### Study plan

### Name of study plan: navaz. mag. PRE program DS 21/22 (program DS, ne obor)

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: 1.S.NPDS 20/21

Name of the group: 1.sem.nav.prez (od) 20/21 - program DS

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 guarantors (gar.)	Completion	Credits	Scope	Semester	Role
12IKD	Rail Transport Infrastructure Lukáš Týfa, Ond ej Trešl	Z,ZK	5	2P+2C	Z	Z
12TKVP	Highway Engineering Materials Otakar Vacín	Z,ZK	4	2P+2C	Z	Z
18GAZ	Geomechanics and Foundation Engineering  Jitka ezní ková, Linda erná Vydrová Linda erná Vydrová (Gar.)	Z,ZK	3	2P+1C	Z	Z
18TIK	Theory of Engineering Structures Petr Koudelka, Petr Zlámal, Ond ej Jiroušek	Z,ZK	4	2P+1C	Z	Z
14GISS	Geographical Information Systems 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 Drahomír Schmidt (Gar.)	KZ	2	0P+2C	Z	Z
15J2A1	Language - English 1 Barbora Horá ková, Jitka He manová, Dana Boušová, Lenka Monková, Peter Morpuss, Markéta Vojanová, Marie Michlová, Marek Tome ek, Markéta Musilová,	Z	2	0P+2C+10B	Z	Z

12IKD	Rail Transport Infrastructure	Z,ZK	5
Non-compensated later	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	ı-train. Interoperability. Noise precautions. Railway line modernization for non-tilting and tilting trains.		
12TKVP	Highway Engineering Materials	Z,ZK	4
The theory of road cons	struction - Material Aspects. The course emphasizes the development of road construction from the beginning of the 20th cer	tury to the prese	nt, focusing on
materials, understanding	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 deptl	n foundations elei	nents, 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	itical theory of ela	sticity. Emphasis
is placed on plane and	axisymmetric problems, as well as on the calculation of stress and strain in plates and shells. Students are further acquainte	d 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 posibilit	Principles and posibilities of simulation tools with regards to vehicle movement analysis and vehicle crash analysis. Kinematic and dynamic modelling of ve					
View conditions. Propo	osed road space passage. Processing of road 3D models.					
15J2A1	Language - English 1	Z	2			
Presentation Skills - 6	Presentation Skills - expert technical discourse and style: Analysis of expert texts and their production: Preparation for overseas work engagement					

Code of the group: 1.S.NPDS VYB R 20/21

Name of the group: 1.sem.nav.prez (od) 20/21 výb r p edm tu - program DS 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
12MSD	Traffic Models	Z,ZK	4	2P+2C	Z	Z
17TZND	Technology of Railway Transport  Zden k Michl, Vit Janoš Vit Janoš (Gar.)	Z,ZK	4	2P+2C	Z	Z

#### Characteristics of the courses of this group of Study Plan: Code=1.S.NPDS VÝB R 20/21 Name=1.sem.nav.prez (od) 20/21 výb r p edm tu - program DS

12MSD	Traffic Models	Z,ZK	4			
Practical creation of traf						
17TZND	Technology of Railway Transport	Z,ZK	4			
Track line capacity assessment, model operational situation with a system running time between IPT-nodes, calculation of traction energy savings compared with infrastructure costs						

for designing of fleeting crossing station, solving of capacity problem and blocking time in relation to train protection system, robustness of timetable, system concept of freight train paths, guidelines for centralised operational traffic control and management.

Code of the group: 2.S.NPDS 20/21

Name of the group: 2.sem.nav.prez (od) 20/21 - program DS

vehicle structure. Evaluation of variant concepts. Design phases. Realiability, technological aspects etc.

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

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

Credits in the group: 20 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
12NAPI	Design and Maintenance of Transportation Structures Otakar Vacín	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, David Lehet Jaroslav Machan (Gar.)	ZK	2	2P+0C+8B	L	Z
22AMMD	Measuring Methods Applied to Transportation Michal Frydrýn, Drahomír Schmidt, Tomáš Mi unek, Luboš Nouzovský, Zden k Svatý Tomáš Mi unek (Gar.)	KZ	4	1P+3C	L	Z
15JBA2	Language - English 2 Barbora Horá ková, Jitka He manová, Dana Boušová, Lenka Monková, Peter Morpuss, Markéta Vojanová, Marie Michlová, Marek Tome ek, Markéta Musilová,	Z	2	0P+2C+10B	L	Z

Characteristics o	f the courses of this group of Study Plan: Code=2.S.NPDS 20/21 Name=2.sem.nav.prez (od)	20/21 - progr	ram DS
12NAPI	Design and Maintenance of Transportation Structures	Z,ZK	4
Design and construction	on of cement-concrete pavements and their maintenance. Construction of bridge objects, examples and choice of bridge const	ruction materials.	Construction
and operation of tunne	ls.		
12UMUP	Sustainable Mobility and Land - Use Planning	Z,ZK	5
Spatial planning - obje	ctives and tasks, development over time. Land-use planning tools. SUMP. Territorial and transport planning context. Ways of ur	ban growth in con	nection with
transport. Basic princip	les of the transport solution. The impact of transport on the size and shape of the city, on the development of the street and th	e square and the r	roads. Solutions
for pedestrian and bicy	cle transport. Suburbanization and transport. City economics.		
12ZSUZ	Railway Stations and Centres	Z,ZK	3
Equipment for passeng	er transport. Platform construction. Access roads to platforms. Modification of railway stations according to the TSI PRM. Static	on heads design. V	ariant solutions
of station heads for cu	rent ride. Junction stations. Crossing stations. Passenger stations. Moving stations. Public transport terminals.		
16PDP	Principles of Vehicle Design	ZK	2
Design of transportation	n vehicle according to its usage and function. Marketing and user demands. Vehicle dynamics. Propulsion systems. Design pr	ocess, functional c	design and

22AMMD	Measuring Methods Applied to Transportation	KZ	4			
Geodetic location and	eodetic 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 technical	Il 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	lly in examination period.					
15JBA2	5JBA2 Language - English 2 Z 2					
Presentation Skills - ex	esentation Skills - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work engagement.					

Code of the group: 2.S.NPDS VÝB R 20/21

Name of the group: 2.sem.nav.prez (od) 20/21 výb r p edm tu - program DS 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 Josef Kocourek (Gar.)	Z,ZK	4	2P+1C	L	Z
18TEAM	Theoretical and Applied Mechanics Ond ej Jiroušek, Radim Dvo ák	Z,ZK	4	2P+1C	L	Z

## Characteristics of the courses of this group of Study Plan: Code=2.S.NPDS VÝB R 20/21 Name=2.sem.nav.prez (od) 20/21 výb r p edm tu - program DS

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							
network that should mir	network that should minimize traffic accident risks for all those who take part in road traffic. Application of European Directive 2008/96/EC on road sa							
18TEAM	Theoretical and Applied Mechanics	Z,ZK	4					
Fundamentals of theory	Fundamentals of theory of plasticity. Plasticity conditions. Elastoplastic and plastic states of cross-sections and beams. Reliability and durability of structures. The stress and strain							
state around a notch. S	tate around a notch. Stress intensity factor. Fracture toughness. Energy methods of linear fracture mechanics. Crack driving force.							

Code of the group: 3.S.NPDS 21/22

Name of the group: 3.sem.nav.prez (od) 21/22 - program DS

Traffic excesses management. Road assessment and maintenance methods. Health risks assessment.

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 Petr Richter, Zuzana arská, Vladimír Faltus	Z,ZK	7	3P+2C	Z	Z
12VRZ	High Speed Rail Transport Lukáš Týfa	KZ	3	2P+0C	Z	Z
15JBA3	Language - English 3 Barbora Horá ková, Jitka He manová, Dana Boušová, Lenka Monková, Peter Morpuss, Markéta Vojanová, Marie Michlová, Markéta Musilová, Eva Rezlerová	Z	2	0P+2C+10B	Z	Z

#### Characteristics of the courses of this group of Study Plan: Code-3 S NPDS 21/22 Name-3 sem nav prez (od) 21/22 - program DS

statistical and microscopic traffic models. Theory of traffic management. Traffic light signals, roundabouts, coordination, public transport priority. Urban and highway management.

Characteristics of the courses of this group of Study Plan: Code=3.S.NPDS 21/22 Name=3.sem.nav.prez (od) 21/22 - program DS							
11STS	Stochastic Systems	Z,ZK	4				
The subject deals with the problems of mathematical modelling of dynamical systems, estimation od these models and their utilization for prediction. The results are illustrated on							
practical transportation	tasks. Mathematical theory roots from probability and mathematical statistics and they use the methods of the Bayesian probability	oabilistic approach	1.				
12DAZP	Transport and Environment	Z,ZK	4				
This course aims the in	pact of transport on environment. The accent is put mainly on noise and vibration, emission, barrier effect and energy demar	ds. The noise mea	asury is part and				
parcel of this course.							
12TEAP	Theory of Road Traffic Operation	Z,ZK	7				
Traffic parameters and their measurement, acquisition and processing. Road capacity analysis. Theoretical foundations and applications of mathematical models - macroscopic,							

High Speed Rail Transport
High speed railway (HSR) transport characteristics and position in transportation system. Types / models of HSR systems, preparation of high speed railway lines building in the Czech Republic conditions. Non-adhesion HSR systems. City and region traffic service by HSR. HSR operating points. HSR worldwide network. HSR routing and traffic conception. Specifics of HSR track construction and layout track parameteres.

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

Code of the group: 3.S.NPDS VÝB R 21/22

Name of the group: 3.sem.nav.prez (od) 21/22 výb r p edm tu - program DS 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=3.S.NPDS VÝB R 21/22 Name=3.sem.nav.prez (od) 21/22 výb r p edm tu - program DS

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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, inf	ormation 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 carriag	e.					

Code of the group: 4.S.NPDS 21/22

Name of the group: 4.sem.nav.prez (od) 21/22 - program DS

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 Barbora Horá ková, Jitka He manová, 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=4.S.NPDS 21/22 Name=4.sem.nav.prez (od) 21/22 - program DS

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

Code of the group: XNDP DS 21/22

Name of the group: Diplomová práce program DS (od) 21/22

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:

	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, Martin Jacura, Tomáš Javo ík, Josef Kocourek, Polina Zayats, Kristýna Neubergová,	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, P emysl 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	Z	18	0P+20C	L	Z
20XNDD	Master Thesis for study programme DS	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=XNDP DS 21/22 Name=Diplomová práce program DS (od) 21/22

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: XN DS 1-4 20/21

Name of the group: Projekty nav.prez.1.-4.sem (od) 20/21 programu DS Requirement credits in the group: In this group you have to gain 13 credits

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

Credits in the group: 13 Note on the group:

NOTE OU THE	<u> </u>					
Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11XN1	Master Project 1	Z	2	0P+2C+4E	Z	ZP
12XN1	Master Project 1 Lukáš Týfa, Ond ej Trešl, Gabriela Sidorinová, Dagmar Ko árková, Václav Novotný, Iva Šturmová, Martin Jacura, Tomáš Javo ík, Josef Kocourek,	Z	2	0P+2C+4E	3 Z	ZP
14XN1	Master Project 1	Z	2	0P+2C+4E	Z	ZP
15XN1	Master Project 1	Z	2	0P+2C+4E	B Z	ZP
16XN1	Master Project 1 P emysl Toman	Z	2	0P+2C+4E	3 Z	ZP
17XN1	Master Project 1 Zden k Michl, Vít Janoš, Rudolf Vávra, Václav Baroch, Michal Drábek, Alexandra Dvo á ková, Veronika Faifrová, Eliška Glaserová, Rudolf F. Heidu,	Z	2	0P+2C+4E	S Z	ZP
18XN1	Master Project 1 Václav Rada, Nela Kr má ová	Z	2	0P+2C+4E	B Z	ZP
20XN1	Master Project 1 Ji í R ži ka	Z	2	0P+2C+4E	Z	ZP
21XN1	Master Project 1 Jakub Kraus, Andrej Lališ, Slobodan Stoji , Terézia Pilmannová, Jakub Hospodka, Lenka Hanáková, Vladimír Socha, Peter Vittek, Lukáš Popek,	Z	2	0P+2C+4E	B Z	ZP
22XN1	Master Project 1 Michal Frydrýn, Luboš Nouzovský, Zden k Svatý, Karel Kocián, Jakub Nová ek	Z	2	0P+2C+4E	B Z	ZP

23XN1	Master Project 1	Z	2	0P+2C+4B	Z	ZP
11XN2	Master Project 2	Z	2	0P+2C+8B	L	ZP
12XN2	Master Project 2 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 Pemysl Toman, Josef Mik	Z	2	0P+2C+8B	L	ZP
17XN2	Master Project 2  Zden k Michl, Vít Janoš, Rudolf Vávra, Václav Baroch, Michal Drábek, Alexandra Dvo á ková, Veronika Faifrová, Rudolf F. Heidu, Tomáš Horák, Vít Janoš (Gar.)	Z	2	0P+2C+8B	L	ZP
18XN2	Master Project 2 Daniel Kytý	Z	2	0P+2C+8B	L	ZP
20XN2	Master Project 2  Ji í R ži ka, Patrik Horaž ovský Vladimír Faltus	Z	2	0P+2C+8B	L	ZP
21XN2	Master Project 2 Jakub Kraus, Andrej Lališ, Slobodan Stoji , Terézia Pilmannová, Jakub Hospodka, Lenka Hanáková, Peter Vittek, Jakub Steiner, Natalia Guskova,	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, Dagmar Ko árková, Václav Novotný, Martin Jacura, Tomáš Javo ík, Josef Kocourek, Polina Zayats, Zuzana arská,	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  Zden k Michl, Vít Janoš, Rudolf Vávra, Václav Baroch, Michal Drábek, Alexandra Dvo á ková, Veronika Faifrová, Eliška Glaserová, Rudolf F. Heidu,	Z	1	0P+4C	Z	ZP
18XN3	Master Project 3 Daniel Kytý	Z	1	0P+4C	Z	ZP
20XN3	Master Project 3	Z	1	0P+4C	Z	ZP
21XN3	Master Project 3 Terézia Pilmannová, Miloš Strouhal	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, Kristýna Neubergová,	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 Mík	Z	8	0P+4C	L	ZP
17XN4	Master Project 4 Zden k Michl, Vít Janoš, Rudolf Vávra, Václav Baroch, Michal Drábek, Alexandra Dvo á ková, Veronika Faifrová, Rudolf F. Heidu, Tomáš Horák, Václav Baroch (Gar.)	Z	8	0P+4C	L	ZP
18XN4	Master Project 4	Z	8	0P+4C	L	ZP
20XN4	Master Project 4	Z	8	0P+4C	L	ZP
21XN4	Master Project 4 Slobodan Stoji , Terézia Pilmannová, Vladimír Socha, Peter Vittek, Jakub Steiner, Miloš Strouhal, Ota Hajzler, Iveta Kameníková, Petr Lukeš,	Z	8	0P+4C	L	ZP
22XN4	Master Project 4 Michal Frydryn, Luboš Nouzovský, Zden k Svatý, Karel Kocián	Z	8	0P+4C	L	ZP
23XN4	Master Project 4	Z	8	0P+4C	L	ZP
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# Characteristics of the courses of this group of Study Plan: Code=XN DS 1-4 20/21 Name=Projekty nav.prez.1.-4.sem (od) 20/21 programu DS

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-NPDS 21/22

Name of the group: PVP nav.prez. program DS 21/22

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
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 Zuzana Kosová	KZ	2	2P+0C	Z	PV
21Y2BS	Unmanned aircraft systems 2 Tomáš Tlu ho , Michal erný	KZ	2	2P+0C	L	PV

14Y2C1	CATIA I	KZ	2	2P+0C	L	PV
14Y2C2	CATIA II	KZ	2	2P+0C	Z	PV
14Y2CS	Sensitivity of Systems	KZ	2	2P+0C	L	PV
21Y2CR	CRM	KZ	2	2P+0C	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	KZ	2	2P+0C	L	PV
16Y2EE	Nela Kr má ová  Emissions and Ergonomics of Vehicles	KZ	2	2P+0C	L	PV
17Y2FM	Financing in Urban Mass Transportation	KZ	2	2P+0C	Z	PV
21Y2FM	Václav Baroch Aviation Company Financial Management	KZ	2	2P+0C+8B		PV
23Y2FB	Radoslav Zozu ák Radoslav Zozu ák	KZ	2	2P+0C	Z	PV
	Physics for Security Branches Physical foundation of materials' properties		-	+ +		
18Y2FZ	Jaroslav Valach	KZ	2	2P+0C	L	PV
15Y2HS	Road Transport History Eva Rezlerová, 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 Kristýna Neubergová	KZ	2	2P+0C	Z	PV
21Y2LS	Air Traffic Services	KZ	2	2P+0C+8B	L	PV
11Y2LG	Logics of Engineer's Judgement	KZ	2	2P+0C	L	PV
23Y2MA	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 Šmidochová	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	KZ	2	2P+0C	L	PV
16Y2MK	Quality Methods for Vehicles	KZ	2	2P+0C	L	PV
12Y2MD	Methods of Traffic Regulation and Prediction  Zuzana arská	KZ	2	2P+0C	L	PV
17Y2MO	International Organisations in Transportation	KZ	2	2P+0C	L	PV
17Y2MS	Microsimulation of Railway Operation Zden k Michl	KZ	2	2P+0C	Z	PV
17Y2MD	Modelling and optimization on transport networks	KZ	2	2P+0C	Z	PV
21Y2MS	Aerospace Engineering Simulation and Modelling	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 Tomáš Horák, Petra Skolilová	KZ	2	2P+0C	Z	PV
12Y2MZ	Modernization of Railway Lines and Stations Dagmar Ko árková, Miroslav Veliš	KZ	2	2P+0C	L	PV
14Y2OP	Object Oriented Programming in Transport	KZ	2	2P+0C	L	PV
15Y2OZ	Health Protection in Transportation and EU	KZ	2	2P+0C	 Z	PV
15Y2OF	Eva Rezlerová, Petr Musil  Specialised French for Transportation and	KZ	2	2P+0C	 	PV
	Telecommunications Optical Contactless Strain Measurements					
18Y2OB	Petr Zlámal	KZ	2	2P+0C	L	PV

1012FG	Petr Bouchner, Stanislav Novotný	ΝZ		25 +00		PV
22Y2PS	Traffic Accidents Computer Simulation and Analysis	KZ	2	2P+0C	L	PV
15Y2PT	Food in Transportation  Eva Rezlerová, Petr Musil	KZ	2	2P+0C	L	PV
3Y2PD	Practical vehicle dynamics	KZ	2	2P+0C	L	PV
5Y2PD	Practical Spanish for Transportation	KZ	2	2P+0C	Z	PV
1Y2PP	Law and Operation in Air Transport Radoslav Zozu ák	KZ	2	2P+0C+8B	L	PV
0Y2PR	Prediction of time series	KZ	2	2P+0C	L	PV
2Y2PV	Public transport priority	KZ	2	2P+0C	L	PV
4Y2PI	Process Information Systems in Transportation	KZ	2	2P+0C	Z	PV
4Y2PJ	C++ Programming Language	KZ	2	2P+0C	L	PV
4Y2PH	CAD Interface Programming	KZ	2	2P+0C	L	PV
1Y2PM	Programming in MATLAB Šárka Vorá ová	KZ	2	2P+0C	L	PV
1Y2PL	Operational Aspects of Aerodromes	KZ	2	2P+0C	Z	PV
5Y2PU	Publications and Their Creation	KZ	2	2P+0C	Z	PV
2Y2RD	Realization of Transport Buildings Dagmar Ko árková, Martin Höfler, Tomáš Honc	KZ	2	2P+0C	L	PV
7Y2RZ	Control of Transport Processes	KZ	2	2P+0C	Z	PV
1Y2S1	Diploma Thesis Seminar 1	KZ	2	2P+0C	L	PV
1Y2S2	Diploma Thesis Seminar 2	KZ	2	2P+0C	Z	PV
5Y2SP	Seminar on Political Philosophy	KZ	2	2P+0C	Z	PV
7Y2SJ	Network Timetabling on the Railway Vit Janoš Vit Janoš (Gar.)	KZ	2	2P+0C	L	PV
6Y2ST	Special Technologies in Transport and Telecommunications	KZ	2	2P+0C	L	PV
6Y2SV	Special technologies in vehicle manufacturing	KZ	2	2P+0C	L	PV
BY2SD	Reliability and Diagnostics, Experimental Methods Daniel Kytý	KZ	2	2P+0C	Z	PV
5Y2SR	Stylistics and Rhetorics	KZ	2	2P+0C	Z	PV
7Y2SK	Urban and Regional Rail Transport System	KZ	2	2P+0C	L	PV
5Y2TS	Technician and Contemporary Society  Jan Feit, Eva Rezlerová	KZ	2	2P+0C	L	PV
0Y2TE	Technology of Electronic Systems	KZ	2	2P+0C	Z	PV
4Y2TU	Telecommunications Systems and Multimedia	KZ	2	2P+0C	Z	PV
6Y2TT	Transportation and Building Technology and Equipment	KZ	2	2P+0C	Z	PV
3Y2TP	Creation of legal and technical regulations	KZ	2	2P+0C	L	PV
4Y2UI	Artificial Intelligence	KZ	2	2P+0C+8B	Z,L	PV
BY2UB	Accident Biomechanics and Safety	KZ	2	2P+0C	L	PV
3Y2VZ	Leadership and Human Resource Development	KZ	2	2P+0C	L	PV
3Y2VC	Computational Mechanics in Transportation Radek Kolman	KZ	2	2P+0C	L	PV
3Y2VR	Cope with Risks in Engineering Branches Danuše Procházková	KZ	2	2P+0C		PV
2Y2ZK	Traffic Calming Zuzana arská	KZ	2	2P+0C	Z	PV
3Y2ZM	Intelligence Means and Methods Miloslav Ku era	KZ	2	2P+0C	Z	PV
naracteristics of t	the courses of this group of Study Plan: Code=Y2-NPDS 21/22 Na	me=PVP nav	/.prez. p	rogram DS	21/22	
oplication of marketing	Application of Marketing Tools in Transportation principles in transport issues, marketing tools suitable for transport, case studies of the us Safety on The Local Roads	e of marketing in	the sphere	of public pass	ZZ senger transp	2 port.
assification of road acci	Satety On The Local Roads idents rates, social looses. Collision points, diagrams. Tools and methods for safer road trans s. Pedestrian transport, cyclists. Traffic lights coordination. Transport control and regulation	•	roads from	1 .		_

ΚZ

2P+0C

Computer Graphics and Virtual Reality

16Y2PG

Application of marketing principles in transport issues, marketing tools suitable for transport, case studies of the use of marketing in the sphere of public passenger transport.

12Y2BM Safety on The Local Roads

Classification of road accidents rates, social looses. Collision points, diagrams. Tools and methods for safer road transportation. Crossroads from the point of view of safety. Psychological right of way. Roundabouts. Pedestrian transport, cyclists. Traffic lights coordination. Transport control and regulation.

23Y2BP Security Class

The most prevalent topics include data management, data and text mining applications, terrorism informatics, deception and intent detection, terrorist and criminal social network analysis, crime analysis, cyber-infrastructure protection, transportation infrastructure security, and information assurance, among others.

21Y2BS

Unmanned aircraft systems 2

Modern trends in unmanned aircraft development. Use of unmanned aircraft. Managerial activities related to the operation of unmanned aircraft. Flights beyond the applicable legislation.

Fundaments of working with CATIA, making basic parts and bodies. Making 2D sketches, geometric stucture, parametric linking, making adaptive models from 2D sketches. Import and export of made parts and bodies. Making assemble and visualization.

14Y2C2 CATIA II		
1412G2   CATIA II	KZ	2
Extension of basic course. Modeling compound bodies. Possibility of enumeration, comunications with other systems. Surface x solid bodies. Kinem	atic mechanism. F	roject making
and project cooperation. Outputs of projects.	V7	2
14Y2CS   Sensitivity of Systems Design of systems with defined reliability. The impact of changing parameters and subsystems within a system. System sensitivity computing, defini	KZ tion of sensitivity f	
matrices and their usability in system design.		u
21Y2CR CRM	KZ	2
Introduction to CRM. Analysis of air accidents. Human factor. Error. Historical development of CRM. Health and fitness. Stress and its effect on the h	uman body. Fatigu	ue Sleep &
Vigilance. Information Processing. Situational Awareness. Workload Management. Decision Making. Communication. Leadership & Decision Making. Communication. Leadership & Decision Making. Communication.		
12Y2DU Transport in the Context of Sustainability	KZ	2
Definitions of sustainable transport, historical context, development in our country and in the world. Sustainable development and sustainable transport	rt. Demand for tra	nsport. Induction
of transport. Examples of sustainable transport. Biofuels. Electromobility. New trends in transport. Practical examples.	1/7	0
15Y2DN Transportation Psychology in German Speaking Countries Introduction into broader view of traffic problems with regard to the work with texts (Physics for drivers, abusing alcohol during driving, exhaustion, g	KZ	2
in traffic, traffic accident, traffic psychology in the internet etc.)	etting of driving lit	cence, children
18Y2DC Dynamics of Transport Routes and Vehicles	KZ	2
Basic theory and calculations of more mass systems. Analysis of the forces acting between the vehicle and transport route. Creation of dynamic mode	1	
Vibration of systems with a finite number of degrees of freedom. Methods of stiffness constants and pliability constants. Fundamentals of vibration of b	ridges. Criteria for	the admissibility
of oscillation. Experimental methods in dynamics.		
18Y2EM Electron microscopy	KZ	2
Basic principles of electron microscopy, construction, control and maintenance of SEM, sample preparation, signal detection, types of detectors and		
analysis, quantification of results and automation of data processing, energy dispersive X-ray microanalysis and other analytical methods in electron	n microscopy. Eval	uation of data
obtained from ED detector, practical examples of ED microanalysis on samples.  16Y2EE Emissions and Ergonomics of Vehicles	KZ	2
Emissions and ergonomy of vehicles and the influence on man and nature. National and international law related to the hygiene. Noise and vibration	1	
physical values, ways of measuring, prevention, elimination. Exhausts - creation, measurement, reduction, non-regular fuels and drives. Ergonomy - si		
reach. Condition - heating, ventilation, air-conditioning, filtration, tiredom.	3, 3,	, , ,
17Y2FM Financing in Urban Mass Transportation	KZ	2
UMT history and development in Prague and other cities in the world. Building and operation of public tram, bus, and trolleybus networks. Undergro		peration. Other
UMT types. UMT development in small towns. Particularities of investment and operation financing of individual UMT types. Historic and present mo	dels of UMT finan	cing. Transport
inspection and blind passengers. Tourism & DMT. UMT typology & DMT. UMT typology & DMT. UMT typology amp; choice of optimum financing.		
21Y2FM Aviation Company Financial Management	KZ	2
Theories of corporate finance - financial statements, budget, forecast. Financial policy of the company. Financial resources - long-term financial resources above a long-term financial resources - long-term financial resou	ources, depreciation	on, retained
earnings, shares, bonds, loans, leasing, capital. Financial and economic analysis of the company - structure and content.  23Y2FB Physics for Security Branches	KZ	2
23Y2FB Physics for Security Branches Grounds of physics of substances and phenomena at extreme conditions. Grounds of rheology. Physics of Earth's interior. Geophysics. Physics of a	1	
dengineering branches directed to safety.	иноорного. Дрис	addiono in
18Y2FZ Physical foundation of materials' properties	KZ	2
Atomistic models, lattice defects influence on properties of materials, stiffness, plasticity, strength, fracture, fatigue, creep, corrosion, effects of envir	1	ng on materials'
behavior are the main discussed topics.		
15Y2HS Road Transport History	KZ	2
Roads and road traffic in the Ancient Age, corridors of main mediveal pathways. Development of road traffic in the modern period, acceleration of road traffic in the modern period		
1st part of 20th century. Development of road layout, geometric and construction layers. Beginning of modern road civil engineering. Development of	t road travelling in	modern period
	r road travolling in	modom ponod.
History of road intercections, bridges and traffic control, development of road signs.		
16Y2HP Vehicle Hygiene	KZ	2
	KZ s - sources, creati	2 on, propagation,
16Y2HP Vehicle Hygiene Emissions and ergonomy of vehicles and the influence on man and nature. National and international law related to the hygiene. Noise and vibration	KZ s - sources, creati	2 on, propagation,
16Y2HP Vehicle Hygiene Emissions and ergonomy of vehicles and the influence on man and nature. National and international law related to the hygiene. Noise and vibration physical values, ways of measuring, prevention, elimination. Exhausts - creation, measurement, reduction, non-regular fuels and drives. Ergonomy - si	KZ s - sources, creati	2 on, propagation,
16Y2HP Vehicle Hygiene Emissions and ergonomy of vehicles and the influence on man and nature. National and international law related to the hygiene. Noise and vibration physical values, ways of measuring, prevention, elimination. Exhausts - creation, measurement, reduction, non-regular fuels and drives. Ergonomy - si reach. Condition - heating, ventilation, air-conditioning, filtration, tiredom.	KZ s - sources, creatiting, standing, col	2 on, propagation, ntrol, operational
16Y2HP Vehicle Hygiene  Emissions and ergonomy of vehicles and the influence on man and nature. National and international law related to the hygiene. Noise and vibration physical values, ways of measuring, prevention, elimination. Exhausts - creation, measurement, reduction, non-regular fuels and drives. Ergonomy - si reach. Condition - heating, ventilation, air-conditioning, filtration, tiredom.  14Y2IS Intelligent Systems in Postal Services  The use of information systems in the postal services (ITIS, and POST, T + T, PS, KMP, DS), application of information technology in the processing postal network, optimizing logistics processes in the post. The appreciation of the real implementation of the Czech post in operation both in lectures a	KZ s - sources, creati tting, standing, col  KZ of mail processin	2 on, propagation, ntrol, operational 2 g nodes in the
16Y2HP Vehicle Hygiene  Emissions and ergonomy of vehicles and the influence on man and nature. National and international law related to the hygiene. Noise and vibration physical values, ways of measuring, prevention, elimination. Exhausts - creation, measurement, reduction, non-regular fuels and drives. Ergonomy - si reach. Condition - heating, ventilation, air-conditioning, filtration, tiredom.  14Y2IS Intelligent Systems in Postal Services  The use of information systems in the postal services (ITIS, and POST, T + T, PS, KMP, DS), application of information technology in the processing postal network, optimizing logistics processes in the post. The appreciation of the real implementation of the Czech post in operation both in lectures a desk.	KZ s - sources, creati tting, standing, con KZ of mail processin nd in the framewor	2 on, propagation, ntrol, operational  2 g nodes in the k of the practical
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16Y2HP Vehicle Hygiene  Emissions and ergonomy of vehicles and the influence on man and nature. National and international law related to the hygiene. Noise and vibration physical values, ways of measuring, prevention, elimination. Exhausts - creation, measurement, reduction, non-regular fuels and drives. Ergonomy - si reach. Condition - heating, ventilation, air-conditioning, filtration, tiredom.  14Y2IS Intelligent Systems in Postal Services  The use of information systems in the postal services (ITIS, and POST, T + T, PS, KMP, DS), application of information technology in the processing postal network, optimizing logistics processes in the post. The appreciation of the real implementation of the Czech post in operation both in lectures a desk.  12Y2IS Urban Networks  The importance and the position of UN as public and technical infrastructure / utilities, metodology of the UN master planning, of UN design, UN control of the UN master planning, of UN design, UN control of the UN master planning, of UN design, UN control of the UN master planning, of UN design, UN control of the UN master planning, of UN design, UN control of the UN master planning, of UN design, UN control of the UN master planning, of UN design, UN control of the UN master planning, of UN design, UN control of the UN master planning, of UN design, UN control of the UN master planning in the processing planning in the planning in the processing planning in the	KZ s - sources, creati tting, standing, col  KZ of mail processin nd in the framework	2 on, propagation, ntrol, operational  2 g nodes in the k of the practical
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16Y2HP   Vehicle Hygiene Emissions and ergonomy of vehicles and the influence on man and nature. National and international law related to the hygiene. Noise and vibration physical values, ways of measuring, prevention, elimination. Exhausts - creation, measurement, reduction, non-regular fuels and drives. Ergonomy - si reach. Condition - heating, ventilation, air-conditioning, filtration, tiredom.  14Y2IS   Intelligent Systems in Postal Services The use of information systems in the postal services (ITIS, and POST, T + T, PS, KMP, DS), application of information technology in the processing postal network, optimizing logistics processes in the post. The appreciation of the real implementation of the Czech post in operation both in lectures a desk.  12Y2IS   Urban Networks The importance and the position of UN as public and technical infrastructure / utilities, metodology of the UN master planning, of UN design, UN cooperation (basic technical standards of UN, trenchless technologies for UN).  14Y2JM   One-Chip Controllers One-chip controllers architecture, embedded peripherals (counters, timers, converters, ports) and their utilisation. Practical tasks are programmed verifications.	KZ s - sources, creati tting, standing, col KZ of mail processin nd in the framework KZ ordination, UN ins KZ	2 on, propagation, ntrol, operational  2 g nodes in the k of the practical  2 tallation and UN  2 chips.
16Y2HP Vehicle Hygiene Emissions and ergonomy of vehicles and the influence on man and nature. National and international law related to the hygiene. Noise and vibration physical values, ways of measuring, prevention, elimination. Exhausts - creation, measurement, reduction, non-regular fuels and drives. Ergonomy - si reach. Condition - heating, ventilation, air-conditioning, filtration, tiredom.  14Y2IS Intelligent Systems in Postal Services The use of information systems in the postal services (ITIS, and POST, T + T, PS, KMP, DS), application of information technology in the processing postal network, optimizing logistics processes in the post. The appreciation of the real implementation of the Czech post in operation both in lectures a desk.  12Y2IS Urban Networks The importance and the position of UN as public and technical infrastructure / utillities, metodology of the UN master planning, of UN design, UN cooperation (basic technical standards of UN, trenchless technologies for UN).  14Y2JM One-Chip Controllers	KZ s - sources, creati tting, standing, col KZ of mail processin nd in the framework KZ ordination, UN ins KZ with the aid of AVR	2 on, propagation, ntrol, operational  2 g nodes in the k of the practical  2 tallation and UN  2 chips.
16Y2HP   Vehicle Hygiene Emissions and ergonomy of vehicles and the influence on man and nature. National and international law related to the hygiene. Noise and vibration physical values, ways of measuring, prevention, elimination. Exhausts - creation, measurement, reduction, non-regular fuels and drives. Ergonomy - si reach. Condition - heating, ventilation, air-conditioning, filtration, tiredom.  14Y2IS   Intelligent Systems in Postal Services The use of information systems in the postal services (ITIS, and POST, T + T, PS, KMP, DS), application of information technology in the processing postal network, optimizing logistics processes in the post. The appreciation of the real implementation of the Czech post in operation both in lectures a desk.  12Y2IS   Urban Networks The importance and the position of UN as public and technical infrastructure / utillities, metodology of the UN master planning, of UN design, UN cooperation (basic technical standards of UN, trenchless technologies for UN).  14Y2JM   One-Chip Controllers One-chip controllers architecture, embedded peripherals (counters, timers, converters, ports) and their utilisation. Practical tasks are programmed via 15Y2JH   Job Hunting in English	KZ s - sources, creati tting, standing, cou  KZ of mail processin and in the framework  KZ ordination, UN ins  KZ with the aid of AVR  KZ for all the stages of	2 on, propagation, ntrol, operational  2 g nodes in the k of the practical  2 tallation and UN  2 chips.
16Y2HP   Vehicle Hygiene   Emissions and ergonomy of vehicles and the influence on man and nature. National and international law related to the hygiene. Noise and vibration physical values, ways of measuring, prevention, elimination. Exhausts - creation, measurement, reduction, non-regular fuels and drives. Ergonomy - si reach. Condition - heating, ventilation, air-conditioning, filtration, tiredom.  14Y2IS   Intelligent Systems in Postal Services The use of information systems in the postal services (ITIS, and POST, T + T, PS, KMP, DS), application of information technology in the processing postal network, optimizing logistics processes in the post. The appreciation of the real implementation of the Czech post in operation both in lectures a desk.  12Y2IS   Urban Networks The importance and the position of UN as public and technical infrastructure / utilities, metodology of the UN master planning, of UN design, UN cooperation (basic technical standards of UN, trenchless technologies for UN).  14Y2JM   One-Chip Controllers One-chip controllers architecture, embedded peripherals (counters, timers, converters, ports) and their utilisation. Practical tasks are programmed vortical standards of Un the process in the position of the interview process is mapped out, with the course including skills practise.	KZ s - sources, creati tting, standing, cou  KZ of mail processin and in the framework  KZ ordination, UN ins  KZ with the aid of AVR  KZ for all the stages of	2 on, propagation, ntrol, operational  2 g nodes in the k of the practical  2 tallation and UN  2 chips.
16Y2HP Vehicle Hygiene Emissions and ergonomy of vehicles and the influence on man and nature. National and international law related to the hygiene. Noise and vibration physical values, ways of measuring, prevention, elimination. Exhausts - creation, measurement, reduction, non-regular fuels and drives. Ergonomy - si reach. Condition - heating, ventilation, air-conditioning, filtration, tiredom.  14Y2IS Intelligent Systems in Postal Services The use of information systems in the postal services (ITIS, and POST, T + T, PS, KMP, DS), application of information technology in the processing postal network, optimizing logistics processes in the post. The appreciation of the real implementation of the Czech post in operation both in lectures a desk.  12Y2IS Urban Networks The importance and the position of UN as public and technical infrastructure / utillities, metodology of the UN master planning, of UN design, UN cooperation (basic technical standards of UN, trenchless technologies for UN).  14Y2JM One-Chip Controllers One-chip controllers architecture, embedded peripherals (counters, timers, converters, ports) and their utilisation. Practical tasks are programmed voltance of 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 including specifics for job-hunting in English. Students will also be introduced to the English vocabulary and phraseology necessary for a successful 14Y2KI Capital Investment in Transportation and Telecommunications Financial market, investment desicion making - long term goals and investment strategies, long term financing	KZ s - sources, creatiting, standing, continuing, standing, continuing, standing, continuing the framework KZ ordination, UN ins KZ with the aid of AVR KZ for all the stages of interview. KZ	2 on, propagation, ntrol, operational  2 g nodes in the k of the practical  2 tallation and UN  2 chips.  2 of this process,
16Y2HP   Vehicle Hygiene   Emissions and ergonomy of vehicles and the influence on man and nature. National and international law related to the hygiene. Noise and vibration physical values, ways of measuring, prevention, elimination. Exhausts - creation, measurement, reduction, non-regular fuels and drives. Ergonomy - si reach. Condition - heating, ventilation, air-conditioning, filtration, tiredom.  14Y2IS   Intelligent Systems in Postal Services The use of information systems in the postal services (ITIS, and POST, T + T, PS, KMP, DS), application of information technology in the processing postal network, optimizing logistics processes in the post. The appreciation of the real implementation of the Czech post in operation both in lectures a desk.  12Y2IS   Urban Networks The importance and the position of UN as public and technical infrastructure / utillities, metodology of the UN master planning, of UN design, UN cooperation (basic technical standards of UN, trenchless technologies for UN).  14Y2JM   One-Chip Controllers	KZ s - sources, creatiting, standing, continuing, standing, continuing from the framework  KZ ordination, UN instance of the stages of the sta	2 on, propagation, ntrol, operational  2 g nodes in the k of the practical  2 stallation and UN  2 chips.  2 of this process,
16Y2HP Vehicle Hygiene Emissions and ergonomy of vehicles and the influence on man and nature. National and international law related to the hygiene. Noise and vibration physical values, ways of measuring, prevention, elimination. Exhausts - creation, measurement, reduction, non-regular fuels and drives. Ergonomy - si reach. Condition - heating, ventilation, air-conditioning, filtration, tiredom.  14Y2IS Intelligent Systems in Postal Services The use of information systems in the postal services (ITIS, and POST, T + T, PS, KMP, DS), application of information technology in the processing postal network, optimizing logistics processes in the post. The appreciation of the real implementation of the Czech post in operation both in lectures a desk.  12Y2IS Urban Networks The importance and the position of UN as public and technical infrastructure / utilities, metodology of the UN master planning, of UN design, UN cooperation (basic technical standards of UN, trenchless technologies for UN).  14Y2JM One-Chip Controllers One-chip controllers architecture, embedded peripherals (counters, timers, converters, ports) and their utilisation. Practical tasks are programmed vortical postal in English. The interview process is mapped out, with the course including skills practise including specifics for job-hunting in English. Students will also be introduced to the English vocabulary and phraseology necessary for a successful 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.	KZ s - sources, creatiting, standing, continuing, standing, continuing from the framework  KZ ordination, UN institute aid of AVR KZ for all the stages of interview.  KZ Materials used for	2 on, propagation, ntrol, operational  2 g nodes in the k of the practical  2 stallation and UN  2 chips.  2 of this process,  2 car body
Intelligent Systems in the postal services (ITIS, and POST, T + T, PS, KMP, DS), application of information technology in the processing postal network, optimizing logistics processes in the post. The appreciation of the real implementation of the Czech post in operation both in lectures a desk.  12Y2IS Urban Networks  The importance and the position of UN as public and technical infrastructure / utilities, metodology of the UN master planning, of UN design, UN cooperation (basic technical standards of UN, trenchless technologies for UN).  14Y2JM One-Chip Controllers One-chip controllers architecture, embedded peripherals (counters, timers, converters, ports) and their utilisation. Practical tasks are programmed vortical specifics for job-hunting in English. Students will also be introduced to the English vocabulary and phraseology necessary for a successful 14Y2KI Capital Investment in Transportation and Telecommunications  Financial market, investment desicion making - long term goals and investment strategies, long term financing  Personal cars body, high-load car body, bus car body, and motorcycle as a construction set. Principles of design, production, testing and operation. construction. Active and passive safety parts. Ergonomics, HMI, view out of the vehicle, operational extent, view behind the car. Conditioning tools, set.	KZ s - sources, creatiting, standing, continuing, standing, continuing from the framework  KZ ordination, UN institute aid of AVR KZ for all the stages of interview.  KZ Materials used for	2 on, propagation, ntrol, operational  2 g nodes in the k of the practical  2 stallation and UN  2 chips.  2 of this process,  2 car body
Territoria description of the position of UN as public and technical infrastructure / utilitities, metodology of the UN master planning, of UN design, UN coperation (basic technical standards of UN, trenchless technologies for UN).  The One-Chip Controllers  One-C	KZ s - sources, creatiting, standing, continuing, standing, continuing, standing, continuing from the framework  KZ ordination, UN instance of the stages of	2 on, propagation, ntrol, operational  2 g nodes in the k of the practical  2 stallation and UN  2 chips.  2 of this process,  2 car body Aerodynamics
Intelligent Systems in the postal services  The use of information systems in the postal services (ITIS, and POST, T + T, PS, KMP, DS), application of information technology in the processing postal network, optimizing logistics processes in the post. The appreciation of the real implementation of the Czech post in operation both in lectures a desk.  12Y2IS  Urban Networks  The importance and the position of UN as public and technical infrastructure / utilities, metodology of the UN master planning, of UN design, UN cooperation (basic technical standards of UN, trenchless technologies for UN).  14Y2JM  One-Chip Controllers One-chip controllers architecture, embedded peripherals (counters, timers, converters, ports) and their utilisation. Practical tasks are programmed via 15Y2JH  Job Hunting in English The course provides a practical guide to applying for a job in English. The interview process is mapped out, with the course including specifics for job-hunting in English. Students will also be introduced to the English vocabulary and phraseology necessary for a successful 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. construction. Active and passive safety parts. Ergonomics, HMI, view out of the vehicle, operational extent, view behind the car. Conditioning tools, of the car body, Design and artistic design principles. Practical training.	KZ s - sources, creatiting, standing, continuing, standing, continuing, standing, continuing from the framework  KZ ordination, UN instance of the stages of	2 on, propagation, ntrol, operational  2 g nodes in the k of the practical  2 stallation and UN  2 chips.  2 of this process,  2 car body Aerodynamics
Territoria description of the position of UN as public and technical infrastructure / utilitities, metodology of the UN master planning, of UN design, UN coperation (basic technical standards of UN, trenchless technologies for UN).  The One-Chip Controllers  One-C	KZ s - sources, creatiting, standing, continuity, standing, continuity, standing, continuity, standing, continuity, standing, continuity, standing, continuity, standing, standi	2 on, propagation, ntrol, operational  2 g nodes in the k of the practical  2 stallation and UN  2 chips.  2 of this process,  2 car body Aerodynamics
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Temporation   Vehicle Hygiene	KZ s - sources, creatiting, standing, continuity, standing, continuity, standing, continuity, standing, continuity, standing, continuity, standing, continuity, standing, standing, continuity, standing, stan	2 on, propagation, ntrol, operational  2 g nodes in the k of the practical  2 stallation and UN  2 chips.  2 of this process,  2 car body Aerodynamics  2 guration and  2

21Y2LS	Air Traffic Services	KZ	2
•	ech 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.	APP a ACC contro	I. History of ATS
11Y2LG	Logics of Engineer's Judgement	KZ	2
Logical structure of eng	ineer's judgement, its propositional and predicative logical base. Solutions of logical tasks through the methods of truthfulnes		nalysis charts.
	Logical basis for network design for the solution of technical tasks.	1/7	0
23Y2MA Concept of risks and te	Risk Analysis and Management  ms. Risk sources, definition of hazard, impacts and risks. Methods for identification, analysis, assessment and management	KZ   of risks. Risk eng	2 ineering targets
-	ractice. Methods, tools and techniques for risk engineering. System of systems risk. Application of strategic and system appr	_	
· · · · · · · · · · · · · · · · · · ·	emergency and crisis planning. Human factor - its role.	1/7	
21Y2MQ History, basic definition	Quality Management Pioneers in the field of quality. International quality organisations and quality promotion in the Czech Republic. Quality mana	KZ aement system. E	2 Environmental
	ntegrated management systems. Risk management in the context of the requirements of ISO standards. Sectoral quality management	-	
<u> </u>	cellence models and corporate social responsibility. Quality audits.		
15Y2MS Sociological approach t	Sociology for Managers o a corporation. Corporation and its organization. Corporation and its running - human role and communication. Corporation,	KZ	2 cial system
	in free market economy. Corporate directorship, work groups, adaptation, strife, different roles and positions in corporation.	no culture and so	oldi System.
21Y2MK	Marketing of Air Transport	KZ	2
	se "Marketing in air transport" is the management of activities and processes using available marketing tools and processes f sales of goods and services in the aviation industry. In addition to the theoretical foundations of marketing, the lectures preser	-	
	reation of marketing strategies and planning.	it systems of mai	ket, competition
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	I calculation of
12Y2MI	Modelling of traffic noise in the CADNA A.  Urban Engineering	KZ	2
	ies storage in area, coordination engineering activities in area, arrangement of public space, concepement of public spaces.	11/2	_
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		ı ı
	ement formulation (bar and beam elements, CST, LST, quadrilateral, tetrahedral and brick elements). Natural coordinates, na ation. Numerical integration. Introduction to dynamics. FEM programming.	iturai snape iuncii	ons and
16Y2MK	Quality Methods for Vehicles	KZ	2
	ethods list, customer data acquisition and analysis of customer requirements, QFD, DFM, DFA, DFS. FMEA (Failure mode eff	ect analysis). Elei	ments of parallel
(team) design. 12Y2MD	Methods of Traffic Regulation and Prediction	KZ	2
	gnosis, traffic prognosis for large area (calculation of future traffic volumes, calculation of future traffic volumes between areas (	I	
· · · · · · · · · · · · · · · · · · ·	oution to road network). Shock wave in traffic flow. Service levels and their traffic volumes. Acceleration noise.		_
17Y2MO International relations in	International Organisations in Transportation transport, UN, EEC UN, Intergovernmental organisations, EU Offices and Agencies, Conference of European Ministries of t	KZ	2 ional mode
	ransport, Air-Rail, railways, roads, air, waterways, forwarding and postal services.	ranoport, intornat	ional mode
17Y2MS	Microsimulation of Railway Operation	KZ	2
	acteristics of simulation tools, creation of a simulation model of railway infrastructure, verification of a specific operational con ructure model and modification to the infrastructure to allow the implementation of the proposed operational concept. Stability		
-	rational concept to delays.	tosis and evalua	iono. Evaluation
17Y2MD	Modelling and optimization on transport networks	KZ	2
•	on public transport networks, scheduling vehicles, design of control plans for light-controlled intersections including green wa	ve modelling, ser	vice systems,
21Y2MS	oroblems in distribution systems - exact, heuristic and metaheuristic principles of solving problems.  Aerospace Engineering Simulation and Modelling	KZ	2
	as a set of exemplary tasks and problems based on practical aviation issues. The university degree mathematic skills and so		
•	Il figuring out. Both simple tasks, where students create own model themselves (e.g. in Matlab), and more complicated proble	ms where profess	sional developed
tools will be applied.	CNS Systems Modelling	KZ	2
-	as a set of model tasks in the field of communication navigation and surveillance systems in aviation, addressed using mathe		
	voted to air targets tracking, measurement-to-track association, track filtering and multisensor tracking.		
17Y2MT	Modern History for Engineering Students	KZ	2 United States
Selected chapters from	the 10 century history Coopelitical cityation in Europe explained on the examples of Creat Pritain, Cormony and Austrian E	mnira Diag of the	
	the 19. century history. Geopolitical situation in Europe explained on the examples of Great Britain, Germany and Austrian Ensatlantic transportation development. Imperial China: Late Qing dynasty. Selected chapters from the 20. century history: Fror		
American Civil War, tra	satlantic transportation development. Imperial China: Late Qing dynasty. Selected chapters from the 20. century history: From myths.		
American Civil War, tra Czechoslovak historica 12Y2MZ	satlantic transportation development. Imperial China: Late Qing dynasty. Selected chapters from the 20. century history: From myths.  Modernization of Railway Lines and Stations	Bellé Epoque to	Cold War.
American Civil War, trai Czechoslovak historica 12Y2MZ Line speed increasing.	nsatlantic transportation development. Imperial China: Late Qing dynasty. Selected chapters from the 20. century history: From myths.  Modernization of Railway Lines and Stations  GC and AGTC Agreement. AGC and AGTC railway network. Principles of modernization (conceptual papers, definitions of base)	KZ sic concepts, indiv	Cold War.  2 idual principles).
American Civil War, trai Czechoslovak historica 12Y2MZ Line speed increasing. I Track geometrical chara	satlantic transportation development. Imperial China: Late Qing dynasty. Selected chapters from the 20. century history: From myths.  Modernization of Railway Lines and Stations	KZ sic concepts, indiv	Cold War.  2 idual principles).
American Civil War, train Czechoslovak historica 12Y2MZ Line speed increasing. A Track geometrical charand realization of project 14Y2OP	Insatlantic transportation development. Imperial China: Late Qing dynasty. Selected chapters from the 20. century history: From myths.  Modernization of Railway Lines and Stations  INGC and AGTC Agreement. AGC and AGTC railway network. Principles of modernization (conceptual papers, definitions of base certain papers of the transport of the tra	KZ sic concepts, indiv lges and tunnels.	2 idual principles). Development
American Civil War, train Czechoslovak historica 12Y2MZ Line speed increasing. A Track geometrical chara and realization of project 14Y2OP Class, object, encapsul	Insatlantic transportation development. Imperial China: Late Qing dynasty. Selected chapters from the 20. century history: From myths.  Modernization of Railway Lines and Stations  INGC and AGTC Agreement. AGC and AGTC railway network. Principles of modernization (conceptual papers, definitions of base toteristics on modernized railway lines. Superstructure and substructure on upgraded lines. Designing of railway stations. Bricksts. Technical description of the tranzit corridors.  Object Oriented Programming in Transport ation, inheritance, polymorphism, templates, retyping, stream, exceptions, repository, collections, virtual methods and classes.	KZ sic concepts, indiv lges and tunnels.	2 idual principles). Development
American Civil War, train Czechoslovak historica 12Y2MZ Line speed increasing. A Track geometrical chara and realization of project 14Y2OP Class, object, encapsul from microscopic simul	Insatlantic transportation development. Imperial China: Late Qing dynasty. Selected chapters from the 20. century history: From myths.  Modernization of Railway Lines and Stations  INGC and AGTC Agreement. AGC and AGTC railway network. Principles of modernization (conceptual papers, definitions of base certain papers of the transport of the tra	KZ sic concepts, indiv lges and tunnels.	2 idual principles). Development
American Civil War, train Czechoslovak historica 12Y2MZ Line speed increasing. Americal chara and realization of project 14Y2OP Class, object, encapsul from microscopic simul 15Y2OZ Health protection in train	Insatlantic transportation development. Imperial China: Late Qing dynasty. Selected chapters from the 20. century history: From myths.  Modernization of Railway Lines and Stations  AGC and AGTC Agreement. AGC and AGTC railway network. Principles of modernization (conceptual papers, definitions of base interistics on modernized railway lines. Superstructure and substructure on upgraded lines. Designing of railway stations. Bricksts. Technical description of the tranzit corridors.  Object Oriented Programming in Transport ation, inheritance, polymorphism, templates, retyping, stream, exceptions, repository, collections, virtual methods and classes ation system, discrete event simulation, celular automata simulation and virtual life area.  Health Protection in Transportation and EU is portation in CR in the past and present. Conditions before 1989 and after, current legislature, future prospects. Harmonisation	KZ sic concepts, indiviges and tunnels.  KZ s. Problem cases	2 idual principles). Development  2 will be chosen
American Civil War, train Czechoslovak historica 12Y2MZ Line speed increasing. Americal chara and realization of project 14Y2OP Class, object, encapsul from microscopic simul 15Y2OZ Health protection in train members. Fundamenta	Insatlantic transportation development. Imperial China: Late Qing dynasty. Selected chapters from the 20. century history: From myths.  Modernization of Railway Lines and Stations  AGC and AGTC Agreement. AGC and AGTC railway network. Principles of modernization (conceptual papers, definitions of bas interistics on modernized railway lines. Superstructure and substructure on upgraded lines. Designing of railway stations. Bricksts. Technical description of the tranzit corridors.  Object Oriented Programming in Transport action, inheritance, polymorphism, templates, retyping, stream, exceptions, repository, collections, virtual methods and classes action system, discrete event simulation, celular automata simulation and virtual life area.  Health Protection in Transportation and EU is portation in CR in the past and present. Conditions before 1989 and after, current legislature, future prospects. Harmonisation principles of health protection and support in selected EU countries.	KZ sic concepts, indiviges and tunnels.  KZ s. Problem cases  KZ on of legislation v	2 idual principles). Development  2 will be chosen  2 vith other EU
American Civil War, train Czechoslovak historica 12Y2MZ Line speed increasing. Americal chara and realization of project 14Y2OP Class, object, encapsul from microscopic simul 15Y2OZ Health protection in train members. Fundamenta 15Y2OF	Insatlantic transportation development. Imperial China: Late Qing dynasty. Selected chapters from the 20. century history: From myths.  Modernization of Railway Lines and Stations  AGC and AGTC Agreement. AGC and AGTC railway network. Principles of modernization (conceptual papers, definitions of bas incteristics on modernized railway lines. Superstructure and substructure on upgraded lines. Designing of railway stations. Brick the state of the transit corridors.  Object Oriented Programming in Transport action, inheritance, polymorphism, templates, retyping, stream, exceptions, repository, collections, virtual methods and classes ation system, discrete event simulation, celular automata simulation and virtual life area.  Health Protection in Transportation and EU isportation in CR in the past and present. Conditions before 1989 and after, current legislature, future prospects. Harmonisation principles of health protection and support in selected EU countries.  Specialised French for Transportation and Telecommunications	KZ sic concepts, individues and tunnels.  KZ s. Problem cases  KZ on of legislation v	2 idual principles). Development  2 will be chosen  2 vith other EU
American Civil War, train Czechoslovak historica 12Y2MZ Line speed increasing. Americal chara and realization of project 14Y2OP Class, object, encapsul from microscopic simul 15Y2OZ Health protection in train members. Fundamenta 15Y2OF	Insatlantic transportation development. Imperial China: Late Qing dynasty. Selected chapters from the 20. century history: From myths.  Modernization of Railway Lines and Stations  AGC and AGTC Agreement. AGC and AGTC railway network. Principles of modernization (conceptual papers, definitions of bas interistics on modernized railway lines. Superstructure and substructure on upgraded lines. Designing of railway stations. Bricksts. Technical description of the tranzit corridors.  Object Oriented Programming in Transport action, inheritance, polymorphism, templates, retyping, stream, exceptions, repository, collections, virtual methods and classes action system, discrete event simulation, celular automata simulation and virtual life area.  Health Protection in Transportation and EU is portation in CR in the past and present. Conditions before 1989 and after, current legislature, future prospects. Harmonisation principles of health protection and support in selected EU countries.	KZ sic concepts, individues and tunnels.  KZ s. Problem cases  KZ on of legislation v	2 idual principles). Development  2 will be chosen  2 vith other EU
American Civil War, train Czechoslovak historica 12Y2MZ Line speed increasing. Americal character of project 14Y2OP Class, object, encapsul from microscopic simul 15Y2OZ Health protection in train members. Fundamenta 15Y2OF Basic transportation (pt. 18Y2OB) In the course students of the property of the project of the pr	Insatlantic transportation development. Imperial China: Late Qing dynasty. Selected chapters from the 20. century history: From myths.  Modernization of Railway Lines and Stations  AGC and AGTC Agreement. AGC and AGTC railway network. Principles of modernization (conceptual papers, definitions of bas incteristics on modernized railway lines. Superstructure and substructure on upgraded lines. Designing of railway stations. Brick the state of the transit corridors.  Object Oriented Programming in Transport action, inheritance, polymorphism, templates, retyping, stream, exceptions, repository, collections, virtual methods and classes ation system, discrete event simulation, celular automata simulation and virtual life area.  Health Protection in Transportation and EU isportation in CR in the past and present. Conditions before 1989 and after, current legislature, future prospects. Harmonisation principles of health protection and support in selected EU countries.  Specialised French for Transportation and Telecommunications in the past and present in the past and present conditions and telecommunications in the past and present in the past and present conditions before 1989 and after, current legislature, future prospects. Harmonisation principles of health protection and support in selected EU countries.	KZ sic concepts, individues and tunnels.  KZ s. Problem cases  KZ on of legislation v  KZ king and writing s  KZ with use of laborat	2 idual principles). Development  2 will be chosen  2 vith other EU  2 kills.  2 ory cameras,

16Y2PG	Computer Graphics and Virtual Reality	KZ	2
•	d processing of bitmap and vector 2D graphics, 3D virtual scenes and algorithms used for their computerized processing. Adopt	_	ith professional
22Y2PS	reation and processing of 2D, 3D and interactive graphics, and basics of programming language VRML and graphic libraries (	· · · · · · · · · · · · · · · · · · ·	2
-	Traffic Accidents Computer Simulation and Analysis  ation, multi body systems and vehicle active safety systems, vehicle slipping, external influence on virtual model, crash tests of	KZ kvaluation single-	
•	lestrian, traffic accident simulation and analysis.	svaldation, single	track vernoie,
15Y2PT	Food in Transportation	KZ	2
l l	raction transportation and foodstuffs. The health risks. Hygienic safeguard. The practical examples from the Czech Republic a	l l	
dining cars, work trains	and other railroad equipment. Legislation.		
23Y2PD	Practical vehicle dynamics	KZ	2
	nics. Multibody vehicle modeling. Modeling with IPG CarMaker. Standard and development stage experiments with road vehic	les. Realization of	f experimental
	senger vehicles. Experiment evaluation.	1/7	
15Y2PD	Practical Spanish for Transportation  lication skills, training of correct written expression of formal character, basic technical vocabulary, cultural specifics of the Spanish for Transportation.	KZ	2 ountries
Terminology of transport		Janish speaking C	ountries.
21Y2PP	Law and Operation in Air Transport	KZ	2
ı	law. International conventions on civil aviation. International organisations and including of the Czech Republic in these organisations.	1	_
aviation. Execution of sta	ate administration and state supervision in matters of civil aviation, in accordance with Act No. 49/1997 Col. Facilitation. Resp	onsibilities of air o	carriers for
passengers, luggage an	d cargo. The safe transport of dangerous goods.		
20Y2PR	Prediction of time series	KZ	2
	es prediction, meaning of prediction, basics of quantitative prediction. Methods for predictive quality evaluation, descriptive state		
	general formula of loss function. Calculation and programming environment R. Regression models, basics of linear regressions to of linear regressions of l	on, simple regress	ion. Multiple
12Y2PV	Public transport priority	KZ	2
	ackbone of sustainable mobility. Public transport priority (PTP) in strategic documents. PTP in the Czech Republic and abroac		
	ionship between Basics of public transport stops and stations design. PTP measures and evaluation of their operation. Econo		-
PTP. The process of pre	· -		
14Y2PI	Process Information Systems in Transportation	KZ	2
	d usage of transport information systems, e.g. EFC, ePurse and transport check-in systems for public transport with focus on		
· · ·	Architecture). Inforamtion systems implementation and operations description in the Czech Republic (technical and process)		
14Y2PJ	C++ Programming Language sics of C++ programming language. Class, object, constructor, destructor, inheritance, abstract class, virtual methods, exceptio	KZ	2
	ta type implementation in C++.	13, 31104113, 1110411	od and operator
14Y2PH	CAD Interface Programming	KZ	2
	rface programming techniques with the help of LIST and VBA programming languages. Possibilities of proper objects (comm		
applications creation in	CAD systems. Programming of cooperation with other applications (databases, spread-sheets).		
11Y2PM	Programming in MATLAB	KZ	2
	of modelling and simulation, description of Matlab environment and its settings, optimization and program code debugging, description of Matlab environment and its settings, optimization and program code debugging, description	ata fitting and des	igning GUI in
Matlab. 21Y2PL	Operational Aspects of Aerodromes	KZ	2
	reperational Aspects of Aerodromes  erodromes. Location of aerodrome and orientation of runways. Requirements for apron. Capacity of airports runways and ter		
•	inits. Protection against unlawful interference. Local transport connection. Environmental protection.	······aio: operation	andor mino.
15Y2PU	Publications and Their Creation	KZ	2
Scientific texts types. Fo	otnotes and references. Exploration of facts. Quotations. Formal document layout. Working with information databases. Typoc	raphic principles.	Typographic
	aTeX. Practical creation of simple scientific documents.		
12Y2RD	Realization of Transport Buildings	KZ	2
· · · · · · · · · · · · · · · · · · ·	es. Project Documentation Types. Building Code. Land Permission and Building Permission Process. Building Process. Project		
17Y2RZ	Control of Transport Processes  port system, decomposition, factors influencing control, quality diagnosis, methods of control, systems for decision making si	KZ	2
telematics.	port system, decomposition, factors initidencing control, quality diagnosis, methods of control, systems for decision making si	apport, risk or dec	ision making,
21Y2S1	Diploma Thesis Seminar 1	KZ	2
· ·	view, applied research, basic research, work dealing with design proposals). Working with citation sources (citation database		
current state (writing sta	ndards). Definition of the limitations of the current state. Introduction to the methodology of writing final theses.		
21Y2S2	Diploma Thesis Seminar 2	KZ	2
	nal theses. Definition of materials and methods, approach to obtaining results, presentation and discussion of results, formulation		
<ul><li>and presentation, basic</li><li>working with LaTeX an</li></ul>	statistics, validation of results and proposals. Achieving the objectives of the paper and evaluation of hypotheses tests. Forma	and graphic desi	ign of the paper
15Y2SP	Seminar on Political Philosophy	KZ	2
	ical texts, view of society, state and their system of government.	IVZ	2
17Y2SJ	Network Timetabling on the Railway	KZ	2
l l	acity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds an	I	
circulation planning. Rul	es of train-diagramm creating. Timetables for more service-levels on the line. Construction slot conflicts between passenger-	and freight transpo	ort. Network line
	es, timetables for lines under construction.		
16Y2ST	Special Technologies in Transport and Telecommunications	KZ	2
•	technologies, electric arc and its applications, plasma technologies, dipping, beam technologies, electron beams technology	in roduction and i	menaing of
16Y2SV	technologies, soldering, gluing, ultrasound, diffusion, friction and explosion technologies, micro stoves, gas.  Special technologies in vehicle manufacturing	KZ	2
	technologies, electric arc and its applications, plasma technologies, dipping, beam technologies, electron beams technology		
			- I

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

18Y2SD	Reliability and Diagnostics, Experimental Methods	KZ	2
	ed on theoretical background and practical experience in the field of reliability of constructions, implementation of diagnostic productions.	1	<del>-</del>
	nation of residual life of structures. For this purpose, non-destructive methods of experimental mechanics (e. g. strain-gauge me		
ptical methods, inc	cluding electron microscopy, will be used.	•	
I5Y2SR	Stylistics and Rhetorics	KZ	2
	and written expression as a means of human communication. Basic information about speech, articulation, oral and written language.	1 1	_
	g. Language semantics, language syntactic and the pragmatic aspect. Creative thought and its oral and written expression. Prac	, ,	
7Y2SK	Urban and Regional Rail Transport System	KZ	2
_	transport demand, modal-split, traffic flows distribution on public transit network. Line network optimization and configuration. Ti	1	_
_	periodic timetable. Rolling stock circulation, staff and crew services optimization and their order to rosters. Framework legislation		
f public transport.		i, non bannor oncote	o ana proiorona
5Y2TS	Technician and Contemporary Society	KZ	2
-	It 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	1	<del>-</del>
,	spapers, what are the sights for, interest in public affairs - a hangover from the past?	on a r o, it must be	tide - it 3 oii ti
OY2TE	Technology of Electronic Systems	KZ	2
-	es for an effective operation of electronically controlled systems. Maintaining, meassuring, optimization of safety and reliability of	1 1	<del>-</del>
	es for all effective operation of electronically controlled systems, maintaining, meassuring, optimization of safety and reliability of directions, interconnection and repairs technologiesusers and operators.	of complex systems.	. Serriconducti
		1/7	
4Y2TU	Telecommunications Systems and Multimedia	KZ	2
	ommunications namely applied in transport solutions, identification and quantification of telecommunications networks and service	as performance base	ed on redunda
	sioning of guaranteed service quality, two generations of the handover principles.	1/7	
6Y2TT	Transportation and Building Technology and Equipment	KZ	2
	building technology and equipment.Transport of solid and mass material, soil and rock above all. Highway and underground co		
-	n and construction features, delivered mass calculation, economy of operation. Technics and technology of underground constru	ctions. Terrestrial ve	chicles operation
	odology (ultrasound, laser, GPS, total stations).		
3Y2TP	Creation of legal and technical regulations	KZ	2
	on, structure of the bills of law, legal process, compatibility with the EC law, the creation of technical standards and their publication	ation, ÚNMZ (Czech	Office for
tandards, metrolog	y and testing) in Czech Republic, organizations CEN, CENELEC and ETSI, the notification process.		
4Y2UI	Artificial Intelligence	KZ	2
listory of artificial ir	ntelligence, knowledge, its representation including frames, state space search, constraints, genetic algorithms, machine learni	ng.	
8Y2UB	Accident Biomechanics and Safety	KZ	2
natomy of man. Me	ethods of Medical Diagnostics - RTG, CT, MRI, US. Dynamics of traumatic events. Factors influencing the severity of an acciden	t and the extent of a	traffic accider
juries in road traffi	ic. Pedestrian injuries. Injury in railway and air traffic accidents. Analysis of biomechanical events in accidents and their computa	ational modeling. Pr	rinciples of
eatment and rehab	pilitation. Protective elements and safety measures in transport.		
3Y2VZ	Leadership and Human Resource Development	KZ	2
troduction to the s	tudy of human resources, human resources management, corporate goals, strategies, cultural and ethical aspects. Team mana	agement, communic	cation in teams
	ng in human resources, ethics and corporate culture, cross-cultural differences. The labor code. Introduction into protocols.	,	
8Y2VC	Computational Mechanics in Transportation	KZ	2
-	vork and variational principles in FEM. Bar shaped, planar and three - dimensional structures in FEM. FEM in statics and in dyn	I I	_
•	c and viscoelastic material. FEM in problems of biomechanics. Numerical analysis of structural parts with programme ANSYS of	•	
3Y2VR	Cope with Risks in Engineering Branches	KZ	2
	g branches directed to risks, procedures used in risk engineering, ensuring the secured systems, ensuring the safe systems, en		_
2Y2ZK	Traffic Calming	KZ	2
rinciples of traffic o	calming. Solution of road network organization. Urban road layouts. Psychological and physical obstacles (measures of traffic ca	aiming) and their co	imbinations.
	sures in crossroads. Pedestrian zones. Residential streets and zones.		
<u>_</u>	Untalligance Magne and Mathade	KZ	2
3Y2ZM	Intelligence Means and Methods	, ,	
3Y2ZM istory and the pres	ent of intelligence services and their role in the modern world. How intelligence services handle with information. Methods and pro	ocedures of collecting	g and evaluatir
3Y2ZM istory and the pres formation. Means		ocedures of collecting	g and evaluatir

Name of the block: Jazyky

Minimal number of credits of the block: 8

The role of the block: J

Code of the group: JZ-N-DS 20/21

Name of the group: Jazyk nav.1.-4.sem. (od) 20/21 - program DS

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 Eva Rezlerová, Irena Veselková	Z	2	0P+2C+10B	Z	J
15J2I1	Language - Italian 1 Eva Rezlerová, Irena Veselková	Z	2	0P+2C+10B	Z	J

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

Characteristics of the courses of this group of Study Plan: Code=JZ-N-DS 20/21 Name=Jazyk nav.1.-4.sem. (od) 20/21 - program DS 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 Ζ 15J2I1 Language - Italian 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. 15J2N1 Language - German 1 7 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 - Russian 1 15J2R1 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 15.1251 Language - Spanish 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 15.JBF2 Language - French 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 - 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 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 Z 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.IBS2 Language - Spanish 2 Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, feedback skills, summarising technical text content, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and technical registers and their use, language of management 15JBF3 Language - French 3 Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation. 15JBI3 Language - Italian 3 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 7K Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation. 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 Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation. Language - Russian 4 15JBR4 Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation. 15.JBS4 Language - Spanish 4 7K Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge

Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation.

### List of courses of this pass:

Code	Name of the course	Completion	Credits
11STS	Stochastic Systems	Z,ZK	4
The subject deals	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	insportation 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
Logical structure of	of engineer's judgement, its propositional and predicative logical base. Solutions of logical tasks through the methods of truthfulness  Venn's diagram method. Logical basis for network design for the solution of technical tasks.	and semantic analy	sis charts.
11Y2PM	Programming in MATLAB	KZ	2
To explain the prin	ciple of modelling and simulation, description of Matlab environment and its settings, optimization and program code debugging, da Matlab.	a fitting and design	ning GUI in
12BED	Road Safety Audit	Z,ZK	4
	ations of safety assessments (especially Road Safety Audit, Road Safety Inspection) during the process of preparations, and of the pd d minimize traffic accident risks for all those who take part in road traffic. Application of European Directive 2008/96/EC on road safe		

12DAZP	Transport and Environment	Z,ZK	4
This course aims th	e impact of transport on environment. The accent is put mainly on noise and vibration, emission, barrier effect and energy demands.  parcel of this course.	The noise measur	y is part and
12IDOS	Integrated Transport Systems	ZK	3
Reasons for build	ling of integrated transport systems, principle of integration, dividing of integration methods, traffic, infrastructure, technical, organiza tariff, sales systems, information systems, marketing of system, examples of non-integration.	tional methods, into	egration of
12IKD	Rail Transport Infrastructure	Z,ZK	5
	lateral acceleration, parameters eduction for transition curve and cant transition, curves without straight, track spacing change. Track det design, slab track. Tram-train. Interoperability. Noise precautions. Railway line modernization for non-tilting and tilting trains	ailed construction.	1
12MSD	Traffic Models	Z,ZK	4
	Practical creation of traffic models as well as their calibration. Applying new trends in traffic planning with the aim on Smart cities	solutions.	1
12NAPI Design and const	Design and Maintenance of Transportation Structures ruction of cement-concrete pavements and their maintenance. Construction of bridge objects, examples and choice of bridge construant and operation of tunnels.	Z,ZK uction materials. Co	4 onstruction
12TEAP	Theory of Road Traffic Operation	Z,ZK	7
Traffic paramete statistical and mi	Traffic excesses management. Road assessment and maintenance methods. Health risks assessment.	ntical models - mac n and highway mar	
12TKVP	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, f	ocusing on
12UMUP	Sustainable Mobility and Land - Use Planning	Z,ZK	5
	objectives and tasks, development over time. Land-use planning tools. SUMP. Territorial and transport planning context. Ways of urb		_
transport. Basic pri	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 for pedestrian and bicycle transport. Suburbanization and transport. City economics.	quare and the road	ds. Solutions
12VRZ	High Speed Rail Transport	KZ	3
High speed railway	(HSR) transport characteristics and position in transportation system. Types / models of HSR systems, preparation of high speed rails. Non-adhesion HSR systems. City and region traffic service by HSR. HSR operating points. HSR worldwide network. HSR routing a of HSR track construction and layout track parameteres.	י way lines building i	
12XN1	Master Project 1	Z	2
12XN2	Master Project 2	Z	2
12XN3	Master Project 3	Z	1
12XN4	Master Project 4	Z	8
12XNDD	Master Thesis for study programme DS	Z	18
12Y2BM	Safety on The Local Roads	KZ	2
Classification of 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 Definitions of susta	Transport in the Context of Sustainability inable transport, historical context, development in our country and in the world. Sustainable development and sustainable transport. If transport, Examples of sustainable transport. Biofuels, Electromobility, New trends in transport. Practical examples.	KZ Demand for transpo	2 ort. Induction
12Y2IS	Urban Networks	KZ	2
	d the position of UN as public and technical infrastructure / utillities, metodology of the UN master planning, of UN design, UN coord operation (basic technical standards of UN, trenchless technologies for UN).	l .	
12Y2KE	Landscape Ecology	KZ	2
	gy. Landscape - definition, types, evolution. Landscape systems. Anthropogenic impacts on landscape. Methods using for evaluating and its potential applications in landscape ecology. Landscape planning.	I	
12Y2KS	Rail Transport in Settlements and Regions	KZ	2
Modernization ar	nd development of railway infrastructure in Czech Republic. Arrangement of railway networks and junctions. Suburban railway service ation of metro systems. Network configuration and operation of tram systems. Special thematic lectures (rail transport in selected course	s. Network configu	I
12Y2MD	Methods of Traffic Regulation and Prediction	KZ	2
	c prognosis, traffic prognosis for large area (calculation of future traffic volumes, calculation of future traffic volumes between areas (and modal split, traffic distribution to road network). Shock wave in traffic flow. Service levels and their traffic volumes. Acceleration	alogical and synthe	1
12Y2MH	Measurement and Modeling of Traffic Noise	KZ	2
	uction to noise from traffic. Noise from rail transport. Noise from road traffic. Measurement and calculation of noise from rail traffic. Modelling of traffic noise in the CADNA A.	1	I
12Y2MI	Urban Engineering eaching aming on utilities storage in area, coordination engineering activities in area, arrangement of public space, concepement of public space.	KZ	2
12Y2MZ		KZ	2
Line speed increas	Modernization of Railway Lines and Stations ing. AGC and AGTC Agreement. AGC and AGTC railway network. Principles of modernization (conceptual papers, definitions of basic of characteristics on modernized railway lines. Superstructure and substructure on upgraded lines. Designing of railway stations. Bridgand realization of projects. Technical description of the tranzit corridors.	concepts, individua	l principles)
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. T Relationship between Basics of public transport stops and stations design. PTP measures and evaluation of their operation. Econon PTP. The process of preparing PTP measures.	• •	_
12Y2RD	Realization of Transport Buildings	KZ	2
Transport Buildings	Types. Project Documentation Types. Building Code. Land Permission and Building Permission Process. Building Process. Project Ec	onomics. Project M	anagement
12Y2ZK Principles of traff	Traffic Calming  ic 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. Traffic calming measures in preserved. Pedestrian zones. Psychological and physical obstacles (measures of traffic calming.)	KZ ning) and their com	2 binations.
	Traffic calming measures in crossroads. Pedestrian zones. Residential streets and zones.		

12ZSUZ	Dailyany Stations and Contract	7 71/	
	Railway Stations and Centres senger transport. Platform construction. Access roads to platforms. Modification of railway stations according to the TSI PRM. Station h	Z,ZK eads design Vari	3
	of station heads for current ride. Junction stations. Crossing stations. Passenger stations. Moving stations. Public transport term	inals.	T
14GISS Construction	Geographical Information Systems on of saving format of space-oriented information land-survey and cartography minimum basic tasks of spatial operations principles of	KZ territorial identific	2 ation
14XN1	Master Project 1	Z	2
14XN2	Master Project 2	<u></u>	2
14XN3	Master Project 3	<u>Z</u>	1
14XN4	Master Project 4	<u>Z</u>	8
	·	Z	
14XNDD	Master Thesis for study programme DS		18
14Y2C1 Fundaments of v	CATIA I  vorking with CATIA, making basic parts and bodies. Making 2D sketches, geometric stucture, parametric linking, making adaptive mod  and export of made parts and bodies. Making assemble and visualization.	KZ els from 2D sketc	2 hes. Import
14Y2C2 Extension of bas	CATIA II ic course. Modeling compound bodies. Possibility of enumeration, comunications with other systems. Surface x solid bodies. Kinematic and project cooperation. Outputs of projects.	KZ mechanism. Pro	2 ject making
14Y2CS Design of syster	Sensitivity of Systems  ms with defined reliability. The impact of changing parameters and subsystems within a system. System sensitivity computing, definition and their respective and their respective parameters.	KZ n of sensitivity fur	2 nctions and
4.4\/010	matrices and their usability in system design.	1/7	2
	Intelligent Systems in Postal Services nation systems in the postal services (ITIS, and POST, T + T, PS, KMP, DS), application of information technology in the processing of stimizing logistics processes in the post. The appreciation of the real implementation of the Czech post in operation both in lectures and in desk.  One-Chip Controllers	-	odes in the
	trollers architecture, embedded peripherals (counters, timers, converters, ports) and their utilisation. Practical tasks are programmed		I .
14Y2KI	Capital Investment in Transportation and Telecommunications	KZ	2
44\/200	Financial market, investment desicion making - long term goals and investment strategies, long term financing	W7	
14Y2OP Class, object, en	Object Oriented Programming in Transport capsulation, inheritance, polymorphism, templates, retyping, stream, exceptions, repository, collections, virtual methods and classes.	KZ Problem cases wil	2 be chosen
	from microscopic simulation system, discrete event simulation, celular automata simulation and virtual life area.		
14Y2PH	CAD Interface Programming	KZ	2
Introduction to CA	AD interface programming techniques with the help of LIST and VBA programming languages. Possibilities of proper objects (comman	ds), dialogues, int	erfaces, and
4.4\/0.DI	applications creation in CAD systems. Programming of cooperation with other applications (databases, spread-sheets).	1/7	
14Y2PI	Process Information Systems in Transportation  detailed usage of transport information systems, e.g. EFC, ePurse and transport check-in systems for public transport with focus on a	KZ	2 system and
	Driented Architecture). Inforamtion systems implementation and operations description in the Czech Republic (technical and process)		-
14Y2PJ	C++ Programming Language	KZ	2
•	and basics of C++ programming language. Class, object, constructor, destructor, inheritance, abstract class, virtual methods, exceptions, overloading, abstract data type implementation in C++.		l .
14Y2TU	Telecommunications Systems and Multimedia	KZ	2
	communications namely applied in transport solutions, identification and quantification of telecommunications networks and services per architecture, provissioning of guaranteed service quality, two generations of the handover principles.		1
14Y2UI	Artificial Intelligence	KZ	2
	istory of artificial intelligence, knowledge, its representation including frames, state space search, constraints, genetic algorithms, mad		_
15J2A1	Language - English 1  Presentation Skills - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work	Z	2
		Z	2
	Language - French 1  ctures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills,	feedback skills, s	ummarising
	tent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and ted language of management.	_	nd their use
15J2I1	Language - Italian 1	Z	2
	actures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, tent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and techniques are language of management.		_
15J2N1	Language - German 1	Z	2
	ctures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, tent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and tecleration language of management.		-
15J2R1	Language - Russian 1	Z	2
Grammatical Stru	tent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and teclianguage of management.	feedback skills, s	ummarising
15J2S1	Language - Spanish 1	Z	2
Grammatical Stru	Language - Spanish i inctures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, tent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and tec	feedback skills, s	ummarising
	language of management.		

			1
15JBA3	Language - English 3	Z	2
Presentation Skills	<ul> <li>expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work engagement. Opti</li> <li>FCE, CAE.</li> </ul>	onal courses for	cermicates
15JBA4	Language - English 4	ZK	2
	- expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work engagement.Opti		certificates
	FCE, CAE.		
15JBF2	Language - French 2	. Z	2
	ures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, int, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and tech		
echnical text conte	language of management.	inicai registers a	na men us
15JBF3	Language - French 3	Z	2
Grammar and stylis	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la	nguage structure	knowledg
and perceptive and	communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work w	ith (professional	) text and i
	features. Practice of oral and written presentation.		
15JBF4	Language - French 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		_
and perceptive and	features. Practice of oral and written presentation.	iti (professional	) text and i
15JBI2	Language - Italian 2	Z	2
3rammatical Struct	ures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, t	feedback skills,	ı summarisir
echnical text conte	nt, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and tech	nnical registers a	nd their us
	language of management.		
15JBI3	Language - Italian 3	Z	2
•	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work w		•
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15JBI4	Language - Italian 4	ZK	2
	tics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la		
and perceptive and	$communicative \ skills, \ vocabulary \ development. \ Basic \ stylistic \ forms. \ Presentation \ of \ own \ knowledge \ in \ oral \ and \ written \ form. \ Work \ written \ form. \ where \ we have the presentation \ of \ own \ knowledge \ in \ oral \ and \ written \ form. \ where \ we have the presentation \ of \ own \ knowledge \ in \ oral \ and \ written \ form.$	ith (professional	) text and i
	features. Practice of oral and written presentation.		
15JBN2	Language - German 2	. Z	2
	ures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, the tructuring proportations and provided communicative skills, the tructuring proportation of the provided communicative skills, the tructuring proportation of the provided communicative skills, the provided communicative skills and the provided communicative skills are provided communicative skills.		
echnical text conte	nt, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and tech language of management.	illicai registers a	iliu ilieli us
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-		nguage structure	knowledg
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Scientific texts types. Footnotes and references. Exploration of facts. Quotations. Formal document isyout. Working with information databases. Typographic principles. Typographic editions with Work Text. Air. A.P. Actical creation of simple sicentific documents.  15Y2SR   Seminar on Political Philosophy   KZ   2  15Y2SR   Seminar on Political Philosophy   KZ   2  15Y2SR   Slylistics and Rhetorics   Slylistics and Rhetorics   Slylistics and Rhetorics   KZ   2  saic skills of oral and written expression as a means of human communication. Basic information about speech, articulation, oral and written language praematics, language praematics and the pragmatic aspect. Creatively thought and its oral and written expression. Practice - cultivating the skills of speech type to take of a hat in a room and open a door for a lady, are three simple solutions, science vs belief, do we need to know or is it enough to turn on a PC, it must be true - 1's on the Internet and in newspapers, what are the sights for, interest in public affairs - a hangover from the past?  16PDP   Principles of Vehicle Design   ZK   2  Design of transportation vehicle according to its usage and function. Marketing and user demands. Vehicle dynamics. Propulsion systems. Design process, functional design and vehicle decides of the structure. Evaluation of variant concepts, Design phases. Realiability, technological aspects decides of the structure. Evaluation of variant concepts, Design phases. Realiability, technological aspects decides of the structure. Evaluation of variant concepts, Design phases. Realiability, technological aspects decides of the structure. Evaluation of variant concepts, Design phases. Realiability, technological aspects decides of the structure. Evaluation of variant and dynamics systems. Simulation and optimization methods. Hardware in the Loop of the philosophylase of variant and phylases of dynamical phenomena for vehicles of on-land carriage.  16XN1		dining cars, work trains and other railroad equipment. Legislation.		
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Inissions and Ergonomics of Vehicles  Emissions and Ergonomics of Vehicles  KZ 2  missions and ergonomy of vehicles and the influence on man and nature. National and international law related to the hygiene. Noise and vibrations - sources, creation, propagation hysical values, ways of measuring, prevention, elimination. Exhausts - creation, measurement, reduction, non-regular fuels and drives. Ergonomy - sitting, standing, control, operational reach. Condition - heating, ventilation, air-conditioning, filtration, tiredom.  16Y2HP  Wehicle Hygiene  Wissions and ergonomy of vehicles and the influence on man and nature. National and international law related to the hygiene. Noise and vibrations - sources, creation, propagation hysical values, ways of measuring, prevention, elimination. Exhausts - creation, measurement, reduction, non-regular fuels and drives. Ergonomy - sitting, standing, control, operational reach. Condition - heating, ventilation, air-conditioning, filtration, tiredom.  16Y2KV  Car Body Design  KZ 2  Personal cars body, high-load car body, bus car body, and motorcycle as a construction set. Principles of design, production, testing and operation. Materials used for car body construction. Active and passive safety parts. Ergonomics, HMI, view out of the vehicle, operational extent, view behind the car. Conditioning tools, signaling function. Aerodynamics of the car body. Design and artistic design principles. Practical training.  16Y2MK  Quality Methods for Vehicles  RZ 2  tuality management methods list, customer data acquisition and analysis of customer requirements, QFD, DFM, DFA, DFS. FMEA (Failure mode effect analysis). Elements of paralle (team) design.  16Y2PG  Computer Graphics and Virtual Reality  rinciples of creation and processing of bitmap and vector 2D graphics, 3D virtual scenes and algorithms used for their computerized processing. Adopting skills of work with professional and freeware tools for creation and processing of 2D, 3D and interactive graphics, and basics of programming		· · · · · · · · · · · · · · · · · · ·		
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vehicles, laser and laser technologies, soldering, gluing, ultrasound, diffusion, friction and explosion technologies, micro stoves, gas.	Micro, nano and sp			mending of
		vehicles, laser and laser technologies, soldering, gluing, ultrasound, diffusion, friction and explosion technologies, micro stoves	s, gas.	

16Y2TT	Transportation and Building Technology and Equipment	KZ	2
•	nd building technology and equipment. Transport of solid and mass material, soil and rock above all. Highway and underground const	•	
vehicles, description	n and construction features, delivered mass calculation, economy of operation. Technics and technology of underground constructions	. Terrestrial vehicle	es operation
477710	management methodology (ultrasound, laser, GPS, total stations).	7 71/	
17TZND	Technology of Railway Transport	Z,ZK	4
	assesment, model operational situation with a system running time between IPT-nodes, calculation of traction energy savings completing crossing station, solving of capacity problem and blocking time in relation to train protection system, robustness of timetable, sy		
for doorgrining or no	paths, guidelines for centralised operational traffic control and management.	otom concept of it	oignt tidin
17XN1	Master Project 1	Z	2
17XN2	Master Project 2	Z	2
17XN3	Master Project 3	Z	1
17XN4	Master Project 4	Z	8
17XNDD	Master Thesis for study programme DS	Z	18
17Y2AM	Application of Marketing Tools in Transportation	KZ	2
	narketing principles in transport issues, marketing tools suitable for transport, case studies of the use of marketing in the sphere of principles in transport issues, marketing tools suitable for transport, case studies of the use of marketing in the sphere of principles in transport issues, marketing tools suitable for transport, case studies of the use of marketing in the sphere of principles in transport issues, marketing tools suitable for transport, case studies of the use of marketing in the sphere of principles in transport issues.		
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		
UMT types. UMT d	levelopment in small towns. Particularities of investment and operation financing of individual UMT types. Historic and present models	s of UMT financing	. Transport
47) (OL4D	inspection and blind passengers. Tourism & DMT. UMT typology & DMT. UMT typology amp; choice of optimum financing.		
17Y2MD	Modelling and optimization on transport networks	KZ	2
Coordination prob	lems on public transport networks, scheduling vehicles, design of control plans for light-controlled intersections including green wave modelling of advanced problems in distribution systems - exact, heuristic and metaheuristic principles of solving problems.	•	e systems,
17Y2MO	International Organisations in Transportation	KZ	2
	tions in transport, UN, EEC UN, Intergovernmental organisations, EU Offices and Agencies, Conference of European Ministries of transport		
	organisations of public transport, Air-Rail, railways, roads, air, waterways, forwarding and postal services.	. ,	
17Y2MS	Microsimulation of Railway Operation	KZ	2
Introduction to the	characteristics of simulation tools, creation of a simulation model of railway infrastructure, verification of a specific operational conce	ot on the given infr	astructure,
adaptation of the in	frastructure model and modification to the infrastructure to allow the implementation of the proposed operational concept. Stability tes	ts and evaluations	. Evaluation
	of sensitivity of the operational concept to delays.		
17Y2MT	Modern History for Engineering Students	KZ	2
-	from the 19. century history. Geopolitical situation in Europe explained on the examples of Great Britain, Germany and Austrian Emp /ar, transatlantic transportation development. Imperial China: Late Qing dynasty. Selected chapters from the 20. century history: From		
American civii vi	Czechoslovak historical myths.	Delle Epoque to C	Joid Wai.
17Y2RZ	Control of Transport Processes	KZ	2
l l	transport system, decomposition, factors influencing control, quality diagnosis, methods of control, systems for decision making sup	1	
	telematics.		
17Y2SJ	Network Timetabling on the Railway	KZ	2
	es. Capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds and		-
circulation planning	Rules of train-diagramm creating. Timetables for more service-levels on the line. Construction slot conflicts between passenger- and	freight transport. N	Network line
17V2CV	relations and waiting times, timetables for lines under construction.	V7	
17Y2SK	Urban and Regional Rail Transport System transport demand, modal-split, traffic flows distribution on public transit network. Line network optimization and configuration. Timeta	KZ	2 evaluation
_	d periodic timetable. Rolling stock circulation, staff and crew services optimization and their order to rosters. Framework legislation, non		
0 0	of public transport. Marketing.		
18GAZ	Geomechanics and Foundation Engineering	Z,ZK	3
Geology (basics of	pertrographyand stratigraphy), mechanics of soils (classification of fundamental soils, mechanic properties of fundamental soils, per	meability), planar f	oundations
(footings, footers, p	lates, depth of founding), determination of planar foundations bearing and deformation, depth foundations – classification of depth for	undations elements	s, examples
4075414	of their use, piles (classification, technology od performing).	7.71	
18TEAM	Theoretical and Applied Mechanics theory of plasticity. Plasticity conditions. Elastoplastic and plastic states of cross-sections and beams. Reliability and durability of stru	Z,ZK	4
Fulldamentals of	state around a notch. Stress intensity factor. Fracture toughness. Energy methods of linear fracture mechanics. Crack driving for		anu Strain
18TIK	Theory of Engineering Structures	Z,ZK	4
	pon the knowledge gained in basic mechanics courses in bachelor study (especially Statics and Elasticity) in the field of mathematica		
	and axisymmetric problems, as well as on the calculation of stress and strain in plates and shells. Students are further acquainted w		
	behavior of subsoil used in the design of line structures.		
18XN1	Master Project 1	Z	2
18XN2	Master Project 2	Z	2
18XN3	Master Project 3	Z	1
18XN4	Master Project 4	Z	8
18XNDD	Master Thesis for study programme DS	Z	18
18Y2DC	Dynamics of Transport Routes and Vehicles	KZ	2
	cllculations of more mass systems. Analysis of the forces acting between the vehicle and transport route. Creation of dynamic models of		
Vibration of systems	s with a finite number of degrees of freedom. Methods of stiffness constants and pliability constants. Fundamentals of vibration of bridge	es. Criteria for the a	admissibility
40\/054	of oscillation. Experimental methods in dynamics.	1/7	
18Y2EM	Electron microscopy of electron microscopy, construction, control and maintenance of SEM, sample preparation, signal detection, types of detectors and c	KZ	2
	or election microscopy, construction, control and maintenance of SEM, sample preparation, signal detection, types of detectors and categories and control and the support of the support o		
	obtained from ED detector, practical examples of ED microanalysis on samples.		

18Y2FZ	Physical foundation of materials' properties	KZ	2		
	lattice defects influence on properties of materials, stiffness, plasticity, strength, fracture, fatigue, creep, corrosion, effects of environm behavior are the main discussed topics.		n materials'		
18Y2MP	Finite Element Method And Its Application	KZ	2		
	ical formulation of the Finite Element Method. Direct Stiffness Method used in structural mechanics. Evaluation of stiffness matrices for				
variational prin	variational principles. Element formulation (bar and beam elements, CST, LST, quadrilateral, tetrahedral and brick elements). Natural coordinates, natural shape functions and				
	isoparametric representation. Numerical integration. Introduction to dynamics. FEM programming.				
18Y2OB	Optical Contactless Strain Measurements	KZ	2		
	dents will get theoretical knowledge and practical experience in optical strain measurement methods. Students will get experience with				
	speed cameras for acquisition of suitable image data and with digital image correlation algorithms for displacements measurements				
18Y2SD	Reliability and Diagnostics, Experimental Methods ged on theoretical background and practical experience in the field of reliability of constructions, implementation of diagnostic procedur	KZ	2 of material		
	nination of residual life of structures. For this purpose, non-destructive methods of experimental mechanics (e. g. strain-gauge measure				
	optical methods, including electron microscopy, will be used.	, , , , , , , , , , , , , , , , , , , ,	,,		
18Y2UB	Accident Biomechanics and Safety	KZ	2		
	lethods of Medical Diagnostics - RTG, CT, MRI, US. Dynamics of traumatic events. Factors influencing the severity of an accident and				
Injuries in road t	raffic. Pedestrian injuries. Injury in railway and air traffic accidents. Analysis of biomechanical events in accidents and their computations.	onal modeling. Prir	nciples of		
18Y2VC	treatment and rehabilitation. Protective elements and safety measures in transport.	KZ	2		
	Computational Mechanics in Transportation  work and variational principles in FEM. Bar shaped, planar and three - dimensional structures in FEM. FEM in statics and in dynamic				
	elastoplastic and viscoelastic material. FEM in problems of biomechanics. Numerical analysis of structural parts with programme AN	•	•		
20XN1	Master Project 1	Z	2		
20XN2	Master Project 2	 Z	2		
20XN3	Master Project 3	 Z	1		
20XN4	Master Project 4	<u>Z</u>	8		
20XNDD	Master Thesis for study programme DS	<u>Z</u>	18		
20Y2PR	Prediction of time series	KZ	2		
	rediction of time series series prediction, meaning of prediction, basics of quantitative prediction. Methods for predictive quality evaluation, descriptive statistic		I		
	tion for general formula of loss function. Calculation and programming environment R. Regression models, basics of linear regression				
	regression, statistical tests of linear dependence, selection of input variables.				
20Y2TE	Technology of Electronic Systems	KZ	2		
Principle technolog	gies for an effective operation of electronically controlled systems. Maintaining, meassuring, optimization of safety and reliability of con	nplex systems. Sei	miconductor		
	technologies, printed circuits, assembly operations, interconnection and repairs technologiesusers and operators.				
21XN1	Master Project 1	<u>Z</u>	2		
21XN2	Master Project 2	Z	2		
21XN3	Master Project 3	Z	1		
21XN4	Master Project 4	Z	8		
21XNDD	Master Thesis for study programme DS	Z	18		
21Y2BS	Unmanned aircraft systems 2	KZ	2		
	nmanned aircraft development. Use of unmanned aircraft. Managerial activities related to the operation of unmanned aircraft. Flights be				
21Y2CR	CRM M. Analysis of air accidents. Human factor. Error. Historical development of CRM. Health and fitness. Stress and its effect on the hum	KZ an hody Fatique S	2 leen &amn:		
	Information Processing. Situational Awareness. Workload Management. Decision Making. Communication. Leadership & Decision Making. Communication. Leadership & Decision Making. Communication. Leadership & Decision Making. Communication.	, ,			
21Y2FM	Aviation Company Financial Management	KZ	2		
	orate finance - financial statements, budget, forecast. Financial policy of the company. Financial resources - long-term financial resou				
	earnings, shares, bonds, loans, leasing, capital. Financial and economic analysis of the company - structure and content.				
21Y2LS	Air Traffic Services	KZ	2		
Airspace structure	in Czech Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, APP		story of ATS		
04)/01/0	at USA and Czechoslovakia. ATS - Model of financing. Training Systém of Air Traffic Controllers. Future development of ATS				
21Y2MC	CNS Systems Modelling	KZ	2		
The course is desig	gned as a set of model tasks in the field of communication navigation and surveillance systems in aviation, addressed using mathema tools. A large part is devoted to air targets tracking, measurement-to-track association, track filtering and multisensor tracking		na sonware		
21Y2MK	Marketing of Air Transport	KZ	2		
	course "Marketing in air transport" is the management of activities and processes using available marketing tools and processes for a				
	n of sales of goods and services in the aviation industry. In addition to the theoretical foundations of marketing, the lectures present s		-		
	and product analysis, creation of marketing strategies and planning.				
21Y2MQ	Quality Management	KZ	2		
	nition. Pioneers in the field of quality. International quality organisations and quality promotion in the Czech Republic. Quality manage				
management syste	ms. Integrated management systems. Risk management in the context of the requirements of ISO standards. Sectoral quality manager	nent systems. Con	nprehensive		
24.72.116	quality management, excellence models and corporate social responsibility. Quality audits.	V7	2		
21Y2MS The course is desi	Aerospace Engineering Simulation and Modelling gned as a set of exemplary tasks and problems based on practical aviation issues. The university degree mathematic skills and softw	KZ are applications us	2 sage will be		
	essful figuring out. Both simple tasks, where students create own model themselves (e.g. in Matlab), and more complicated problems	* *	-		
,	tools will be applied.	, , , , , , , , , , , , , , , , , , , ,			
21Y2PL	Operational Aspects of Aerodromes	KZ	2		
Operational aspec	cts of aerodromes. Location of aerodrome and orientation of runways. Requirements for apron. Capacity of airports runways and term	inals. Operation u	nder winter		
	conditions. Firefighting units. Protection against unlawful interference. Local transport connection. Environmental protection				

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 organis		1
•	n of state administration and state supervision in matters of civil aviation, in accordance with Act No. 49/1997 Col. Facilitation. Resp	•	
	passengers, luggage and cargo. The safe transport of dangerous goods.		
21Y2S1	Diploma Thesis Seminar 1	KZ	2
ypes of final theses	(review, applied research, basic research, work dealing with design proposals). Working with citation sources (citation databases, current state (writing standards). Definition of the limitations of the current state. Introduction to the methodology of writing final t		nalysis of the
241/202			
21Y2S2	Diploma Thesis Seminar 2 and final theses. Definition of materials and methods, approach to obtaining results, presentation and discussion of results, formulation	KZ	2
•,	sic statistics, validation of results and proposals. Achieving the objectives of the paper and evaluation of hypotheses tests. Formal a		
ia presentation, ba	- working with LaTeX and Word template.	na grapino acsigi	i oi tiio pape
22AMMD	Measuring Methods Applied to Transportation	KZ	4
<b>I</b>	nd technical processing of traffic route with geodetic total station, GPS and photogrammetry, 3D scanning. Transport corridor setting		
	cal processing of several vehicle dynamic characteristics using high-speed cameras and accelerometers. It is a week course and th		
	and September - usually in examination period.		•
22MSV	Modelling and Vehicle Movement Simulation	KZ	2
rinciples and posibil	lities of simulation tools with regards to vehicle movement analysis and vehicle crash analysis. Kinematic and dynamic modelling of vel	nicle/set of vehicle	s movemen
	View conditions. Proposed road space passage. Processing of road 3D models.		
22XN1	Master Project 1	Z	2
22XN2	Master Project 2	Z	2
22XN3	Master Project 3	Z	1
22XN4	Master Project 4	Z	8
22XNDD	Master Thesis for study programme DS	Z	18
22Y2PS	Traffic Accidents Computer Simulation and Analysis	KZ	2
_	imulation, multi body systems and vehicle active safety systems, vehicle slipping, external influence on virtual model, crash tests ev	l .	_
vornoio dynamico di	vehicle passangers, pedestrian, traffic accident simulation and analysis.	araation, origio t	dok vornoio
23XN1	Master Project 1	Z	2
23XN2	Master Project 2	Z	2
23XN3	Master Project 3	Z	1
23XN4	Master Project 4	Z	8
23XNDD	•	Z	18
	Master Thesis for study programme DS		
23Y2BP	Security Class	KZ	2
rne most prevalen	t topics include data management, data and text mining applications, terrorism informatics, deception and intent detection, terrorist analysis, crime analysis, cyber-infrastructure protection, transportation infrastructure security, and information assurance, among		iai network
23Y2FB		KZ	2
-	Physics for Security Branches ics of substances and phenomena at extreme conditions. Grounds of rheology. Physics of Earth's interior. Geophysics. Physics of a		1
Grounds of physi	dengineering branches directed to safety.	ипоэрпете. Арри	oations in
23Y2MA	Risk Analysis and Management	KZ	2
	I terms. Risk sources, definition of hazard, impacts and risks. Methods for identification, analysis, assessment and management of		1
	ing practice. Methods, tools and techniques for risk engineering. System of systems risk. Application of strategic and system approx	_	
	development. Territorial, emergency and crisis planning. Human factor - its role.		
23Y2PD	Practical vehicle dynamics	KZ	2
Theory of vehicle dy	namics. Multibody vehicle modeling. Modeling with IPG CarMaker. Standard and development stage experiments with road vehicle	s. Realization of	experimenta
	measurements with passenger vehicles. Experiment evaluation.		
23Y2TP	Creation of legal and technical regulations	KZ	2
Creation of legisla	ation, 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.	1	
23Y2VR	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, ensuring	,	
23Y2VZ	Leadership and Human Resource Development	KZ	2
	tudy of human resources, human resources management, corporate goals, strategies, cultural and ethical aspects. Team management		ion in teams
	strategy and planning in human resources, ethics and corporate culture, cross-cultural differences. The labor code. Introduction into	-	T -
23Y2ZM	Intelligence Means and Methods	KZ	2
	ent of intelligence services and their role in the modern world. How intelligence services handle with information. Methods and procedu	_	
iormation. Means o	of intelligence services. Internal and external intelligence, military intelligence. The means and methods of state security services. C	ooperation amon	y intelligenc
	services within NATO, EU. The organization of the intelligence services.		

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