lanuscape ecolo	and its potential applications in landscape ecology. Landscape planning.	іапозсаре. І тасіа	geometry
12Y2KS	Rail Transport in Settlements and Regions	KZ	2
	nd development of railway infrastructure in Czech Republic. Arrangement of railway networks and junctions. Suburban railway service	s. Network configu	ration and
	ation of metro systems. Network configuration and operation of tram systems. Special thematic lectures (rail transport in selected cou	intries / regions).	Tr.
12Y2MD	Methods of Traffic Regulation and Prediction	KZ	2
Basic ways of traffic	c prognosis, traffic prognosis for large area (calculation of future traffic volumes, calculation of future traffic volumes between areas (ana		tic method
40\/0\41.1	modal split, traffic distribution to road network). Shock wave in traffic flow. Service levels and their traffic volumes. Acceleration		
12Y2MH	Measurement and Modeling of Traffic Noise  uction to noise from traffic. Noise from rail transport. Noise from road traffic. Measurement and calculation of noise from rail traffic. Me	KZ	2
meoretical illitoat	noise from road traffic. Modelling of traffic noise in the CADNA A.	asurement and Ca	arouratiUH C
12Y2MI	Urban Engineering	KZ	2
	eaching aming on utilities storage in area, coordination engineering activities in area, arrangement of public space, concepement of p	I	
12Y2MZ	Modernization of Railway Lines and Stations	KZ	2
	ing. AGC and AGTC Agreement. AGC and AGTC railway network. Principles of modernization (conceptual papers, definitions of basic c	I	l principles
Track geometrical	I characteristics on modernized railway lines. Superstructure and substructure on upgraded lines. Designing of railway stations. Bridgi	es and tunnels. De	evelopmen
	and realization of projects. Technical description of the tranzit corridors.		
12Y2NS	Shared Space Design	KZ	2
	its to the concept of integrated use of public spaces by sharing space with all users. Active promotion of settlements and sustainable Analysis of implemented foreign examples, principles of zone design in the context of legal and technical requirements. Linking traffic		
towns and cities.	and architecture in the process of designing quality public spaces.	engineening, urba	ιιι ριαιτιτιίς
12Y2PV	Public transport priority	KZ	2
	the backbone of sustainable mobility. Public transport priority (PTP) in strategic documents. PTP in the Czech Republic and abroad. Ty	I	1
ubile transport as			
of PTP measures		•	_
of PTP measures.	Relationship between Basics of public transport stops and stations design. PTP measures and evaluation of their operation. Econom	•	_
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12Y2RD Fransport Buildings 12Y2ZK Principles of traff  12ZSUZ Equipment for pass  14GISS Construction 14XN1 14XN2 14XN3 14XN4 14XNDD 14Y2C1 Fundaments of wor  14Y2C2 Extension of basic  14Y2CS Design of system  14Y2IS The use of informationstal network, option	Relationship between Basics of public transport stops and stations design. PTP measures and evaluation of their operation. Economic PTR. The process of preparing PTP measures.  Realization of Transport Buildings Types. Project Documentation Types. Building Code. Land Permission and Building Permission Process. Building Process. Project Economic Traffic Calming Traffic Calming Traffic Calming Traffic Calming Traffic calming measures in crossroads. Pedestrian zones. Residential streets and zones.  Railway Stations and Centres Renger transport. Platform construction. Access roads to platforms. Modification of railway stations according to the TSI PRM. Station of station heads for current ride. Junction stations. Crossing stations. Passenger stations. Moving stations. Public transport term  Geographical Information Systems  nof saving format of space-oriented information land-survey and cartography minimum basic tasks of spatial operations principles of Master Project 1  Master Project 1  Master Project 2  Master Project 3  Master Project 4  Master Thesis for study programme DS  CATIA I  orking with CATIA, making basic parts and bodies. Making 2D sketches, geometric stucture, parametric linking, making adaptive modern and export of made parts and bodies. Making assemble and visualization.  CATIA I  course. Modeling compound bodies. Possibility of enumeration, comunications with other systems. Surface x solid bodies. Kinematic and project cooperation. Outputs of projects.  Sensitivity of Systems  is 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 ation systems in the postal services (ITIS, and POST, T + T, PS, KMP, DS), application of information technology in the processing of imizing logistics processes in the post. The appreciation of the real implementation of the Czech post in operation both in lectures and in incirculation.	KZ conomics. Project M CZ Conomics. Project M	al effects of 2 lanagemen 2 la
12Y2RD Fransport Buildings 12Y2ZK Principles of traff  12ZSUZ Equipment for pass  14GISS Construction 14XN1 14XN2 14XN3 14XN4 14XNDD 14Y2C1 Fundaments of wor  14Y2C2 Extension of basic  14Y2CS Design of system  14Y2IS The use of informationstal network, option	Relationship between Basics of public transport stops and stations design. PTP measures and evaluation of their operation. Economic PTR. The process of preparing PTP measures.  Realization of Transport Buildings Types. Project Documentation Types. Building Code. Land Permission and Building Permission Process. Building Process. Project Eco.  Traffic Calming Traffic calming. Solution of road network organization. Urban road layouts. Psychological and physical obstacles (measures of traffic calming. Solution of road network organization. Urban road layouts. Psychological and physical obstacles (measures of traffic calming. Solution of road network organization. Urban road layouts. Psychological and physical obstacles (measures of traffic calming. Solution of road network organization. Urban road layouts. Psychological and physical obstacles (measures of traffic calming. Solution of road network organization. Urban road layouts. Psychological and physical obstacles (measures of traffic calming. Solution of road physical obstacles) (measures of traffic calming. Solution of road parts and zones. Residential streets and zones.  Railway Stations and Centres  Railway Stations and Centres  Geographical Information Systems  of saving format of space-oriented information land-survey and cartography minimum basic tasks of spatial operations principles of Master Project 1  Master Project 1  Master Project 2  Master Project 3  Master Project 4  Master Project 4  Master Thesis for study programme DS  CATIA I  Orking with CATIA, making basic parts and bodies. Making 2D sketches, geometric stucture, parametric linking, making adaptive moderance and export of made parts and bodies. Making assemble and visualization.  CATIA II  c course. Modeling compound bodies. Possibility of enumeration, comunications with other systems. Surface x solid bodies. Kinematic and project cooperation. Outputs of projects.  Sensitivity of Systems  is with defined reliability. The impact of changing parameters and subsystems within a system. System se	KZ conomics. Project M CZ Conomics. Project M	2 anagement 2 abinations.  3 ant solution 2 ation 2 1 1 8 18 2 18 18 2 18 18 2 18 18 2 18 18 2 18 18 18 18 18 18 18 18 18 18 18 18 18

14Y2OP	Object Oriented Programming in Transport	KZ	2
Jass, object, enca	psulation, inheritance, polymorphism, templates, retyping, stream, exceptions, repository, collections, virtual methods and classes. Professional from microscopic simulation system, discrete event simulation, celular automata simulation and virtual life area.	obiem cases wii	be chosen
14Y2PH	CAD Interface Programming	KZ	2
	interface programming techniques with the help of LIST and VBA programming languages. Possibilities of proper objects (commands)		rfaces, an
	applications creation in CAD systems. Programming of cooperation with other applications (databases, spread-sheets).		
14Y2PI	Process Information Systems in Transportation	KZ (	. 2
	tailed usage of transport information systems, e.g. EFC, ePurse and transport check-in systems for public transport with focus on arch ented Architecture). Inforamtion systems implementation and operations description in the Czech Republic (technical and process) inc		-
14Y2PJ	C++ Programming Language	KZ	2
- 1	basics of C++ programming language. Class, object, constructor, destructor, inheritance, abstract class, virtual methods, exceptions, str		
	overloading, abstract data type implementation in C++.		•
14Y2TU	Telecommunications Systems and Multimedia	KZ	2
ew trends in teleco	mmunications namely applied in transport solutions, identification and quantification of telecommunications networks and services performance.	rmance based o	n redunda
4.070111	architecture, provissioning of guaranteed service quality, two generations of the handover principles.	1/7	
14Y2UI	Artificial Intelligence	KZ	2
15J2A1	ory of artificial intelligence, knowledge, its representation including frames, state space search, constraints, genetic algorithms, machir  Language - English 1	Z	2
	carryuage - English i esentation Skills - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work eng	_	2
15J2F1	Language - French 1	Z	2
	ures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, fe		
chnical text conter	nt, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and techniques, elementary rhetorics of foreign language and practical application, formal and techniques, elementary rhetorics of foreign language and practical application, formal and techniques, elementary rhetorics of foreign language and practical application, formal and techniques, elementary rhetorics of foreign language and practical application, formal and techniques, elementary rhetorics of foreign language and practical application, formal and techniques, elementary rhetorics of foreign language and practical application, formal and techniques are supplied to the properties of the propert	nical registers an	d their us
	language of management.		
15J2I1	Language - Italian 1	Z	2
	ures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, fe		
cnnical text conter	nt, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and techn language of management.	licai registers ar	ia their us
15J2N1	Language - German 1	Z	2
	ures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, fe	_	_
	nt, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and techniques, elementary rhetorics of foreign language and practical application, formal and techniques are supplied to the control of the control o		
	language of management.		
15J2R1	Language - Russian 1	Z	2
	ures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, fe		
cnnical text conter	nt, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and techn language of management.	licai registers ar	ia their us
15J2S1	Language - Spanish 1	Z	2
	ures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, fe	_	_
	nt, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and techn		
	language of management.		
15JBA2	Language - English 2	Z	2
	esentation Skills - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work en	gagement.	
15JBA3	Language - English 3	Z	2
resentation skills	<ul> <li>expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work engagement. Option</li> <li>FCE, CAE.</li> </ul>	riai courses ior c	erincates
15JBA4	Language - English 4	ZK	2
	- expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work engagement.Option		
	FCE, CAE.		
15JBF2	Language - French 2	Z	2
	ures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, fe		
chnical text conter	nt, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and techn	ical registers an	d their us
15JBF3	language of management.  Language - French 3	Z	2
	tics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language level and study focus at the Faculty. Improvement of language level and study focus at the Faculty.	_	_
	communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with		
	features. Practice of oral and written presentation.		
15JBF4	Language - French 4	ZK	2
' <del>-</del>	tics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language level and study focus at the Faculty. Improvement of language level and study focus at the Faculty.	guage structure	_
nd perceptive and			toyt and it
	communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with	h (professional)	lext and ii
4E IDIO	features. Practice of oral and written presentation.		
15JBI2	features. Practice of oral and written presentation.  Language - Italian 2	Z	2
Frammatical Structi	features. Practice of oral and written presentation.	Z edback skills, su	2 ummarisir
Frammatical Structi	features. Practice of oral and written presentation.  Language - Italian 2  ures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, fe	Z edback skills, su	2 ummarisin
Frammatical Structi	features. Practice of oral and written presentation.  Language - Italian 2  ures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, feat, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and techn	Z edback skills, su	2 ummarisin
Grammatical Structi schnical text conter 15JBI3 Grammar and stylis	features. Practice of oral and written presentation.  Language - Italian 2  ures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, fent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and technical language of management.  Language - Italian 3  tics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language level.	Z nedback skills, su nical registers ar Z guage structure	2 ummarisin nd their us 2 knowledg
Grammatical Structi schnical text conter 15JBI3 Grammar and stylis	features. Practice of oral and written presentation.  Language - Italian 2  ures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, fent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and technical language of management.  Language - Italian 3  tics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with	Z nedback skills, su nical registers ar Z guage structure	2 ummarisin nd their us 2 knowledg
orammatical Structus chnical text conternation 15JBI3  Grammar and stylis and perceptive and	features. Practice of oral and written presentation.  Language - Italian 2  ures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, fe nt, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and technological language of management.  Language - Italian 3  tics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with features. Practice of oral and written presentation.	Z edback skills, su ical registers ar  Z guage structure h (professional)	2 ummarisin id their use 2 knowledg text and it
arammatical Structus chnical text conternation 15JBI3 Grammar and stylis and perceptive and 15JBI4	features. Practice of oral and written presentation.  Language - Italian 2  ures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, feet, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and technical language of management.  Language - Italian 3  tics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with features. Practice of oral and written presentation.  Language - Italian 4	Z edback skills, so ical registers ar  Z guage structure h (professional)	2 ummarisin id their use 2 knowledg text and it
TSJBI3 Grammar and stylis and perceptive and 15JBI4 Grammar and stylis and perceptive and 15JBI4 Grammar and stylis	features. Practice of oral and written presentation.  Language - Italian 2  ures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, fe nt, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and technological language of management.  Language - Italian 3  tics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with features. Practice of oral and written presentation.	Z edback skills, so ical registers ar  Z guage structure h (professional)  ZK guage structure	2 ummarisin id their us 2 knowledg text and it 2 knowledg

	Language - German 2	Z	2
	ures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills,		-
scrinical text conte	nt, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and tecl	hnical registers a	and their use
	language of management.		1
15JBN3	Language - German 3	Z	2
Grammar and styling	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la	inguage structur	e knowledge
and perceptive and	communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work w	vith (professional	) text and its
	features. Practice of oral and written presentation.		
15JBN4	Language - German 4	ZK	2
Grammar and styli	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la	inguage structur	e knowledge
and perceptive and	communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work w	vith (professional	) text and its
	features. Practice of oral and written presentation.		
15JBR2	Language - Russian 2	Z	2
Grammatical Struc	ures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills,	feedback skills,	summarising
echnical text conte	nt, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and tecl	hnical registers a	and their use
	language of management.		
15JBR3	Language - Russian 3	Z	2
	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la	nguage structur	e knowledge
-	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.	u	,
15JBR4	Language - Russian 4	ZK	2
	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la		_
-	communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work w		_
1.00p.110 and	features. Practice of oral and written presentation.	\r 5.555ioriai	,
15JBS2	Language - Spanish 2	Z	2
	ures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills,	_	
	nt, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and tecl		
crimical text conte	language of management.	illical registers a	iliu ilieli ust
4.F. ID.CO		7	
15JBS3	Language - Spanish 3	Z	2
-	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la		_
nd perceptive and	communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work w	vitn (professional	) text and it
	features. Practice of oral and written presentation.		
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		_
and perceptive and	communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work w	vith (professional	) text and its
	features. Practice of oral and written presentation.		
15JCZ1	Czech Language for Foreign Students 1	Z	0
Basic structures	s of Czech language, common communication situations, study, work, leisure time activities, introduction of myself, phonetics of Czec	ch language, writ	ing skills.
15JCZ2	Czech Language for Foreign Students 2	Z	0
Basic structure:	of Czech language, common communication situations, study, work, leisure time activities, introduction of myself, phonetics of Czec	h language, writ	ing skills.
15JCZ3	Czech Language for Foreign Students 3		
'	Language structures with regard to the group level. Listening and oral fluency drill. Basic terminology.	Z	
15JCZ4		Z	
			1
133024	Czech Language for Foreign Students 4	Z Z	
<u>'</u>	Czech Language for Foreign Students 4  Language structures with regard to the group level. Listening and oral fluency drill. Basic terminology.	Z	
15XN1	Czech Language for Foreign Students 4 Language structures with regard to the group level. Listening and oral fluency drill. Basic terminology.  Master Project 1	Z Z	2
15XN1 15XN2	Czech Language for Foreign Students 4 Language structures with regard to the group level. Listening and oral fluency drill. Basic terminology.  Master Project 1  Master Project 2	Z Z Z	2 2
15XN1	Czech Language for Foreign Students 4 Language structures with regard to the group level. Listening and oral fluency drill. Basic terminology.  Master Project 1	Z Z	+
15XN1 15XN2	Czech Language for Foreign Students 4 Language structures with regard to the group level. Listening and oral fluency drill. Basic terminology.  Master Project 1  Master Project 2	Z Z Z	2
15XN1 15XN2 15XN3 15XN4	Czech Language for Foreign Students 4 Language structures with regard to the group level. Listening and oral fluency drill. Basic terminology.  Master Project 1  Master Project 2  Master Project 3  Master Project 4	Z Z Z Z Z	2 1 8
15XN1 15XN2 15XN3 15XN4 15XNDD	Czech Language for Foreign Students 4 Language structures with regard to the group level. Listening and oral fluency drill. Basic terminology.  Master Project 1  Master Project 2  Master Project 3  Master Project 4  Master Thesis for study programme DS	Z Z Z Z Z Z Z Z Z	2 1 8 18
15XN1 15XN2 15XN3 15XN4 15XNDD 15Y2DN	Czech Language for Foreign Students 4 Language structures with regard to the group level. Listening and oral fluency drill. Basic terminology.  Master Project 1  Master Project 2  Master Project 3  Master Project 4  Master Thesis for study programme DS  Transportation Psychology in German Speaking Countries	Z Z Z Z Z Z Z KZ	2 1 8 18 2
15XN1 15XN2 15XN3 15XN4 15XNDD 15Y2DN	Czech Language for Foreign Students 4 Language structures with regard to the group level. Listening and oral fluency drill. Basic terminology.  Master Project 1  Master Project 2  Master Project 3  Master Project 4  Master Thesis for study programme DS  Transportation Psychology in German Speaking Countries  pader view of traffic problems with regard to the work with texts (Physics for drivers, abusing alcohol during driving, exhaustion, getting	Z Z Z Z Z Z Z KZ	2 1 8 18 2
15XN1 15XN2 15XN3 15XN4 15XNDD 15Y2DN ntroduction into br	Czech Language for Foreign Students 4 Language structures with regard to the group level. Listening and oral fluency drill. Basic terminology.  Master Project 1  Master Project 2  Master Project 3  Master Project 4  Master Thesis for study programme DS  Transportation Psychology in German Speaking Countries  pader view of traffic problems with regard to the work with texts (Physics for drivers, abusing alcohol during driving, exhaustion, gettir in traffic, traffic accident, traffic psychology in the internet etc.)	Z Z Z Z Z Z KZ ng of driving lices	2 1 8 18 2 nce, children
15XN1 15XN2 15XN3 15XN4 15XNDD 15Y2DN ntroduction into br	Czech Language for Foreign Students 4 Language structures with regard to the group level. Listening and oral fluency drill. Basic terminology.  Master Project 1  Master Project 2  Master Project 3  Master Project 4  Master Thesis for study programme DS  Transportation Psychology in German Speaking Countries  pader view of traffic problems with regard to the work with texts (Physics for drivers, abusing alcohol during driving, exhaustion, getting in traffic, traffic accident, traffic psychology in the internet etc.)  Road Transport History	Z Z Z Z Z Z KZ ng of driving licer	2 1 8 18 2 nce, children
15XN1 15XN2 15XN3 15XN4 15XNDD 15Y2DN ntroduction into br	Czech Language for Foreign Students 4 Language structures with regard to the group level. Listening and oral fluency drill. Basic terminology.  Master Project 1  Master Project 2  Master Project 3  Master Project 4  Master Thesis for study programme DS  Transportation Psychology in German Speaking Countries  pader view of traffic problems with regard to the work with texts (Physics for drivers, abusing alcohol during driving, exhaustion, getting in traffic, traffic accident, traffic psychology in the internet etc.)  Road Transport History  ffic in the Ancient Age, corridors of main mediveal pathways. Development of road traffic in the modern period, acceleration of road traffic.	Z Z Z Z Z Z KZ ng of driving licer	2 1 8 18 2 nce, children 2 ment during
15XN1 15XN2 15XN3 15XN4 15XNDD 15Y2DN ntroduction into br	Czech Language for Foreign Students 4 Language structures with regard to the group level. Listening and oral fluency drill. Basic terminology.  Master Project 1  Master Project 2  Master Project 3  Master Project 4  Master Thesis for study programme DS  Transportation Psychology in German Speaking Countries oader view of traffic problems with regard to the work with texts (Physics for drivers, abusing alcohol during driving, exhaustion, gettir in traffic, traffic accident, traffic psychology in the internet etc.)  Road Transport History  ffic in the Ancient Age, corridors of main mediveal pathways. Development of road traffic in the modern period, acceleration of road turn. Development of road layout, geometric and construction layers. Beginning of modern road civil engineering. Development of road	Z Z Z Z Z Z KZ ng of driving licer	2 1 8 18 2 nce, children 2 ment during
15XN1 15XN2 15XN3 15XN4 15XNDD 15Y2DN ntroduction into br 15Y2HS toads and road trast part of 20th cen	Czech Language for Foreign Students 4 Language structures with regard to the group level. Listening and oral fluency drill. Basic terminology.  Master Project 1  Master Project 2  Master Project 3  Master Project 4  Master Thesis for study programme DS  Transportation Psychology in German Speaking Countries pader view of traffic problems with regard to the work with texts (Physics for drivers, abusing alcohol during driving, exhaustion, getting in traffic, traffic accident, traffic psychology in the internet etc.)  Road Transport History  Agriculture Master Thesis for study programme DS  Transportation Psychology in German Speaking Countries  Transportation Psychology in German Speaking Countries  Deader view of traffic problems with regard to the work with texts (Physics for drivers, abusing alcohol during driving, exhaustion, getting in traffic accident, traffic psychology in the internet etc.)  Road Transport History  Agriculture Master Project 1  Master Project 2  Master Project 2  Master Project 3  Master Project 3  Master Project 3  Master Project 3  Master Project 4  Master Project 3  Master Project 4  Master Project 4  Master Project 2  Master Project 2  Master Project 2  Master Project 2  Master Project 3  Master Project 3  Master Project 2  Master Project 2  Master Project 2  Master Project 2  Master Project 1  Master Project 1  Master Project 2  Master Project 2  Master Project 2  Master Project 3  Master Project 4  Master Project 4  Master Project 4  Master Project 4  Master Project 3  Master Project 3  Master Project 4  Master Project 4  Master Project 4  Master Project 4  Master Project 3  Master Project 4  Master Project 3  Master Project 4  Master Project 3  Master Project 4  M	Z Z Z Z Z Z KZ ng of driving licer KZ ransport develop d travelling in mo	2 1 8 18 2 nce, childrer 2 ment during odern period
15XN1 15XN2 15XN3 15XN4 15XNDD 15Y2DN ntroduction into br 15Y2HS loads and road trast part of 20th cent	Czech Language for Foreign Students 4 Language structures with regard to the group level. Listening and oral fluency drill. Basic terminology.  Master Project 1  Master Project 2  Master Project 3  Master Project 4  Master Thesis for study programme DS  Transportation Psychology in German Speaking Countries cader view of traffic problems with regard to the work with texts (Physics for drivers, abusing alcohol during driving, exhaustion, getting in traffic, traffic accident, traffic psychology in the internet etc.)  Road Transport History  Agriculture of road layout, geometric and construction layers. Beginning of modern road civil engineering. Development of road History of road intercections, bridges and traffic control, development of road signs.  Job Hunting in English	Z Z Z Z Z Z Z KZ ng of driving licer KZ ransport develop d travelling in mo	2 1 8 18 2 nce, childrer 2 ment during odern period
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15Y2PT	Food in Transportation	KZ	2
The nutrition policy.	Interaction transportation and foodstuffs. The health risks. Hygienic safeguard. The practical examples from the Czech Republic and	from the world. T	he issues o
15V2DII	dining cars, work trains and other railroad equipment. Legislation.	V7	2
15Y2PU	Publications and Their Creation  es. Footnotes and references. Exploration of facts. Quotations. Formal document layout. Working with information databases. Typogra	KZ	1
Ocientine texts typ	editors - MS Word, Tex/LaTeX. Practical creation of simple scientific documents.	priic prii cipics. 1	ypograpriic
15Y2SP	Seminar on Political Philosophy	KZ	2
.0.20.	Interpreting of philosophical texts, view of society, state and their system of government.		_
15Y2SR	Stylistics and Rhetorics	KZ	2
Basic skills of oral a	and written expression as a means of human communication. Basic information about speech, articulation, oral and written language.	Teaching to spea	ak well-voo
rgans, voice trainir	ng. Language semantics, language syntactic and the pragmatic aspect. Creative thought and its oral and written expression. Practice -	cultivating the skil	lls of speed
15Y2TS	Technician and Contemporary Society	KZ	2
Vhy 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 F	C, it must be true	e - it's on t
	Internet and in newspapers, what are the sights for, interest in public affairs - a hangover from the past?		
15Y2ZA	Basic Principles of English Academic Writing and Abstract in English	KZ	2
	, creating a phrasal bank according to students' specialisations, rhetorical analysis or texts/abstracts, drafting an abstract, providing e		
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 provehicle structure. Evaluation of variant concepts. Design phases. Realiability, technological aspects etc.	cess, functional d	iesign and
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		
=	for vehicle design. Simulation of propulsion and electric systems. Strength and material analyses of dynamical phenomena for vehicle		
16XN1	Master Project 1	Z	2
16XN2	Master Project 2	<u></u> Z	2
16XN3	Master Project 3	<u>Z</u>	1
16XN4	Master Project 4	<u>Z</u>	8
16XNDD	,	Z	
	Master Thesis for study programme DS		18
16Y2EE	Emissions and Ergonomics of Vehicles  onomy of vehicles and the influence on man and nature. National and international law related to the hygiene. Noise and vibrations - so	KZ	2
_	ys of measuring, prevention, elimination. Exhausts - creation, measurement, reduction, non-regular fuels and drives. Ergonomy - sitting,		
iliysicai values, way	reach. Condition - heating, ventilation, air-conditioning, filtration, tiredom.	standing, contro	i, operation
16Y2HP	Vehicle Hygiene	KZ	2
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Emissions and ergo ohysical values, way 16Y2KV Personal cars be construction. Active	onomy of vehicles and the influence on man and nature. National and international law related to the hygiene. Noise and vibrations - so ys of measuring, prevention, elimination. Exhausts - creation, measurement, reduction, non-regular fuels and drives. Ergonomy - sitting, reach. Condition - heating, ventilation, air-conditioning, filtration, tiredom.  Car Body Design  ody, high-load car body, bus car body, and motorcycle as a construction set. Principles of design, production, testing and operation. N	ources, creation, standing, contro KZ laterials used for aling function. Ae	propagatic I, operation 2 car body rodynamic
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Track line capacity  Thysical values, way  16Y2KV Personal cars by construction. Active  16Y2MK Quality management  16Y2PG Principles of creation and free  16Y2ST Micro, nano and standard principles, description  17DOPD  Basic steps and too  17TZND  Track line capacity	commy of vehicles and the influence on man and nature. National and international law related to the hygiene. Noise and vibrations - size of measuring, prevention, elimination. Exhausts - creation, measurement, reduction, non-regular fuels and drives. Ergonomy - sitting, reach. Condition - heating, ventilation, air-conditioning, filtration, tiredom.  Car Body Design  ody, high-load car body, bus car body, and motorcycle as a construction set. Principles of design, production, testing and operation. Me and passive safety parts. Ergonomics, HMI, view out of the vehicle, operational extent, view behind the car. Conditioning tools, sign of the car body. Design and artistic design principles. Practical training.  Quality Methods for Vehicles  Int methods list, customer data acquisition and analysis of customer requirements, QFD, DFM, DFA, DFS. FMEA (Failure mode effect (team) design.  Computer Graphics and Virtual Reality  Int and processing of bitmap and vector 2D graphics, 3D virtual scenes and algorithms used for their computerized processing. Adopting evare tools for creation and processing of 2D, 3D and interactive graphics, and basics of programming language VRML and graphic limples are considered in the processing of programming language VRML and graphic limples are considered in the processing of graphics, and basics of programming language VRML and graphic limples are considered in the processing of graphics, and basics of programming language VRML and graphic limples are considered in the processing of graphics, and basics of programming language VRML and graphic limples are considered in the processing of graphics, and basics of programming language VRML and graphic limples are considered in the processing of graphics, and basics of programming language VRML and graphic limples are considered in the processing of graphics, and basics of programming language VRML and graphic limples are considered in the processing of programming language VRML and graphic limples are considered in the processing of program	burces, creation, standing, contro  KZ  laterials used for aling function. Ae  KZ  analysis). Element  KZ  skills of work with boraries (OpenGL  KZ  n roduction and rigas.  KZ  ructions. Transpo  Terrestrial vehicles, land use. Ne  Z,ZK  ared with infrastru	propagatical, operation land propagatical, operation land land land land land land land lan
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Emissions and ergo chysical values, way  16Y2KV Personal cars by construction. Active  16Y2MK Quality management  16Y2PG Principles of creation and free  16Y2ST Micro, nano and state of the second o	commy of vehicles and the influence on man and nature. National and international law related to the hygiene. Noise and vibrations - so ys of measuring, prevention, elimination. Exhausts - creation, measurement, reduction, non-regular fuels and drives. Ergonomy - sitting, reach. Condition - heating, ventilation, air-conditioning, filtration, tiredom.  Car Body Design  ody, high-load car body, bus car body, and motorcycle as a construction set. Principles of design, production, testing and operation. We and passive safety parts. Ergonomics, HMI, view out of the vehicle, operational extent, view behind the car. Conditioning tools, sign of the car body. Design and artistic design principles. Practical training.  Quality Methods for Vehicles  Int methods list, customer data acquisition and analysis of customer requirements, QFD, DFM, DFA, DFS. FMEA (Failure mode effect to team of the car body. Design and artistic design principles. Practical training.  Computer Graphics and Virtual Reality  In and processing of bitmap and vector 2D graphics, 3D virtual scenes and algorithms used for their computerized processing. Adopting ware tools for creation and processing of 2D, 3D and interactive graphics, and basics of programming language VRML and graphic life.  Special Technologies in Transport and Telecommunications  special technologies, electric arc and its applications, plasma technologies, dipping, beam technologies, electron beams technology in vehicles, laser and laser technologies, soldering, gluing, ultrasound, diffusion, friction and explosion technologies, micro stoves,  Special technologies, plasma technologies, dipping, beam technologies, electron beams technology in vehicles, laser and laser technologies, soldering, gluing, ultrasound, diffusion, friction and explosion technologies, micro stoves, and additional propertion and Building Technology and Equipment  In doubliding technology and equipment Transport of solid and mass material, soil and rok above all. Highway and underground construction management me	burces, creation, standing, contro  KZ laterials used for aling function. Ae  KZ analysis). Elemen  KZ skills of work with braries (OpenGL KZ n roduction and r gas.  KZ ructions. Transpo Terrestrial vehicl  Z,ZK eas, land use. No	propagation  2 car body  rodynamic  2 nts of parall  2 profession  2 nending of  2 nending of  4 aucture costs freight train  2 2  1 8
Inissions and ergo hysical values, way  16Y2KV Personal cars by construction. Active  16Y2MK Quality management  16Y2PG Principles of creation and free  16Y2ST Micro, nano and standard an	commy of vehicles and the influence on man and nature. National and international law related to the hygiene. Noise and vibrations - so ys of measuring, prevention, elimination. Exhausts - creation, measurement, reduction, non-regular fuels and drives. Ergonomy - sitting, reach. Condition - heating, ventilation, air-conditioning, filtration, tiredom.  Car Body Design  ody, high-load car body, bus car body, and motorcycle as a construction set. Principles of design, production, testing and operation. We and passive safety parts. Ergonomics, HMI, view out of the vehicle, operational extent, view behind the car. Conditioning tools, signs of the car body. Design and artistic design principles. Practical training.  Quality Methods for Vehicles  Int methods list, customer data acquisition and analysis of customer requirements, QFD, DFM, DFA, DFS. FMEA (Failure mode effect of the car body. Design and artistic design principles. Practical training.  Computer Graphics and Virtual Reality  In and processing of bitmap and vector 2D graphics, 3D virtual scenes and algorithms used for their computerized processing. Adopting ware tools for creation and processing of 2D, 3D and interactive graphics, and basics of programming language VRML and graphic life.  Special Technologies in Transport and Telecommunications  special technologies, electric arc and its applications, plasma technologies, dipping, beam technologies, electron beams technology vehicles, laser and laser technologies, soldering, gluing, ultrasound, diffusion, friction and explosion technologies, micro stoves,  Special technologies, electric arc and its applications, plasma technology and Equipment  and building technology and equipment. Transport of solid and mass material, soil and rock above all. Highway and underground const in and construction features, delivered mass calculation, economy of operation. Technics and technology of underground constructions management methodology (ultrasound, laser, GPS, total stations).  Transportation Planning and Modeling	burces, creation, standing, contro  KZ  laterials used for aling function. Ae  KZ  analysis). Elemen  KZ  skills of work with boraries (OpenGL  RZ  n roduction and r gas.  KZ  ructions. Transpo  Terrestrial vehici  Z,ZK  ared with infrastruster concept of  Z  Z  Z	propagatic l, operation  2 car body brodynamic  2 profession l. 2 profession l. 2 profession l. 2 profession l. 4 profession l

17Y2FM	Financing in Urban Mass Transportation	KZ	2
-	evelopment in Prague and other cities in the world. Building and operation of public tram, bus, and trolleybus networks. Underground I		
UMI types. UMI o	development in small towns. Particularities of investment and operation financing of individual UMT types. Historic and present models inspection and blind passengers. Tourism & UMT. UMT typology & choice of optimum financing.	of UM I financin	g. Iransport
17Y2MD	Modelling and optimization on transport networks	KZ	2
	Widdenling and optimization on transport networks		1
Coordination prod	modelling of advanced problems in distribution systems - exact, heuristic and metaheuristic principles of solving problems.		o oyotomo,
17Y2MO	International Organisations in Transportation	KZ	2
International rela	titions in transport, UN, EEC UN, Intergovernmental organisations, EU Offices and Agencies, Conference of European Ministries of tra	insport, Internation	onal mode
	organisations of public transport, Air-Rail, railways, roads, air, waterways, forwarding and postal services.		
17Y2MS	Microsimulation of Railway Operation	KZ	2
	characteristics of simulation tools, creation of a simulation model of railway infrastructure, verification of a specific operational concept	0	
idaptation of the in	frastructure model and modification to the infrastructure to allow the implementation of the proposed operational concept. Stability test of sensitivity of the operational concept to delays.	s and evaluation	s. Evaluation
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		
	/ar, transatlantic transportation development. Imperial China: Late Qing dynasty. Selected chapters from the 20. century history: From		
	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 supp	oort, risk of decis	ion making,
	telematics.		T
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		-
circulation planning	B. Rules of train-diagramm creating. Timetables for more service-levels on the line. Construction slot conflicts between passenger- and relations and waiting times, timetables for lines under construction.	ireigni transport.	INELWOLK IIIIE
18GAZ	Geomechanics and Foundation Engineering	Z,ZK	3
	pertrographyand stratigraphy), mechanics of soils (classification of fundamental soils, mechanic properties of fundamental soils, perr	•	_
	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).		
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 structure of the conditions of the co		and strain
	state around a notch. Stress intensity factor. Fracture toughness. Energy methods of linear fracture mechanics. Crack driving fo	rce.	
		7 71/	
18TIK	Theory of Engineering Structures	Z,ZK	4
The course builds u	ipon the knowledge gained in basic mechanics courses in bachelor study (especially Statics and Elasticity) in the field of mathematical	theory of elastici	ty. Emphasis
The course builds u	ipon the knowledge gained in basic mechanics courses in bachelor study (especially Statics and Elasticity) in the field of mathematical e and axisymmetric problems, as well as on the calculation of stress and strain in plates and shells. Students are further acquainted w	theory of elastici	ty. Emphasis
The course builds united in the course builds united in the course build in the course builds under the course build under the course buil	upon the knowledge gained in basic mechanics courses in bachelor study (especially Statics and Elasticity) in the field of mathematical e and axisymmetric problems, as well as on the calculation of stress and strain in plates and shells. Students are further acquainted we behavior of subsoil used in the design of line structures.	theory of elastici	ty. Emphasis
The course builds used is placed on plane 18XN1	upon the knowledge gained in basic mechanics courses in bachelor study (especially Statics and Elasticity) in the field of mathematical e and axisymmetric problems, as well as on the calculation of stress and strain in plates and shells. Students are further acquainted we behavior of subsoil used in the design of line structures.  Master Project 1	theory of elastici ith methods of m	ty. Emphasis odeling the
The course builds use placed on plane 18XN1 18XN2	pon the knowledge gained in basic mechanics courses in bachelor study (especially Statics and Elasticity) in the field of mathematical e and axisymmetric problems, as well as on the calculation of stress and strain in plates and shells. Students are further acquainted we behavior of subsoil used in the design of line structures.  Master Project 1  Master Project 2	theory of elastici ith methods of m	ty. Emphasis odeling the
The course builds use placed on plane  18XN1  18XN2  18XN3	pon the knowledge gained in basic mechanics courses in bachelor study (especially Statics and Elasticity) in the field of mathematical e and axisymmetric problems, as well as on the calculation of stress and strain in plates and shells. Students are further acquainted we behavior of subsoil used in the design of line structures.  Master Project 1  Master Project 2  Master Project 3	theory of elastici ith methods of m  Z  Z  Z	ty. Emphasis odeling the
The course builds use placed on plane  18XN1  18XN2  18XN3  18XN4	pon the knowledge gained in basic mechanics courses in bachelor study (especially Statics and Elasticity) in the field of mathematical and axisymmetric problems, as well as on the calculation of stress and strain in plates and shells. Students are further acquainted we behavior of subsoil used in the design of line structures.  Master Project 1  Master Project 2  Master Project 3  Master Project 4	theory of elastici ith methods of m  Z  Z  Z  Z	ty. Emphasis odeling the
The course builds use placed on plane  18XN1  18XN2  18XN3  18XN4  18XNDD	pon the knowledge gained in basic mechanics courses in bachelor study (especially Statics and Elasticity) in the field of mathematical and axisymmetric problems, as well as on the calculation of stress and strain in plates and shells. Students are further acquainted we behavior of subsoil used in the design of line structures.  Master Project 1  Master Project 2  Master Project 3  Master Project 4  Master Thesis for study programme DS	theory of elastici ith methods of m  Z  Z  Z  Z  Z	ty. Emphasis odeling the
The course builds use placed on plane  18XN1  18XN2  18XN3  18XN4  18XNDD  18Y2DC	pon the knowledge gained in basic mechanics courses in bachelor study (especially Statics and Elasticity) in the field of mathematical and axisymmetric problems, as well as on the calculation of stress and strain in plates and shells. Students are further acquainted we behavior of subsoil used in the design of line structures.  Master Project 1  Master Project 2  Master Project 3  Master Project 4	theory of elastici ith methods of m  Z  Z  Z  Z  Z  KZ	ty. Emphasis odeling the
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21XNDD Master Thesis for study programme DS		1
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21Y2BS Unmanned aircraft systems 2	Z	18
	KZ	2
Modern trends in unmanned aircraft development. Use of unmanned aircraft. Managerial activities related to the opera	ation of unmanned aircraft. Flights beyond the applicable	legislation
21Y2CR CRM	KZ	2
Introduction to CRM. Analysis of air accidents. Human factor. Error. Historical development of CRM. Health and fitne	ess. Stress and its effect on the human body. Fatigue Sle	eep &
Vigilance. Information Processing. Situational Awareness. Workload Management. Decision Making. Communication of the Communication of t	unication. Leadership & Department Behaviour. Automatic	on.
21Y2FM Aviation Company Financial Management	KZ	2
Theories of corporate finance - financial statements, budget, forecast. Financial policy of the company. Financial r		retained
earnings, shares, bonds, loans, leasing, capital. Financial and economic analysis of the		
21Y2LS Air Traffic Services	KZ	2
Airspace structure in Czech Republic and other countries. Introduction and description of ATS units in Czech Repub	· · · · · · · · · · · · · · · · · · ·	tory of ATS
at USA and Czechoslovakia. ATS - Model of financing. Training Systém of Air Traffic Co		
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	_	nd software
tools. A large part is devoted to air targets tracking, measurement-to-track association, t		
21Y2MG Military Aerospace Technologies: Applications and Global		2
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	- · · · · · · · · · · · · · · · · · · ·	-
and implementation of sales of goods and services in the aviation industry. In addition to the theoretical foundations	- · · · · · · · · · · · · · · · · · · ·	competition
and product analysis, creation of marketing strategies and		
21Y2MQ Quality Management	KZ	2
History, basic definition. Pioneers in the field of quality. International quality organisations and quality promotion in management systems. Integrated management systems. Risk management in the context of the requirements of ISO	the state of the s	
quality management, excellence models and corporate social respons		prenensive
21Y2PL Operational Aspects of Aerodromes	KZ	2
Operational aspects of aerodromes. Location of aerodrome and orientation of runways. Requirements for apron. Ca		
conditions. Firefighting units. Protection against unlawful interference. Local transport of		40
21Y2PP Law and Operation in Air Transport	KZ	2
Development of aviation law. International conventions on civil aviation. International organisations and including of		
aviation. Execution of state administration and state supervision in matters of civil aviation, in accordance with Ac		
passengers, luggage and cargo. The safe transport of danger	·	
21Y2UL Aircraft Maintenance	KZ	2
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Approved Maintenance Organisations (AMOs), Continuing Airworthiness Management Organisations (CAMOs), Mai		umentatior
Approved Maintenance Organisations (AMOs), Continuing Airworthiness Management Organisations (CAMOs), Mai and additional ICA (Instructions for Continued Airworthiness) instructions, aircraft release to service procedure, mai		
	intenance programmes and scheduling, modifications ar	
and additional ICA (Instructions for Continued Airworthiness) instructions, aircraft release to service procedure, main	intenance programmes and scheduling, modifications ar aircraft maintenance.	
and additional ICA (Instructions for Continued Airworthiness) instructions, aircraft release to service procedure, mai repair methods, aircraft centre of gravity and weights, human factors in	intenance programmes and scheduling, modifications ar aircraft maintenance.  KZ	nd general
and additional ICA (Instructions for Continued Airworthiness) instructions, aircraft release to service procedure, mai repair methods, aircraft centre of gravity and weights, human factors in 22AMMD Measuring Methods Applied to Transportation	intenance programmes and scheduling, modifications ar aircraft maintenance.  KZ  Discanning. Transport corridor setting out using geodetic	nd general  4 c methods.
and additional ICA (Instructions for Continued Airworthiness) instructions, aircraft release to service procedure, mai repair methods, aircraft centre of gravity and weights, human factors in   22AMMD Measuring Methods Applied to Transportation  Geodetic location and technical processing of traffic route with geodetic total station, GPS and photogrammetry, 3D	intenance programmes and scheduling, modifications ar aircraft maintenance.  KZ  Discanning. Transport corridor setting out using geodetic	nd general  4 c methods.
and additional ICA (Instructions for Continued Airworthiness) instructions, aircraft release to service procedure, main repair methods, aircraft centre of gravity and weights, human factors in 22AMMD Measuring Methods Applied to Transportation Geodetic location and technical processing of traffic route with geodetic total station, GPS and photogrammetry, 3D Detection and technical processing of several vehicle dynamic characteristics using high-speed cameras and accelerate to the service of the service procedure, main repair methods, aircraft release to service procedure, main repair methods, aircraft release to service procedure, main repair methods, aircraft centre of gravity and weights, human factors in the service procedure, main repair methods, aircraft centre of gravity and weights, human factors in the service procedure, main repair methods, aircraft centre of gravity and weights, human factors in the service procedure, main repair methods, aircraft centre of gravity and weights, human factors in the service procedure, and the service procedure, main repair methods, aircraft centre of gravity and weights, human factors in the service procedure, and the ser	intenance programmes and scheduling, modifications ar aircraft maintenance.  KZ  Discanning. Transport corridor setting out using geodetic	nd general  4 c methods.
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and additional ICA (Instructions for Continued Airworthiness) instructions, aircraft release to service procedure, mai repair methods, aircraft centre of gravity and weights, human factors in  22AMMD   Measuring Methods Applied to Transportation Geodetic location and technical processing of traffic route with geodetic total station, GPS and photogrammetry, 3DD Detection and technical processing of several vehicle dynamic characteristics using high-speed cameras and accele and September - usually in examination period.  22MSV   Modelling and Vehicle Movement Simulation Principles and posibilities of simulation tools with regards to vehicle movement analysis and vehicle crash analysis. Kin View conditions. Proposed road space passage. Processing of recommendation of the conditions of the conditi	intenance programmes and scheduling, modifications are aircraft maintenance.  KZ  Discanning. Transport corridor setting out using geodetice prometers. It is a week course and the terms are usually set to be a	4 c methods. set in June 2 movement
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23XNDD	Master Thesis for study programme DS	Z	18
23Y2BP	Security Class	KZ	2
The most prevale	ent topics include data management, data and text mining applications, terrorism informatics, deception and intent detection, terrorist	and criminal soci	al network
	analysis, crime analysis, cyber-infrastructure protection, transportation infrastructure security, and information assurance, among	others.	
23Y2FB	Physics for Security Branches	KZ	2
Grounds of phy	, sics of substances and phenomena at extreme conditions. Grounds of rheology. Physics of Earth's interior. Geophysics. Physics of a dengineering branches directed to safety.	tmosphere. Applic	ations in
23Y2MA	Risk Analysis and Management	KZ	2
Concept of risks ar	nd terms. Risk sources, definition of hazard, impacts and risks. Methods for identification, analysis, assessment and management of i	ı risks. Risk engine	ering targets
and good engine	ering practice. Methods, tools and techniques for risk engineering. System of systems risk. Application of strategic and system approa	ach for benefit of s	ecurity and
	development. Territorial, emergency and crisis planning. Human factor - its role.		
23Y2PD	Practical vehicle dynamics	KZ	2
Theory of vehicle	dynamics. Multibody vehicle modeling. Modeling with IPG CarMaker. Standard and development stage experiments with road vehicle	s. Realization of e	xperimental
	measurements with passenger vehicles. Experiment evaluation.		
23Y2TP	Creation of legal and technical regulations	KZ	2
Creation of legis	slation, structure of the bills of law, legal process, compatibility with the EC law, the creation of technical standards and their publication	on, ÚNMZ (Czech	Office for
	standards, metrology and testing) in Czech Republic, organizations CEN, CENELEC and ETSI, the notification process.		
23Y2VR	Cope with Risks in Engineering Branches	KZ	2
Types of engineering	ng branches directed to risks, procedures used in risk engineering, ensuring the secured systems, ensuring the safe systems, ensuring	g 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	i nent, communicati	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 pre-	sent of intelligence services and their role in the modern world. How intelligence services handle with information. Methods and procedu	res of collecting ar	nd evaluating
information. Means	s of intelligence services. Internal and external intelligence, military intelligence. The means and methods of state security services. Co	ooperation among	Intelligence
	services within NATO, EU. The organization of the intelligence services.		

For updated information see <a href="http://bilakniha.cvut.cz/en/FF.html">http://bilakniha.cvut.cz/en/FF.html</a> Generated: day 2025-08-08, time 19:00.