## Study plan

## Name of study plan: navaz. mag. PRE program DS 20/21 (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

Musilová.

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:

Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their Code Completion Credits Scope Semester Role members) Tutors, authors and guarantors (gar.) **Rail Transport Infrastructure** 12**I**KD 2P+2C Z.ZK 5 7 7 Lukáš Týfa, Önd ej Trešl **Highway Engineering Materials** 12TKVP 4 Ζ Z.ZK 2P+2C 7 Otakar Vacín **Geomechanics and Foundation Engineering** 18GAZ Z.ZK 3 2P+1C Ζ 7 erná Vvdrová (Gar.) Jitka ezní ková, Linda erná Vydrová Linda **Theory of Engineering Structures** 18TIK 2P+1C Ζ Z,ZK 4 Ζ Petr Koudelka, Petr Zlámal, Ond ej Jiroušek Geographical Information Systems 14GISS ΚZ 2 0P+2C+8B Ζ František Kekula, Tomáš Janata, Zuzana Purkrábková Tomáš Janata Tomáš z Janata (Gar.) **Modelling and Vehicle Movement Simulation** 22MSV 2 K7 0P+2C 7 Ζ Michal Frydrýn, Drahomír Schmidt Drahomír Schmidt (Gar.) Language - English 1 Barbora Horá ková, Jitka He manová, Dana Boušová, Lenka Monková, Peter Morpuss, Markéta Vojanová, Marie Michlová, Marek Tome ek, Markéta 15J2A1 Ζ Ζ 2 0P+2C+10B Ζ

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

12IKD	Rail Iransport Infrastructure	Z,ZK	5				
Non-compensated latera	al acceleration, parameters eduction for transition curve and cant transition, curves without straight, track spacing change. Track	detailed constructi	on. Substructure				
design, slab track. Tram	-train. Interoperability. Noise precautions. Railway line modernization for non-tilting and tilting trains.						
12TKVP	Highway Engineering Materials	Z,ZK	4				
The theory of road cons	The theory of road construction - Material Aspects. The course emphasizes the development of road construction from the beginning of the 20th century to the present, focusing on						
materials, understanding the production and placing of asphalt mixtures.							
18GAZ	Geomechanics and Foundation Engineering	Z,ZK	3				
Geology (basics of pert	ographyand stratigraphy), mechanics of soils (classification of fundamental soils, mechanic properties of fundamental soils,	permeability), plai	nar foundations				
(footings, footers, plates	, depth of founding), determination of planar foundations bearing and deformation, depth foundations – classification of depth	n foundations eler	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	tical 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 acquainted	d with methods of	modeling the				
behavior of subsoil used in the design of line structures.							
14GISS	Geographical Information Systems	KZ	2				
Construction of saving f	ormat of space-oriented information land-survey and cartography minimum basic tasks of spatial operations principles of ter	ritorial identificatio	'n				

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

### Code of the group: 1.S.NPDS VÝB 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, Vít Janoš Vít Janoš (Gar.)	Z,ZK	4	2P+2C	Z	Z

# Characteristics of the courses of this group of Study Plan: Code=1.S.NPDS VYB 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 traffic models as well as their calibration. Applying new trends in traffic planning with the aim on Smart cities solutions.					
17TZND	Technology of Railway Transport	Z,ZK	4		
Track line capacity asse	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 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:

Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their Code Scope Semester Completion Credits Role members) Tutors, authors and guarantors (gar.) **Design and Maintenance of Transportation Structures** 12NAPI Z.ZK 2P+2C L 4 7 Otakar Vacín Sustainable Mobility and Land - Use Planning 12UMUP Z,ZK 5 2P+2C L Ζ Dagmar Ko árková, Václav Novotný Dagmar Ko árková (Gar., **Railway Stations and Centres** 12ZSUZ Z,ZK 3 2P+1C L Ζ Ond ej Trešl, Martin Jacura, Tomáš Javo ík **Principles of Vehicle Design** 16PDP ΖK 2 2P+0C+8B L 7 Jaroslav Machan, David Lehet Jaroslav Machan (Gar.) **Measuring Methods Applied to Transportation** 22AMMD ΚZ L Michal Frydrýn, Drahomír Schmidt, Tomáš Mi unek, Luboš Nouzovský, Zden k 4 1P+3C Ζ Svatý Tomáš Mi unek (Gar.) Language - English 2 Barbora Horá ková, Jitka He manová, Dana Boušová, Lenka Monková, Peter Morpuss, Markéta Vojanová, Marie Michlová, Marek Tome ek, Markéta 15JBA2 Ζ 2 0P+2C+10B L Ζ Musilová.

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

12NAPI	Design and Maintenance of Transportation Structures	Z,ZK	4				
Design and construction	n of cement-concrete pavements and their maintenance. Construction of bridge objects, examples and choice of bridge const	truction materials	. Construction				
and operation of tunnels	3.						
12UMUP	Sustainable Mobility and Land - Use Planning	Z,ZK	5				
Spatial planning - objectives and tasks, development over time. Land-use planning tools. SUMP Territorial and transport planning context. Ways of urban growth in connection with							
transport. Basic principl	transport. Basic principles of the transport solution. The impact of transport on the size and shape of the city, on the development of the street and the square and the roads. Solutions						
for pedestrian and bicyc	le transport. Suburbanization and transport. City economics.						
12ZSUZ	Railway Stations and Centres	Z,ZK	3				
Equipment for passenge	er transport. Platform construction. Access roads to platforms. Modification of railway stations according to the TSI PRM. Stati	on heads design.	Variant solutions				
of station heads for curr	ent ride. Junction stations. Crossing stations. Passenger stations. Moving stations. Public transport terminals.						
16PDP	Principles of Vehicle Design	ZK	2				
Design of transportation	Design of transportation vehicle according to its usage and function. Marketing and user demands. Vehicle dynamics. Propulsion systems. Design process, functional design and						
vehicle structure. Evalua	ehicle structure. Evaluation of variant concepts. Design phases. Realiability, technological aspects etc.						

22AMMD	Measuring Methods Applied to Transportation	KZ	4		
Geodetic location and	Geodetic location and technical processing of traffic route with geodetic total station, GPS and photogrammetry, 3D scanning. Transport corridor setting out using geodetic methods.				
Detection and technic	Detection and technical processing of several vehicle dynamic characteristics using high-speed cameras and accelerometers. It is a week course and the terms are usually set in June				
and September - usua	and September - usually in examination period.				
15JBA2	Language - English 2	Z	2		
Presentation Skills - e	Presentation 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 applications of safety assessments (especially Road Safety Audit, Road Safety Inspection) during the process of preparations, and of the particular realization of the road						
network that should min	network that should minimize traffic accident risks for all those who take part in road traffic. Application of European Directive 2008/96/EC on road safety infrastructure management.					
18TEAM	Theoretical and Applied Mechanics	Z,ZK	4			
Fundamentals of theory of plasticity. Plasticity conditions. Elastoplastic and plastic states of cross-sections and beams. Reliability and durability of structures. The stress and strain						
state around a notch. Stress intensity factor. Fracture toughness. Energy methods of linear fracture mechanics. Crack driving force.						

#### Code of the group: 3.S.NPDS 21/22 Name of the group: 3.sem.nav.prez (od) 21/22 - program DS 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 <b>Pavla Pecherková</b> 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	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

11STS	Stochastic Systems	Z,ZK	4				
The subject deals with t	he problems of mathematical modelling of dynamical systems, estimation od these models and their utilization for prediction.	The results are il	lustrated on				
practical transportation tasks. Mathematical theory roots from probability and mathematical statistics and they use the methods of the Bayesian probabilistic approach.							
12DAZP	12DAZP Transport and Environment Z,ZK 4						
This course aims the im	pact of transport on environment. The accent is put mainly on noise and vibration, emission, barrier effect and energy deman	ds. The noise mea	asury is part and				
parcel of this course.							
12TEAP	Theory of Road Traffic Operation	Z,ZK	7				
Traffic parameters and their measurement, acquisition and processing. Road capacity analysis. Theoretical foundations and applications of mathematical models - macroscopic,							
statistical and microsco	pic traffic models. Theory of traffic management. Traffic light signals, roundabouts, coordination, public transport priority. Urba	an and highway m	anagement.				
Traffic excesses manag	ement. Road assessment and maintenance methods. Health risks assessment.						

12VRZ	High Speed Rail Transport	KZ	3				
High speed railway (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.	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 constru	ction and layout track parameteres.						
15JBA3	Language - English 3	Z	2				
Presentation Skills - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work engagement. Optional courses for certificates							
FCE, CAE,							

### Code of the group: 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:

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

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

### Code of the group: 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 - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work engagement. Optional courses for certificates FCE, CAE.

### Code of the group: 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:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11XNDD	Master Thesis for study programme DS	Z	18	0P+20C	L	Z

12XNDD	Master Thesis for study programme DS Lukáš Týfa, Ond ej Trešl, Gabriela Sidorinová, Dagmar Ko árková, 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:

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	B 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	8 Z	ZP
14XN1	Master Project 1	Z	2	0P+2C+4E	B Z	ZP
15XN1	Master Project 1	Z	2	0P+2C+4E	Z	ZP
16XN1	Master Project 1 P emysl Toman	Z	2	0P+2C+4E	B 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	8 Z	ZP
18XN1	Master Project 1 Václav Rada, Nela Kr má ová	Z	2	0P+2C+4E	s Z	ZP
20XN1	Master Project 1 Ji í R ži ka	Z	2	0P+2C+4E	8 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	8 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 P emysl 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, P emysl 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 Frydrýn, Luboš Nouzovský, Zden k Svatý, Karel Kocián	Z	8	0P+4C	L	ZP
23XN4	Master Project 4	Z	8	0P+4C	L	ZP

Characteristics of the courses of this group of Study Plan: Code=XN DS 1-4 20/21 Name=Projekty nav.prez.1.-4.sem (od) 20/21 programu DS

Master Project 1	Z	2
Master Project 1	Z	2
Master Project 1	Z	2
	Master Project 1	Master Project 1 Z

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 20/21 Name of the group: PVP nav.prez. program DS 20/21 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
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
16Y2EE	Emissions and Ergonomics of Vehicles	KZ	2	2P+0C	L	PV
17Y2FM	Financing in Urban Mass Transportation	KZ	2	2P+0C	Z	PV
11Y2FX	Functions of Complex Variable	KZ	2	2P+0C	Z	PV
23Y2FB	Physics for Security Branches	KZ	2	2P+0C	Z	PV
18Y2FZ	Physical foundation of materials' properties 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	KZ	2	2P+0C	Z	PV
14Y2KI	Capital Investment in Transportation and Telecommunications	KZ	2	2P+0C	L	PV
16Y2KV	Car Body Design	KZ	2	2P+0C	L	PV
12Y2KS	Rail Transport in Settlements and Regions	KZ	2	2P+0C	Z	PV
12Y2KE	Landscape Ecology 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
15Y2MS	Sociology for Managers Martina Šmidochová	KZ	2	2P+0C	Z	PV
12Y2MH	Measurement and Modeling of Traffic Noise	KZ	2	2P+0C	L	PV
12Y2MI	Urban Engineering	KZ	2	2P+0C	L	PV
18Y2MP	Finite Element Method And Its Application	KZ	2	2P+0C	L	PV
16Y2MK	Quality Methods for Vehicles	KZ	2	2P+0C	L	PV
12Y2MD	Methods of Traffic Regulation and Prediction	KZ	2	2P+0C	L	PV
17Y2MO	International Organisations in Transportation	KZ	2	2P+0C	L	PV
17Y2MS	Microsimulation of Railway Operation	KZ	2	2P+0C	Z	PV
21Y2MS	Zden k Michl Aerospace Engineering Simulation and Modelling	KZ	2	2P+0C	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	KZ	2	2P+0C	L	PV
14Y2OP	Dagmar Ko árková, Miroslav Veliš Object Oriented Programming in Transport	KZ	2	2P+0C	L	PV
15Y2OZ	Health Protection in Transportation and EU Eva Rezlerová, Petr Musil	KZ	2	2P+0C	Z	PV
15Y2OF	Specialised French for Transportation and Telecommunications	KZ	2	2P+0C	Z	PV
18Y2OB	Optical Contactless Strain Measurements	KZ	2	2P+0C	L	PV
16Y2PG	Petr Zlámal Computer Graphics and Virtual Reality	KZ	2	2P+0C	Z	PV
22Y2PS	Petr Bouchner, Stanislav Novotný 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
23Y2PD	Practical vehicle dynamics	KZ	2	2P+0C	L	PV
15Y2PD	Practical Spanish for Transportation	KZ	2	2P+0C	Z	PV
21Y2PP	Law and Operation in Air Transport	KZ	2	2P+0C+8B	L	PV

20Y2PR	Prediction of time series	KZ	2	2P+0C	L	PV
14Y2PI	Process Information Systems in Transportation	KZ	2	2P+0C	Z	PV
14Y2PJ	C++ Programming Language	KZ	2	2P+0C	L	PV
14Y2PH	CAD Interface Programming	KZ	2	2P+0C	L	PV
11Y2PM	Programming in MATLAB Šárka Vorá ová	KZ	2	2P+0C	L	PV
21Y2PL	Operational Aspects of Aerodromes	KZ	2	2P+0C	Z	PV
17Y2PS	Case Studies in Transportation	KZ	2	2P+0C	Z	PV
15Y2PU	Publications and Their Creation	KZ	2	2P+0C	Z	PV
12Y2RD	Realization of Transport Buildings           Dagmar Ko árková, Martin Höfler, Tomáš Honc	KZ	2	2P+0C	L	PV
17Y2RZ	Control of Transport Processes	KZ	2	2P+0C	Z	PV
21Y2S1	Diploma Thesis Seminar 1	KZ	2	2P+0C		PV
21Y2S2	Diploma Thesis Seminar 1	KZ	2	2P+0C	 Z	PV
15Y2SP	Seminar on Political Philosophy	KZ	2	2P+0C	 Z	PV
	Network Timetabling on the Railway					
17Y2SJ	Vít Janoš Vít Janoš (Gar.)	KZ	2	2P+0C	L	PV
16Y2ST	Special Technologies in Transport and Telecommunications	KZ	2	2P+0C	L	PV
16Y2SV	Special technologies in vehicle manufacturing	KZ	2	2P+0C	L	PV
18Y2SD	Reliability and Diagnostics, Experimental Methods	KZ	2	2P+0C	Z	PV
15Y2SR	Stylistics and Rhetorics	KZ	2	2P+0C	Z	PV
17Y2SK	Urban and Regional Rail Transport System	KZ	2	2P+0C	L	PV
15Y2TS	Technician and Contemporary Society Jan Feit, Eva Rezlerová	KZ	2	2P+0C	L	PV
20Y2TE	Technology of Electronic Systems	KZ	2	2P+0C	Z	PV
14Y2TU	Telecommunications Systems and Multimedia	KZ	2	2P+0C	Z	PV
16Y2TT	Transportation and Building Technology and Equipment	KZ	2	2P+0C	Z	PV
23Y2TP	Creation of legal and technical regulations	KZ	2	2P+0C	L	PV
12Y2UD	Sustainable Transportation	KZ	2	2P+0C	L	PV
14Y2UI	Artificial Intelligence	KZ	2	2P+0C+8B	Z,L	PV
20Y2UA	Artificial Neural Networks, Realization and Applications	KZ	2	2P+0C	Z	PV
18Y2UB	Accident Biomechanics and Safety	KZ	2	2P+0C	 L	PV
23Y2VZ	Leadership and Human Resource Development	KZ	2	2P+0C		PV
18Y2VC	Computational Mechanics in Transportation	KZ	2	2P+0C		
	Radek Kolman Cope with Risks in Engineering Branches			-	L	PV
23Y2VR	Danuše Procházková	KZ	2	2P+0C		PV
12Y2VT	High Speed Railways	KZ	2	2P+0C	Z	PV
12Y2ZK	Traffic Calming Zuzana arská	KZ	2	2P+0C	Z	PV
23Y2ZM	Intelligence Means and Methods Miloslav Ku era	KZ	2	2P+0C	Z	PV
Characteristics of t	the courses of this group of Study Plan: Code=Y2-NPDS 20/21 Na	ame=PVP nav	/.prez. p	rogram D	5 20/21	
17Y2AM	Application of Marketing Tools in Transportation			-	۲Z	2
	principles in transport issues, marketing tools suitable for transport, case studies of the us	se of marketing in	the sphere		-	-
Classification of road acc	Safety on The Local Roads idents rates, social looses. Collision points, diagrams. Tools and methods for safer road tran		roads from		<z │<br="">ew of safety.</z>	2 Psychological
	<ul> <li>Pedestrian transport, cyclists. Traffic lights coordination. Transport control and regulation Security Class</li> </ul>	n.		1	٨Z	2
The most prevalent topic	s include data management, data and text mining applications, terrorism informatics, dece	-		1		
	cyber-infrastructure protection, transportation infrastructure security, and information asso Unmanned aircraft systems 2	urance, among ot	ners.	1	٨Z	2
	ned aircraft development. Use of unmanned aircraft. Managerial activities related to the ope	ration of unmanne	ed aircraft.			_
	CATIA I				<z< td=""><td>2</td></z<>	2
	with CATIA, making basic parts and bodies. Making 2D sketches, geometric stucture, para	ametric linking, ma	aking adap	tive models fro	om 2D skete	ches. Import
	s and bodies. Making assemble and visualization.				٨Z	2
				· · ·	1	
14Y2C2	CATIA II e. Modeling compound bodies. Possibility of enumeration, comunications with other system	ms. Surface x soli	d bodies. k	Kinematic mec	hanism. Pro	ject making
14Y2C2 Attension of basic course and project cooperation.	e. Modeling compound bodies. Possibility of enumeration, comunications with other system Outputs of projects.	ms. Surface x soli	d bodies. ł			
14Y2C2 Extension of basic course and project cooperation. 14Y2CS	e. Modeling compound bodies. Possibility of enumeration, comunications with other system				<z td=""  <=""><td>2</td></z>	2

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	I I	
of transport. Examples of sustainable transport. Biofuels. Electromobility. New trends in transport. Practical examples.		·
15Y2DN Transportation Psychology in German Speaking Countries	KZ	2
Introduction into broader view of traffic problems with regard to the work with texts (Physics for drivers, abusing alcohol during driving, exha	1 1	_
in traffic, traffic accident, traffic psychology in the internet etc.)		,
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 dynar		
Vibration of systems with a finite number of degrees of freedom. Methods of stiffness constants and pliability constants. Fundamentals of vibr		
of oscillation. Experimental methods in dynamics.		, <b>,</b>
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		
physical values, ways of measuring, prevention, elimination. Exhausts - creation, measurement, reduction, non-regular fuels and drives. Ergo		
reach. Condition - heating, ventilation, air-conditioning, filtration, tiredom.		
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. U	I I	
UMT types. UMT development in small towns. Particularities of investment and operation financing of individual UMT types. Historic and pro-		-
inspection and blind passengers. Tourism & UMT. UMT typology & choice of optimum financing.		
11Y2FX Functions of Complex Variable	KZ	2
Derivation of complex function, holomorphic function, complex exponential series, integration, Cauchy theorem. Taylor series, Laurent series	I I	_
Laplace and Z-transformation.		ION. DASICS OF
	1/7	0
23Y2FB Physics for Security Branches	KZ	. 2
Grounds of physics of substances and phenomena at extreme conditions. Grounds of rheology. Physics of Earth's interior. Geophysics. Physics of Earth's interior.	ysics of atmosphere. Applic	ations in
dengineering branches directed to safety.		
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	s of environment and loadin	ig 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, accelera	ation of road transport devel	lopment during
1st part of 20th century. Development of road layout, geometric and construction layers. Beginning of modern road civil engineering. Develo	opment of road travelling in	modern period.
History of road intercections, bridges and traffic control, development of road signs.		
16Y2HP Vehicle Hygiene	KZ	2
Emissions and ergonomy of vehicles and the influence on man and nature. National and international law related to the hygiene. Noise and	vibrations - sources, creati	on, propagation,
physical values, ways of measuring, prevention, elimination. Exhausts - creation, measurement, reduction, non-regular fuels and drives. Ergo	nomy - sitting, standing, cor	ntrol, operational
reach. Condition - heating, ventilation, air-conditioning, filtration, tiredom.		
14Y2IS Intelligent Systems in Postal Services	KZ	2
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 pr	rocessing of mail processing	_
The use of information systems in the postal services (ITIS, and POST, T + T, PS, KMP, DS), application of information technology in the pr	ocessing of mail processing	g nodes in the
	ocessing of mail processing	g nodes in the
The use of information systems in the postal services (ITIS, and POST, T + T, PS, KMP, DS), application of information technology in the prostal network, optimizing logistics processes in the post. The appreciation of the real implementation of the Czech post in operation both in leask.	ocessing of mail processin	g nodes in the k of the practical
The use of information systems in the postal services (ITIS, and POST, T + T, PS, KMP, DS), application of information technology in the prostal network, optimizing logistics processes in the post. The appreciation of the real implementation of the Czech post in operation both in leask.         12Y2IS       Urban Networks	rocessing of mail processin ectures and in the framewor KZ	g nodes in the k of the practical
The use of information systems in the postal services (ITIS, and POST, T + T, PS, KMP, DS), application of information technology in the prostal network, optimizing logistics processes in the post. The appreciation of the real implementation of the Czech post in operation both in leask.         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	rocessing of mail processin ectures and in the framewor KZ	g nodes in the k of the practical
The use of information systems in the postal services (ITIS, and POST, T + T, PS, KMP, DS), application of information technology in the prostal network, optimizing logistics processes in the post. The appreciation of the real implementation of the Czech post in operation both in leask.           12Y2IS         Urban Networks           The importance and the position of UN as public and technical infrastructure / utilities, metodology of the UN master planning, of UN desig operation (basic technical standards of UN, trenchless technologies for UN).	rocessing of mail processin ectures and in the framewor KZ In, UN coordination, UN ins	g nodes in the k of the practical 2 tallation and UN
The use of information systems in the postal services (ITIS, and POST, T + T, PS, KMP, DS), application of information technology in the prostal network, optimizing logistics processes in the post. The appreciation of the real implementation of the Czech post in operation both in ledesk.         12Y2IS       Urban Networks         The importance and the position of UN as public and technical infrastructure / utillities, metodology of the UN master planning, of UN desig operation (basic technical standards of UN, trenchless technologies for UN).         14Y2JM       One-Chip Controllers	rocessing of mail processing ectures and in the framewor KZ In, UN coordination, UN ins KZ	g nodes in the k of the practical 2 tallation and UN 2
The use of information systems in the postal services (ITIS, and POST, T + T, PS, KMP, DS), application of information technology in the prostal network, optimizing logistics processes in the post. The appreciation of the real implementation of the Czech post in operation both in ledesk.         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 operation (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 program	ocessing of mail processing ectures and in the framewor KZ In, UN coordination, UN ins KZ ammed with the aid of AVR	g nodes in the k of the practical 2 tallation and UN 2 chips.
The use of information systems in the postal services (ITIS, and POST, T + T, PS, KMP, DS), application of information technology in the prostal network, optimizing logistics processes in the post. The appreciation of the real implementation of the Czech post in operation both in ledesk.         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 operation (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 progration in the formation in English	rocessing of mail processing ectures and in the framewor KZ In, UN coordination, UN ins KZ ammed with the aid of AVR	g nodes in the k of the practical 2 tallation and UN 2 chips. 2
The use of information systems in the postal services (ITIS, and POST, T + T, PS, KMP, DS), application of information technology in the prostal network, optimizing logistics processes in the post. The appreciation of the real implementation of the Czech post in operation both in ledesk.         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 operation (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 progration appreciation in English. The interview process is mapped out, with the course including skills	rocessing of mail processing ectures and in the framewor KZ In, UN coordination, UN ins KZ ammed with the aid of AVR KZ practise for all the stages of	g nodes in the k of the practical 2 tallation and UN 2 chips. 2
The use of information systems in the postal services (ITIS, and POST, T + T, PS, KMP, DS), application of information technology in the prostal network, optimizing logistics processes in the post. The appreciation of the real implementation of the Czech post in operation both in ledesk.         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 operation (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 progration (basic technical guide to applying for a job in English. The interview process is mapped out, with the course including skills including specifics for job-hunting in English. Students will also be introduced to the English vocabulary and phraseology necessary for a students will also be introduced to the English vocabulary and phraseology necessary for a students will also be introduced to the English vocabulary and phraseology necessary for a students.	Cocessing of mail processing ectures and in the framewor KZ In, UN coordination, UN ins KZ ammed with the aid of AVR KZ practise for all the stages c uccessful interview.	g nodes in the k of the practical 2 tallation and UN 2 chips. 2 of this process,
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The use of information systems in the postal services (ITIS, and POST, T + T, PS, KMP, DS), application of information technology in the prostal network, optimizing logistics processes in the post. The appreciation of the real implementation of the Czech post in operation both in ledesk.         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 operation (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 progration specifics for 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 skills including specifics for job-hunting in English. Students will also be introduced to the English vocabulary and phraseology necessary for a set 14Y2KI         Capital Investment in Transportation and Telecommunications         Financial market, investment desicion making - long term goals and investment strategies, long term financing	rocessing of mail processing ectures and in the framewor KZ In, UN coordination, UN ins KZ ammed with the aid of AVR KZ practise for all the stages of uccessful interview.	g nodes in the k of the practical 2 tallation and UN 2 chips. 2 of this process, 2
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12Y2MH	Measurement and Modeling of Traffic Noise	KZ	2
Theoretical introduction	to noise from traffic. Noise from rail transport. Noise from road traffic. Measurement and calculation of noise from rail traffic.	Measurement and	calculation of
noise from road traffic.	Modelling of traffic noise in the CADNA A.		
12Y2MI	Urban Engineering	KZ	2
	ties storage in area, coordination engineering activities in area, arrangement of public space, concepement of public spaces.		
18Y2MP	Finite Element Method And Its Application	KZ	2
	nulation of the Finite Element Method. Direct Stiffness Method used in structural mechanics. Evaluation of stiffness matrices		÷
	lement formulation (bar and beam elements, CST, LST, quadrilateral, tetrahedral and brick elements). Natural coordinates, na	atural shape functi	ons and
	tation. Numerical integration. Introduction to dynamics. FEM programming.	1/7	
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). Eler	ments of parallel
(team) design.	Methods of Traffic Regulation and Prediction	<b>V</b> 7	2
12Y2MD	Methods of Traffic Regulation and Prediction gnosis, traffic prognosis for large area (calculation of future traffic volumes, calculation of future traffic volumes between areas (	KZ	2 athetic methods
	bution to road network). Shock wave in traffic flow. Service levels and their traffic volumes. Acceleration noise.	analogical and syl	inelic methods,
17Y2MO	International Organisations in Transportation	KZ	2
	n transport, UN, EEC UN, Intergovernmental organisations, EU Offices and Agencies, Conference of European Ministries of t	I I	
	transport, Air-Rail, railways, roads, air, waterways, forwarding and postal services.	internat	
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	I I	
	ructure model and modification to the infrastructure to allow the implementation of the proposed operational concept. Stability		
	rational concept to delays.		
21Y2MS	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	I I	_
-	Ifiguring out. Both simple tasks, where students create own model themselves (e.g. in Matlab), and more complicated proble		-
tools will be applied.			
17Y2MT	Modern History for Engineering Students	KZ	2
	the 19. century history. Geopolitical situation in Europe explained on the examples of Great Britain, Germany and Austrian E		-
	nsatlantic transportation development. Imperial China: Late Qing dynasty. Selected chapters from the 20. century history: Fror	•	
Czechoslovak historica			
12Y2MZ	Modernization of Railway Lines and Stations	KZ	2
	AGC and AGTC Agreement. AGC and AGTC railway network. Principles of modernization (conceptual papers, definitions of bas	I I	_
	acteristics on modernized railway lines. Superstructure and substructure on upgraded lines. Designing of railway stations. Brid	-	
and realization of proje	cts. Technical description of the tranzit corridors.		
14Y2OP	Object Oriented Programming in Transport	KZ	2
Class, object, encapsul	ation, inheritance, polymorphism, templates, retyping, stream, exceptions, repository, collections, virtual methods and classes	s. Problem cases	wil be chosen
from microscopic simul	ation system, discrete event simulation, celular automata simulation and virtual life area.		
15Y2OZ	Health Protection in Transportation and EU	KZ	2
Health protection in trai	hsportation in CR in the past and present. Conditions before 1989 and after, current legislature, future prospects. Harmonisati	ion of legislation v	vith other EU
members. Fundamenta	I principles of health protection and support in selected EU countries.		
15Y2OF	Specialised French for Transportation and Telecommunications	KZ	2
Basic transportation (p	blic transport, railway, air, road and ship transport) and telecommunications terminology. Special focus on independent speal	king and writing s	kills.
18Y2OB	Optical Contactless Strain Measurements	KZ	2
	will get theoretical knowledge and practical experience in optical strain measurement methods. Students will get experience v		
DSLRs and high speed	cameras for acquisition of suitable image data and with digital image correlation algorithms for displacements measurements	s and strain fields	calculation.
16Y2PG	Computer Graphics and Virtual Reality	KZ	2
Principles of creation ar	d processing of bitmap and vector 2D graphics, 3D virtual scenes and algorithms used for their computerized processing. Adop	ting skills of work	with professional
and freeware tools for o	reation and processing of 2D, 3D and interactive graphics, and basics of programming language VRML and graphic libraries	(OpenGL).	
22Y2PS	Traffic Accidents Computer Simulation and Analysis	KZ	2
Vehicle dynamics simu	ation, multi body systems and vehicle active safety systems, vehicle slipping, external influence on virtual model, crash tests	evaluation, single	-track vehicle,
vehicle passangers, pe	destrian, traffic accident simulation and analysis.		
15Y2PT	Food in Transportation	KZ	2
The nutrition policy. Inte	raction transportation and foodstuffs. The health risks. Hygienic safeguard. The practical examples from the Czech Republic	and from the world	d. The issues of
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	cles. Realization c	of experimental
	ssenger vehicles. Experiment evaluation.		
15Y2PD	Practical Spanish for Transportation	KZ	2
	inication skills, training of correct written expression of formal character, basic technical vocabulary, cultural specifics of the S	panish speaking o	countries.
Terminology of transpo	t and commerce.		
21Y2PP	Law and Operation in Air Transport	KZ	2
	h law. International conventions on civil aviation. International organisations and including of the Czech Republic in these organisations	-	
	tate administration and state supervision in matters of civil aviation, in accordance with Act No. 49/1997 Col. Facilitation. Resp	ponsibilities of air	carriers for
	nd 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 sta		
	r general formula of loss function. Calculation and programming environment R. Regression models, basics of linear regressi	on, simple regress	sion. Multiple
	sts of linear dependence, selection of input variables.		
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		-
SUA (Service Uriented	Architecture). Inforamtion systems implementation and operations description in the Czech Republic (technical and process)	included lectures	and visits.

14Y2PJ C++	Programming Language	KZ	2
	C++ programming language. Class, object, constructor, destructor, inheritance, abstract class, virtual methods, exceptio	ns, streams, meth	nod and operator
overloading, abstract data type			_
	Interface Programming	KZ	2
	rogramming techniques with the help of LIST and VBA programming languages. Possibilities of proper objects (comm	iands), dialogues,	, interfaces, and
	stems. Programming of cooperation with other applications (databases, spread-sheets).	KZ	2
· · · = · · · · · · · · · · · · · · ·	ramming in MATLAB elling and simulation, description of Matlab environment and its settings, optimization and program code debugging, d	1	
Matlab.		ata inting and det	
	rational Aspects of Aerodromes	KZ	2
	mes. Location of aerodrome and orientation of runways. Requirements for apron. Capacity of airports runways and te		
	rotection against unlawful interference. Local transport connection. Environmental protection.	•	
17Y2PS Case	e Studies in Transportation	KZ	2
Simulation expert discussions of	on the topics - the impact of transport on the environment and the economy, energy, construction of transport infrastru	cture etc. The stu	idents will each
	and the real issue, which solutions will have to think of each other. Each of them will be represent another role (public a	authorities, invest	ors, carrier
representative interest groups,			
	ications and Their Creation	KZ	2
	s and references. Exploration of facts. Quotations. Formal document layout. Working with information databases. Typog Practical creation of simple scientific documents.	graphic principles	. Iypographic
		KZ	2
	ization of Transport Buildings ect Documentation Types. Building Code. Land Permission and Building Permission Process. Building Process. Project	1	
	rol of Transport Processes	KZ	2
	stem, decomposition, factors influencing control, quality diagnosis, methods of control, systems for decision making s	1	
telematics.	,		3,
21Y2S1 Diplo	oma Thesis Seminar 1	KZ	2
Types of final theses (review, a	pplied research, basic research, work dealing with design proposals). Working with citation sources (citation database	s, citation styles).	Analysis of the
current state (writing standards	). Definition of the limitations of the current state. Introduction to the methodology of writing final theses.		
21Y2S2 Diplo	oma Thesis Seminar 2	KZ	2
	ses. Definition of materials and methods, approach to obtaining results, presentation and discussion of results, formulat		
- working with LaTeX and Word	cs, validation of results and proposals. Achieving the objectives of the paper and evaluation of hypotheses tests. Format I template	al and graphic des	sign of the paper
	inar on Political Philosophy	KZ	2
	tts, view of society, state and their system of government.	Γ\ <u>∠</u>	2
	vork Timetabling on the Railway	KZ	2
	llocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds ar		
	ain-diagramm creating. Timetables for more service-levels on the line. Construction slot conflicts between passenger-		-
relations and waiting times, tim	etables for lines under construction.		
16Y2ST Spec	cial Technologies in Transport and Telecommunications	KZ	2
-	ologies, electric arc and its applications, plasma technologies, dipping, beam technologies, electron beams technology	in roduction and	mending of
	plogies, soldering, gluing, ultrasound, diffusion, friction and explosion technologies, micro stoves, gas.		-
	cial technologies in vehicle manufacturing	KZ	2 manding of
	plogies, electric arc and its applications, plasma technologies, dipping, beam technologies, electron beams technology plogies, soldering, gluing, ultrasound, diffusion, friction and explosion technologies, micro stoves, gas.	in roduction and	mending of
	ability and Diagnostics, Experimental Methods	KZ	2
	etical background and practical experience in the field of reliability of constructions, implementation of diagnostic proce		
	sidual life of structures. For this purpose, non-destructive methods of experimental mechanics (e. g. strain-gauge meas		
optical methods, including elec	tron microscopy, will be used.		
15Y2SR Stylis	stics and Rhetorics	KZ	2
	expression as a means of human communication. Basic information about speech, articulation, oral and written langua		
	e semantics, language syntactic and the pragmatic aspect. Creative thought and its oral and written expression. Practic		
	n and Regional Rail Transport System	KZ	2
s .	emand, modal-split, traffic flows distribution on public transit network. Line network optimization and configuration. Tim netable. Rolling stock circulation, staff and crew services optimization and their order to rosters. Framework legislation,	0 0	
of public transport. Marketing.		non-barner enects	s and preference
	nician and Contemporary Society	KZ	2
	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 or	I	
-	hat are the sights for, interest in public affairs - a hangover from the past?		
20Y2TE Tech	nology of Electronic Systems	KZ	2
	fective operation of electronically controlled systems. Maintaining, meassuring, optimization of safety and reliability of	complex systems	. Semiconductor
	ssembly operations, interconnection and repairs technologiesusers and operators.	T	
	communications Systems and Multimedia	KZ	2
	ons namely applied in transport solutions, identification and quantification of telecommunications networks and services	performance bas	ed on redundant
	uaranteed service quality, two generations of the handover principles.	KZ	2
	sportation and Building Technology and Equipment hology and equipment hology and equipment.Transport of solid and mass material, soil and rock above all. Highway and underground cons	I	
-	ruction features, delivered mass calculation, economy of operation. Technics and technology of underground construct		
	rasound, laser, GPS, total stations).		
23Y2TP Crea	tion of legal and technical regulations	KZ	2
Creation of legislation, structure	e 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 testir	ng) in Czech Republic, organizations CEN, CENELEC and ETSI, the notification process.		

12Y2UD Sustainable Transportation	KZ	2
Sustainable development, definition, history, legal framework. Sustainable development indicators. Sustainable transportation, definition, history, lega	l framework. Pra	ctical application
of sustainable development theory, case study.		
14Y2UI Artificial Intelligence	KZ	2
History of artificial intelligence, knowledge, its representation including frames, state space search, constraints, genetic algorithms, machine learning		
20Y2UA Artificial Neural Networks, Realization and Applications	KZ	2
History of neural networks. Basic principles. Comparing the structure of a natural and an artificial neuron. Neural classificators, predictors, compresors.	expanders and o	other specialised
functional blocs and systems. Modelling of neurons. Grossberg's equations. Learning principles. Leyered and Hopfield's nets.		
18Y2UB Accident Biomechanics and Safety	KZ	2
Anatomy of man. Methods of Medical Diagnostics - RTG, CT, MRI, US. Dynamics of traumatic events. Factors influencing the severity of an accident a	nd the extent of a	a traffic accident.
Injuries in road traffic. Pedestrian injuries. Injury in railway and air traffic accidents. Analysis of biomechanical events in accidents and their computati	onal modeling. P	rinciples of
treatment and rehabilitation. Protective elements and safety measures in transport.		
23Y2VZ Leadership and Human Resource Development	KZ	2
Introduction to the study of human resources, human resources management, corporate goals, strategies, cultural and ethical aspects. Team management	ement, communi	cation in teams,
strategy and planning in human resources, ethics and corporate culture, cross-cultural differences. The labor code. Introduction into protocols.		
18Y2VC Computational Mechanics in Transportation	KZ	2
Principle of virtual work and variational principles in FEM. Bar shaped, planar and three - dimensional structures in FEM. FEM in statics and in dynar	nics of transporta	ational systems.
Elastic, elastoplastic and viscoelastic material. FEM in problems of biomechanics. Numerical analysis of structural parts with programme ANSYS on	instances.	
23Y2VR Cope with Risks in Engineering Branches	KZ	2
Types of engineering branches directed to risks, procedures used in risk engineering, ensuring the secured systems, ensuring the safe systems, ensuring	ring the safe syst	tems of systems.
12Y2VT High Speed Railways	KZ	2
High speed rail (HSR) transport characteristics and position in transportation system. HSR vehicles types and characteristics and control-command ar	nd signalling syste	em. HSR system
interoperability. Non-adhesion HSR systems. City traffic service by HSR. HSR operating points. HSR worldwide network. HSR routing and traffic cond	eption. Specifics	of HSR track
construction and geometrical characteristics.		
12Y2ZK Traffic Calming	KZ	2
Principles of traffic calming. Solution of road network organization. Urban road layouts. Psychological and physical obstacles (measures of traffic calming)	ning) and their co	mbinations.
Traffic calming measures in crossroads. Pedestrian zones. Residential streets and zones.		
23Y2ZM Intelligence Means and Methods	KZ	2
History and the present of intelligence services and their role in the modern world. How intelligence services handle with information. Methods and proce	dures of collectin	ig and evaluating
information. Means of intelligence services. Internal and external intelligence, military intelligence. The means and methods of state security services	. Cooperation arr	nong Intelligence
services within NATO, EU. The organization of the intelligence services.		

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:

Note on the gro				r	rr	
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	6 L	J
15JBI2	Language - Italian 2 Eva Rezlerová	Z	2	0P+2C+10B	6 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	6 L	J
15JBS2	Language - Spanish 2 Eva Rezlerová, Nina Hricsina Puškinová	Z	2	0P+2C+10B	6 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	Z	2	0P+2C+10B	Z	J
15JBF4	Eva Rezlerová, Nina Hricsina Puškinová Language - French 4	ZK	2	0P+2C+10B	L	J
15JBI4	Eva Rezlerová, Irena Veselková Language - Italian 4	ZK	2	0P+2C+10B		J
	Eva Rezlerová Language - German 4					
15JBN4	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	e courses of this group of Study Plan: Code=JZ-N-DS 20/21 Nar	ne=Jazyk na	v.14.se	m. (od) 2	0/21 - prog	gram DS
	nguage - French 1				Z	2
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	Style. Selection of conversation topics relating to transportation sciences. Developing					•
technical text content, struct	uring presentations and meeting minutes, elementary rhetorics of foreign language and	d practical applica	ation, forma	I and technic	cal registers a	nd their use,
language of management.						
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15J2I1 La	nguage - Italian 1				Z	2
Grammatical Structures and	Style. Selection of conversation topics relating to transportation sciences. Developing	perceptive and co	ommunicativ	ve skills, fee	dback skills, s	ummarising
technical text content struct	uring presentations and meeting minutes, elementary rhetorics of foreign language and	nractical applica	ation forma	l and technic	al registers a	nd their use
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language of management.						
15J2N1 La	nguage - German 1				Z	2
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technical text content, struct	uring presentations and meeting minutes, elementary rhetorics of foreign language and	d practical applica	ation, forma	I and technic	cal registers a	nd their use,
language of management.						
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15J2R1  La	nguage - Russian 1				Z	2
Grammatical Structures and	Style. Selection of conversation topics relating to transportation sciences. Developing	perceptive and co	ommunicativ	ve skills, fee	dback skills, s	ummarising
technical text content_struct	uring presentations and meeting minutes, elementary rhetorics of foreign language and	d practical applica	ation forma	l and technic	cal registers a	nd their use
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language of management.						
15J2S1 La	nguage - Spanish 1				Z	2
	Style. Selection of conversation topics relating to transportation sciences. Developing	porcontivo and co	mmunicati	l vo skills foo	dback skills is	ummarising
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	nguage - French 2				- 1	—
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language of management.						
15JBI2 La	nguage - Italian 2				Z	2
	Style. Selection of conversation topics relating to transportation sciences. Developing	perceptive and co	ommunicativ	ve skills, fee	dback skills, s	ummarising
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15JBN2 La	nguage - German 2				Z	2
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	Style. Selection of conversation topics relating to transportation sciences. Developing					-
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	nguaga Duasian 2				Z	2
	nguage - Russian 2				1	
Grammatical Structures and	Style. Selection of conversation topics relating to transportation sciences. Developing	perceptive and co	ommunicati	ve skills, fee	dback skills, s	ummarising
technical text content, struct	uring presentations and meeting minutes, elementary rhetorics of foreign language and	d practical applica	ation, forma	I and technic	cal registers a	nd their use,
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	nguage - Spanish 2				- 1	
Grammatical Structures and	Style. Selection of conversation topics relating to transportation sciences. Developing	perceptive and co	ommunicati	ve skills, fee	dback skills, s	ummarising
technical text content, struct	uring presentations and meeting minutes, elementary rhetorics of foreign language and	d practical applica	ation, forma	I and technic	cal registers a	nd their use,
language of management.						
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15JBS3	Language - Spanish 3	Z	2
Grammar and stylistics.	Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of	of language struct	ure knowledge
and perceptive and con	municative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Wo	rk with (professior	nal) text and its
features. Practice of ora	I and written presentation.		
15JBF4	Language - French 4	ZK	2
Grammar and stylistics.	Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of	of language struct	ure knowledge
and perceptive and con	municative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Wo	rk with (professior	nal) text and its
features. Practice of ora	I and written presentation.		
15JBI4	Language - Italian 4	ZK	2
Grammar and stylistics.	Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of	of language struct	ure knowledge
and perceptive and con	municative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Wo	rk with (professior	nal) text and its
features. Practice of ora	I and written presentation.		
15JBN4	Language - German 4	ZK	2
Grammar and stylistics.	Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of	of language struct	ure knowledge
and perceptive and con	municative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Wo	rk with (professior	nal) text and its
features. Practice of ora	I and written presentation.		
15JBR4	Language - Russian 4	ZK	2
Grammar and stylistics.	Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of	of language struct	ure knowledge
and perceptive and con	nmunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Wo	rk with (professior	nal) text and its
features. Practice of ora	I and written presentation.		
15JBS4	Language - Spanish 4	ZK	2
Grammar and stylistics.	Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of	of language struct	ure knowledge
and perceptive and con	nmunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Wo	rk with (profession	nal) text and its
features. Practice of ora	I and written presentation.		

## List of courses of this pass:

	Name of the course	Completion	Credits
11STS	Stochastic Systems	Z,ZK	4
The subject deal	s with the problems of mathematical modelling of dynamical systems, estimation od these models and their utilization for prediction.	The results are illus	strated on
practical tra	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
11Y2FX	Functions of Complex Variable	KZ	2
Derivation of com	plex function, holomorphic function, complex exponential series, integration, Cauchy theorem. Taylor series, Laurent series of compl	ex variable function	. Basics of
	Laplace and Z-transformation.		
11Y2LG	Logics of Engineer's Judgement	KZ	2
Logical structure of	f engineer's judgement, its propositional and predicative logical base. Solutions of logical tasks through the methods of truthfulness	and semantic analy	sis charts
	Venn's diagram method. Logical basis for network design for the solution of technical tasks.		
11Y2PM	Programming in MATLAB	KZ	2
To explain the prir	nciple of modelling and simulation, description of Matlab environment and its settings, optimization and program code debugging, da	ta fitting and desigr	ning GUI in
	Matlab.		
12BED	Road Safety Audit	Z,ZK	4
	cations of safety assessments (especially Road Safety Audit, Road Safety Inspection) during the process of preparations, and of the process of preparations, and of the process of preparations, and of the process of preparations and process of		of the roa
network that shoul	d minimize traffic accident risks for all those who take part in road traffic. Application of European Directive 2008/96/EC on road safe		
		ty infrastructure ma	anagement
12DAZP	Transport and Environment	Z,ZK	4
12DAZP	Transport and Environment he impact of transport on environment. The accent is put mainly on noise and vibration, emission, barrier effect and energy demands.	Z,ZK	4
12DAZP This course aims th	Transport and Environment ne impact of transport on environment. The accent is put mainly on noise and vibration, emission, barrier effect and energy demands. parcel of this course.	Z,ZK The noise measury	4
12DAZP This course aims th 12IDOS	Transport and Environment ne impact of transport on environment. The accent is put mainly on noise and vibration, emission, barrier effect and energy demands. parcel of this course. Integrated Transport Systems	Z,ZK The noise measury ZK	4 / is part an 3
12DAZP This course aims th 12IDOS	Transport and Environment ne impact of transport on environment. The accent is put mainly on noise and vibration, emission, barrier effect and energy demands. parcel of this course. Integrated Transport Systems ling of integrated transport systems, principle of integration, dividing of integration methods, traffic, infrastructure, technical, organiza	Z,ZK The noise measury ZK	4 / is part an 3
12DAZP This course aims th 12IDOS Reasons for build	Transport and Environment ne impact of transport on environment. The accent is put mainly on noise and vibration, emission, barrier effect and energy demands. parcel of this course. Integrated Transport Systems 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.	Z,ZK The noise measury ZK tional methods, inte	4 / is part an 3 egration of
12DAZP This course aims th 12IDOS Reasons for build 12IKD	Transport and Environment ne impact of transport on environment. The accent is put mainly on noise and vibration, emission, barrier effect and energy demands. parcel of this course. Integrated Transport Systems 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. Rail Transport Infrastructure	Z,ZK The noise measury ZK tional methods, inte	4 / is part an 3 egration of 5
12DAZP This course aims th 12IDOS Reasons for build 12IKD	Transport and Environment ne impact of transport on environment. The accent is put mainly on noise and vibration, emission, barrier effect and energy demands. parcel of this course. Integrated Transport Systems 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. Rail Transport Infrastructure lateral acceleration, parameters eduction for transition curve and cant transition, curves without straight, track spacing change. Track det	Z,ZK The noise measury ZK tional methods, inte Z,ZK ailed construction. S	4 / is part an 3 egration of 5
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12DAZP This course aims th 12IDOS Reasons for build 12IKD	Transport and Environment Transport and Environment Transport on environment. The accent is put mainly on noise and vibration, emission, barrier effect and energy demands. parcel of this course. Integrated Transport Systems Integrated Transport Systems Integration, dividing of integration methods, traffic, infrastructure, technical, organiza tariff, sales systems, information systems, marketing of system, examples of non-integration. Rail Transport Infrastructure Iateral 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 Traffic Models	Z,ZK The noise measury ZK tional methods, inte Z,ZK ailed construction. S s. Z,ZK	4 / is part an 3 egration of 5
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12DAZP This course aims th 12IDOS Reasons for build 12IKD Non-compensated 12MSD 12NAPI	Transport and Environment           ne impact of transport on environment. The accent is put mainly on noise and vibration, emission, barrier effect and energy demands. parcel of this course.           Integrated Transport Systems           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.           Rail Transport Infrastructure           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 Traffic Models           Practical creation of traffic models as well as their calibration. Applying new trends in traffic planning with the aim on Smart cities in Design and Maintenance of Transportation Structures	Z,ZK The noise measury ZK tional methods, inte Z,ZK ailed construction. S S. Z,ZK solutions. Z,ZK	4 y is part an 3 agration of 5 Substructur 4 4
12DAZP This course aims th 12IDOS Reasons for build 12IKD Non-compensated 12MSD 12NAPI	Transport and Environment           ne impact of transport on environment. The accent is put mainly on noise and vibration, emission, barrier effect and energy demands. parcel of this course.           Integrated Transport Systems           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.           Rail Transport Infrastructure           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 Traffic Models           Practical creation of traffic models as well as their calibration. Applying new trends in traffic planning with the aim on Smart cities : Design and Maintenance of Transportation Structures           ruction of cement-concrete pavements and their maintenance. Construction of bridge objects, examples and choice of bridge construction	Z,ZK The noise measury ZK tional methods, inte Z,ZK ailed construction. S S. Z,ZK solutions. Z,ZK	4 y is part an 3 agration of 5 Substructur 4 4
12DAZP This course aims th 12IDOS Reasons for build 12IKD Non-compensated 12MSD 12NAPI Design and const	Transport and Environment         ne impact of transport on environment. The accent is put mainly on noise and vibration, emission, barrier effect and energy demands. parcel of this course.         Integrated Transport Systems         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.         Rail Transport Infrastructure         Iateral 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 Traffic Models         Practical creation of traffic models as well as their calibration. Applying new trends in traffic planning with the aim on Smart cities in Design and Maintenance of Transportation Structures         ruction of cement-concrete pavements and their maintenance. Construction of bridge objects, examples and choice of bridge constru- and operation of tunnels.	Z,ZK The noise measury ZK tional methods, inte Z,ZK ailed construction. S . Z,ZK solutions. Z,ZK uction materials. Co	4 y is part an 3 agration of 5 Substructur 4 4
12DAZP This course aims th 12IDOS Reasons for build 12IKD Non-compensated 12MSD 12NAPI Design and const 12TEAP	Transport and Environment         Transport and Environment         ne impact of transport on environment. The accent is put mainly on noise and vibration, emission, barrier effect and energy demands. parcel of this course.         Integrated Transport Systems         Rail Transport Infrastructure         Integration curve and cant transition, curves without straight, track spacing change. Track det         design, slab track. Tram-train. Interoperability. Noise precautions. Railway line moderni	Z,ZK The noise measury ZK tional methods, inte Z,ZK ailed construction. S s. Z,ZK uction materials. Co Z,ZK	4 y is part an 3 egration of 5 Substructur 4 onstruction 7
12DAZP This course aims th 12IDOS Reasons for build 12IKD Non-compensated 12MSD 12NAPI Design and const 12TEAP Traffic paramete	Transport and Environment           ne impact of transport on environment. The accent is put mainly on noise and vibration, emission, barrier effect and energy demands. parcel of this course.           Integrated Transport Systems           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.           Rail Transport Infrastructure           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 Traffic Models           Practical creation of traffic models as well as their calibration. Applying new trends in traffic planning with the aim on Smart cities in Design and Maintenance of Transportation Structures           ruction of cement-concrete pavements and their maintenance. Construction of bridge objects, examples and choice of bridge constru- and operation of tunnels.           Theory of Road Traffic Operation           rs and their measurement, acquisition and processing. Road capacity analysis. Theoretical foundations and applications of mathematical	Z,ZK The noise measury ZK tional methods, inte Z,ZK ailed construction. S s. Z,ZK solutions. Z,ZK uction materials. Co Z,ZK atical models - mac	4 y is part and 3 egration of 5 Substructur 4 0 0 7 roscopic,
12DAZP This course aims th 12IDOS Reasons for build 12IKD Non-compensated 12MSD 12NAPI Design and const 12TEAP Traffic paramete	Transport and Environment         Transport and Environment         ne impact of transport on environment. The accent is put mainly on noise and vibration, emission, barrier effect and energy demands. parcel of this course.         Integrated Transport Systems         Rail Transport Infrastructure         Integration curve and cant transition, curves without straight, track spacing change. Track det         design, slab track. Tram-train. Interoperability. Noise precautions. Railway line moderni	Z,ZK The noise measury ZK tional methods, inte Z,ZK ailed construction. S s. Z,ZK solutions. Z,ZK uction materials. Co Z,ZK atical models - mac	4 y is part and 3 egration of 5 Substructur 4 0 0 7 roscopic,

12TKVP	Highway Engineering Materials	Z,ZK	4
The theory of road	construction - Material Aspects. The course emphasizes the development of road construction from the beginning of the 20th centu	ry to the present, f	ocusing or
	materials, understanding the production and placing of asphalt mixtures.		1
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	-	
ransport. 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 size and shape of the city, on the development of the street and the size and shape of the city of the street and the size and shape of the city of the street and the size and shape of the city of the street and the size and shape of the city of the street and the size and shape of the city of the street and the size and shape of the city of the street and the size and shape of the city of the street and the size and shape of the city of the street and the size and shape of the city of the street and the size and shape of the city of the street and the size and shape of the city of the street and the size and shape of the city of the street and the size and shape of the city of the street and the size and shape of the city of the street and the size and shape of the city of the street and the size and shape of the city of the street and the size and shape of the city of the street and the size and shape of the city of the street and the size and shape of the street and the street and the street and the size and shape of the street and the size and shape of the street and the	quare and the road	is. Solution
40\/DZ	for pedestrian and bicycle transport. Suburbanization and transport. City economics.	1/7	2
12VRZ	High Speed Rail Transport (HSR) transport characteristics and position in transportation system. Types / models of HSR systems, preparation of high speed rail	KZ	3
	. 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.		on opcome
12XN1	Master Project 1	Z	2
12XN2	Master Project 2	Z	2
		Z	1
12XN3	Master Project 3		
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	d accidents rates, social looses. Collision points, diagrams. Tools and methods for safer road transportation. Crossroads from the point	of view of safety. P	sychologic
(	right of way. Roundabouts. Pedestrian transport, cyclists. Traffic lights coordination. Transport control and regulation.		
12Y2DU	Transport in the Context of Sustainability	KZ	2
elinitions of susta	nable transport, historical context, development in our country and in the world. Sustainable development and sustainable transport. E	vernand for transpo	nt. inductio
40/010	of transport. Examples of sustainable transport. Biofuels. Electromobility. New trends in transport. Practical examples.	1/7	
12Y2IS	Urban Networks	KZ	2
ne importance an	the position of UN as public and technical infrastructure / utilities, metodology of the UN master planning, of UN design, UN coordi operation (basic technical standards of UN, trenchless technologies for UN).		
12Y2KE	Landscape Ecology	KZ	2
	gy. Landscape - definition, types, evolution. Landscape systems. Anthropogenic impacts on landscape. Methods using for evaluating	1	1
Landscape ecolo	and its potential applications in landscape ecology. Landscape planning.	landscape. I lacia	geomeny
12Y2KS	Rail Transport in Settlements and Regions	КZ	2
	d development of railway infrastructure in Czech Republic. Arrangement of railway networks and junctions. Suburban railway service		1
	tion of metro systems. Network configuration and operation of tram systems. Special thematic lectures (rail transport in selected cou	-	
12Y2MD	Methods of Traffic Regulation and Prediction	KZ	2
	prognosis, traffic prognosis for large area (calculation of future traffic volumes, calculation of future traffic volumes between areas (ana	1	1
	modal split, traffic distribution to road network). Shock wave in traffic flow. Service levels and their traffic volumes. Acceleration		
12Y2MH	Measurement and Modeling of Traffic Noise	KZ	2
	ction to noise from traffic. Noise from rail transport. Noise from road traffic. Measurement and calculation of noise from rail traffic. Measurement and calculation of noise from rail traffic.	1	lculation c
	noise from road traffic. Modelling of traffic noise in the CADNA A.		
12Y2MI	Urban Engineering	KZ	2
Te	aching aming on utilities storage in area, coordination engineering activities in area, arrangement of public space, concepement of p	ublic spaces.	•
12Y2MZ	Modernization of Railway Lines and Stations	KZ	2
	ng. AGC and AGTC Agreement. AGC and AGTC railway network. Principles of modernization (conceptual papers, definitions of basic of	· · ·	
Track geometrical	characteristics on modernized railway lines. Superstructure and substructure on upgraded lines. Designing of railway stations. Bridg	es and tunnels. De	evelopmen
(0)(0)	and realization of projects. Technical description of the tranzit corridors.		
12Y2RD	Realization of Transport Buildings	KZ	2
	Types. Project Documentation Types. Building Code. Land Permission and Building Permission Process. Building Process. Project Eco	-	
12Y2UD	Sustainable Transportation	KZ	2
Sustainable develo	oment, definition, history, legal framework. Sustainable development indicators. Sustainable transportation, definition, history, legal fr of sustainable development theory, case study.	amework. Practica	i applicati
12Y2VT		1/7	2
	High Speed Railways		2
		signalling system.	-
ligh speed rail (HS	R) transport characteristics and position in transportation system. HSR vehicles types and characteristics and control-command and son-adhesion HSR systems. City traffic service by HSR. HSR operating points. HSR worldwide network. HSR routing and traffic conce	eption, Specifics of	
ligh speed rail (HS	R) transport characteristics and position in transportation system. HSR venicies types and characteristics and control-command and son- adhesion HSR systems. City traffic service by HSR. HSR operating points. HSR worldwide network. HSR routing and traffic conce construction and geometrical characteristics.	eption. Specifics of	
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ligh speed rail (HS interoperability. N 12Y2ZK	n-adhesion HSR systems. City traffic service by HSR. HSR operating points. HSR worldwide network. HSR routing and traffic conce construction and geometrical characteristics. Traffic Calming	KZ	2 binations.
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tigh speed rail (HS interoperability. N 12Y2ZK Principles of traff 12ZSUZ Equipment for pass 14GISS Constructio 14XN1 14XN2 14XN3 14XN4 14XNDD 14Y2C1	n-adhesion HSR systems. City traffic service by HSR. HSR operating points. HSR worldwide network. HSR routing and traffic conce construction and geometrical characteristics. Traffic Calming c calming. Solution of road network organization. Urban road layouts. Psychological and physical obstacles (measures of traffic calm Traffic calming measures in crossroads. Pedestrian zones. Residential streets and zones. Railway Stations and Centres enger transport. Platform construction. Access roads to platforms. Modification of railway stations according to the TSI PRM. Station h of station heads for current ride. Junction stations. Crossing stations. Passenger stations. Moving stations. Public transport term Geographical Information Systems nof saving format of space-oriented information land-survey and cartography minimum basic tasks of spatial operations principles of Master Project 1 Master Project 2 Master Project 3 Master Project 4	KZ ing) and their com Z,ZK neads design. Varia- inals. KZ f territorial identific Z Z Z Z KZ	ant solution 2 ation 2 2 1 8 18 2

14Y2C2 Extension of basic	CATIA II c course. Modeling compound bodies. Possibility of enumeration, comunications with other systems. Surface x solid bodies. Kinematic	KZ	2 act making
Extension of basic	and project cooperation. Outputs of projects.	ritechanism. Froje	SCI MAKING
14Y2CS	Sensitivity of Systems	KZ	2
Design of system	s with defined reliability. The impact of changing parameters and subsystems within a system. System sensitivity computing, definitio matrices and their usability in system design.	n of sensitivity fund	ctions and
14Y2IS	Intelligent Systems in Postal Services	KZ	2 adaa in tha
	ation systems in the postal services (ITIS, and POST, T + T, PS, KMP, DS), application of information technology in the processing of imizing logistics processes in the post. The appreciation of the real implementation of the Czech post in operation both in lectures and in		
14Y2JM	desk. One-Chip Controllers	ΚZ	2
	rollers architecture, embedded peripherals (counters, timers, converters, ports) and their utilisation. Practical tasks are programmed		
14Y2KI	Capital Investment in Transportation and Telecommunications Financial market, investment desicion making - long term goals and investment strategies, long term financing	KZ	2
14Y2OP Class, object, enc	Object Oriented Programming in Transport apsulation, 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.	1/7	0
14Y2PH Introduction to CAI	CAD Interface Programming D interface programming techniques with the help of LIST and VBA programming languages. Possibilities of proper objects (comman applications creation in CAD systems. Programming of cooperation with other applications (databases, spread-sheets).	KZ ds), dialogues, inte	2 erfaces, and
	Process Information Systems in Transportation letailed usage of transport information systems, e.g. EFC, ePurse and transport check-in systems for public transport with focus on an riented Architecture). Inforamtion systems implementation and operations description in the Czech Republic (technical and process)		
14Y2PJ OOP philosophy ar	C++ Programming Language ad basics of C++ programming language. Class, object, constructor, destructor, inheritance, abstract class, virtual methods, exceptions, overloading, abstract data type implementation in C++.	KZ streams, method a	2 Ind operato
14Y2TU	Telecommunications Systems and Multimedia	KZ	2
	ommunications 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.	formance based o	n redundar
14Y2UI His	Artificial Intelligence story of artificial intelligence, knowledge, its representation including frames, state space search, constraints, genetic algorithms, mac	KZ hine learning.	2
15J2A1 P	Language - English 1 resentation Skills - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work o	Z engagement.	2
15J2F1	Language - French 1	Z	2
echnical text conte	ctures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, ent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and tec language of management.	hnical registers an	d their use
15J2I1 Grammatical Strue	Language - Italian 1 ctures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills,	Z feedback skills, su	2 Immarisin
	ent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and tec language of management.		
	Language - German 1 ctures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, ent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and tec language of management.		
15J2R1	Language - Russian 1	Z	2
	ctures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, ent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and tec language of management.		
15J2S1	Language - Spanish 1	Z	2
	tures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, ent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and tec language of management.		
15JBA2	Language - English 2	Z	2
15JBA3	resentation Skills - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work ( Language - English 3	engagement. Z	2
	s - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work engagement.Op FCE, CAE.		
15JBA4 Presentation Skill	Language - English 4 s - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work engagement.Op FCE, CAE.	ZK tional courses for c	2 certificates
15JBF2	Language - French 2	Z	2
	tures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, ent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and tec language of management.		-
15JBF3	Language - French 3	Z	2
	istics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work w		-
	features. Practice of oral and written presentation.		

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		-
and perceptive and	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v	with (professional)	text and its
15JBI2	features. Practice of oral and written presentation.	Z	2
	Language - Italian 2 tures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills,	- 1	
	ent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and tec		-
	language of management.	Ū	
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		-
and perceptive and	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v	with (professional)	text and its
15JBI4	features. Practice of oral and written presentation.	ZK	2
	Language - Italian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la		
	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v		
	features. Practice of oral and written presentation.		
15JBN2	Language - German 2	Z	2
	tures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills,		-
technical text conte	ent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and tec	chnical registers an	id their use,
15JBN3	language of management. Language - German 3	Z	2
	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la	- 1	
	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v		-
	features. Practice of oral and written presentation.		
15JBN4	Language - German 4	ZK	2
-	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la		-
and perceptive and	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v	with (professional)	text and its
15JBR2	features. Practice of oral and written presentation.	7	2
	Language - Russian 2 tures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills,	∠   feedback skills_si	
	ent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and tec		-
	language of management.	-	
15JBR3	Language - Russian 3	Z	2
	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la		-
and perceptive and	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v	with (professional)	text and its
15 IBR4	features. Practice of oral and written presentation.	7K	2
15JBR4 Grammar and styli	Language - Russian 4	ZK anguage structure	2 knowledge
Grammar and styli		anguage structure	knowledge
Grammar and styli and perceptive and	Language - Russian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v features. Practice of oral and written presentation.	anguage structure	knowledge
Grammar and styli and perceptive and 15JBS2	Language - Russian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work features. Practice of oral and written presentation. Language - Spanish 2	anguage structure with (professional) Z	knowledge text and its 2
Grammar and styli and perceptive and 15JBS2 Grammatical Struct	Language - Russian 4           stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la dommunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with features. Practice of oral and written presentation.           Language - Spanish 2           tures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills,	anguage structure with (professional) Z feedback skills, su	knowledge text and its 2 ummarising
Grammar and styli and perceptive and 15JBS2 Grammatical Struct	Language - Russian 4           stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lad communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with features. Practice of oral and written presentation.           Language - Spanish 2           tures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, elementary rhetorics of foreign language and practical application, formal and tectors.	anguage structure with (professional) Z feedback skills, su	knowledge text and its 2 ummarising
Grammar and styli and perceptive and 15JBS2 Grammatical Struct technical text conte	Language - Russian 4           stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lad           a communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v           features. Practice of oral and written presentation.           Language - Spanish 2           tures 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 teclanguage of management.	anguage structure with (professional) Z feedback skills, su chnical registers an	knowledge text and its 2 ummarising id their use,
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Grammar and styli and perceptive and 15JBS2 Grammatical Struct technical text contect 15JBS3 Grammar and styli	Language - Russian 4           stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lad           a communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v           features. Practice of oral and written presentation.           Language - Spanish 2           tures 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 teclanguage of management.	anguage structure with (professional) [2010] feedback skills, su chnical registers an [2010] anguage structure	knowledge text and its 2 ummarising id their use, 2 knowledge
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15Y2OF	Specialised French for Transportation and Telecommunications	KZ	2
Basic transpo	rtation (public transport, railway, air, road and ship transport) and telecommunications terminology. Special focus on independent special	eaking and writing	skills.
15Y2OZ	Health Protection in Transportation and EU	KZ	2
Health protection	in transportation in CR in the past and present. Conditions before 1989 and after, current legislature, future prospects. Harmonisation members. Fundamental principles of health protection and support in selected EU countries.	of legislation with	other EU
15Y2PD	Practical Spanish for Transportation	KZ	2
	communication skills, training of correct written expression of formal character, basic technical vocabulary, cultural specifics of the S		
	Terminology of transport and commerce.	1/7	0
15Y2PT	Food in Transportation Interaction transportation and foodstuffs. The health risks. Hygienic safeguard. The practical examples from the Czech Republic and	KZ from the world. Th	2 ne issues of
	dining cars, work trains and other railroad equipment. Legislation.		
15Y2PU	Publications and Their Creation	KZ	2
	es. Footnotes and references. Exploration of facts. Quotations. Formal document layout. Working with information databases. Typogra editors - MS Word, Tex/LaTeX. Practical creation of simple scientific documents.		pographic
15Y2SP	Seminar on Political Philosophy	KZ	2
101201	Interpreting of philosophical texts, view of society, state and their system of government.	1.2	2
15Y2SR	Stylistics and Rhetorics	KZ	2
	and written expression as a means of human communication. Basic information about speech, articulation, oral and written language		_
	ng. Language semantics, language syntactic and the pragmatic aspect. Creative thought and its oral and written expression. Practice - i		
-		-	-
15Y2TS	Technician and Contemporary Society	KZ	2
my to take off a ha	at in a room and open a door for a lady, are there simple solutions, science vs belief, do we need to know or is it enough to turn on a F	C, it must be true	- It 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 transp	ortation vehicle according to its usage and function. Marketing and user demands. Vehicle dynamics. Propulsion systems. Design pro	cess, functional de	esign and
	vehicle structure. Evaluation of variant concepts. Design phases. Realiability, technological aspects etc.		
16STK	Simulation and Testing of Vehicle Body and Systems	ZK	3
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 vehicl	es of on-land carri	age.
16XN1	Master Project 1	Z	2
16XN2	Master Project 2	Z	2
16XN3	Master Project 3	Z	1
	-		-
16XN4	Master Project 4	Z	8
16XNDD	Master Thesis for study programme DS	Z	18
16Y2EE	Emissions and Ergenomics of Vehicles		
missions and ergo	Emissions and Ergonomics of Vehicles		
Emissions and ergo physical values, wa	nomy of vehicles and the influence on man and nature. National and international law related to the hygiene. Noise and vibrations - s ys of measuring, prevention, elimination. Exhausts - creation, measurement, reduction, non-regular fuels and drives. Ergonomy - sitting reach. Condition - heating, ventilation, air-conditioning, filtration, tiredom.	ources, creation, p , standing, control,	propagation, operational
Emissions and ergo ohysical values, wa 16Y2HP	onomy of vehicles and the influence on man and nature. National and international law related to the hygiene. Noise and vibrations - s ys of measuring, prevention, elimination. Exhausts - creation, measurement, reduction, non-regular fuels and drives. Ergonomy - sitting reach. Condition - heating, ventilation, air-conditioning, filtration, tiredom. Vehicle Hygiene	ources, creation, p , standing, control, KZ	oropagation operationa 2
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17Y2AM			
Application of ma	Application of Marketing Tools in Transportation	KZ Iblic passenger t	2 ansport.
17Y2FM	Financing in Urban Mass Transportation	KZ	2
	elopment in Prague and other cities in the world. Building and operation of public tram, bus, and trolleybus networks. Underground l		
UMT types. UMT dev	velopment in small towns. Particularities of investment and operation financing of individual UMT types. Historic and present models	of UMT financir	g. Transpor
	inspection and blind passengers. Tourism & amp; UMT. UMT typology & amp; choice of optimum financing.		
17Y2MO	International Organisations in Transportation	KZ	2
International relation	ons in transport, UN, EEC UN, Intergovernmental organisations, EU Offices and Agencies, Conference of European Ministries of tra	ansport, Internati	onal mode
	organisations of public transport, Air-Rail, railways, roads, air, waterways, forwarding and postal services.		
17Y2MS	Microsimulation of Railway Operation	KZ	2
	naracteristics of simulation tools, creation of a simulation model of railway infrastructure, verification of a specific operational conception of the proceed operation operation of the proceed operation operat	-	
adaptation of the inita	astructure model and modification to the infrastructure to allow the implementation of the proposed operational concept. Stability test of sensitivity of the operational concept to delays.	is and evaluation	s. Evaluatio
17Y2MT	Modern History for Engineering Students	KZ	2
I	om the 19. century history. Geopolitical situation in Europe explained on the examples of Great Britain, Germany and Austrian Empi		
	r, transatlantic transportation development. Imperial China: Late Qing dynasty. Selected chapters from the 20. century history: From		
	Czechoslovak historical myths.		
17Y2PS	Case Studies in Transportation	KZ	2
Simulation expert dis	cussions on the topics - the impact of transport on the environment and the economy, energy, construction of transport infrastructur	re etc. The stude	nts will each
lesson presented of	one current and the real issue, which solutions will have to think of each other. Each of them will be represent another role (public at	uthorities, investo	ors, carrier
	representative interest groups, residents, etc.).		
17Y2RZ	Control of Transport Processes	KZ	2
Theoretical bases, tr	ansport system, decomposition, factors influencing control, quality diagnosis, methods of control, systems for decision making support	port, risk of decis	ion making
	telematics.		T -
17Y2SJ	Network Timetabling on the Railway	KZ	2
	. Capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds and		-
circulation planning. F	Rules of train-diagramm creating. Timetables for more service-levels on the line. Construction slot conflicts between passenger- and relations and waiting times, timetables for lines under construction.	freight transport.	Network IIn
17Y2SK		KZ	2
I	Urban and Regional Rail Transport System		
-	periodic timetable. Rolling stock circulation, staff and crew services optimization and their order to rosters. Framework legislation, non-		
5 . 5	of public transport. Marketing.		
18GAZ	Geomechanics and Foundation Engineering	Z,ZK	3
	ertrographyand stratigraphy), mechanics of soils (classification of fundamental soils, mechanic properties of fundamental soils, perr	•	foundations
	tes, depth of founding), determination of planar foundations bearing and deformation, depth foundations – classification of depth fou	Indations elemer	ts, example
	tes, depth of founding), determination of planar foundations bearing and deformation, depth foundations – classification of depth fou of their use, piles (classification, technology od performing).	Indations elemer	ts, example
footings, footers, plat	of their use, piles (classification, technology od performing). Theoretical and Applied Mechanics	Z,ZK	4
(footings, footers, plat	of their use, piles (classification, technology od performing). Theoretical and Applied Mechanics eory of plasticity. Plasticity conditions. Elastoplastic and plastic states of cross-sections and beams. Reliability and durability of struct	Z,ZK ctures. The stress	4
footings, footers, plat 18TEAM Fundamentals of the	of their use, piles (classification, technology od performing). Theoretical and Applied Mechanics eory of plasticity. Plasticity conditions. Elastoplastic and plastic states of cross-sections and beams. Reliability and durability of structure state around a notch. Stress intensity factor. Fracture toughness. Energy methods of linear fracture mechanics. Crack driving fo	Z,ZK ctures. The stress rce.	4
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18TEAM   Fundamentals of the 18TIK   The course builds upo	of their use, piles (classification, technology od performing). Theoretical and Applied Mechanics eory of plasticity. Plasticity conditions. Elastoplastic and plastic states of cross-sections and beams. Reliability and durability of struct state around a notch. Stress intensity factor. Fracture toughness. Energy methods of linear fracture mechanics. Crack driving fo Theory of Engineering Structures on the knowledge gained in basic mechanics courses in bachelor study (especially Statics and Elasticity) in the field of mathematical	Z,ZK ctures. The stress rce. Z,ZK theory of elastic	4 and strain 4 ity. Emphas
18TEAM   Fundamentals of the 18TIK   The course builds upo	of their use, piles (classification, technology od performing). Theoretical and Applied Mechanics eory of plasticity. Plasticity conditions. Elastoplastic and plastic states of cross-sections and beams. Reliability and durability of struct state around a notch. Stress intensity factor. Fracture toughness. Energy methods of linear fracture mechanics. Crack driving fo Theory of Engineering Structures on the knowledge gained in basic mechanics courses in bachelor study (especially Statics and Elasticity) in the field of mathematical and axisymmetric problems, as well as on the calculation of stress and strain in plates and shells. Students are further acquainted w	Z,ZK ctures. The stress rce. Z,ZK theory of elastic	4 and strain 4 ity. Emphasi
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footings, footers, plat           18TEAM           Fundamentals of the           18TIK           rhe course builds upc           is placed on plane a           18XN1	of their use, piles (classification, technology od performing). Theoretical and Applied Mechanics eory of plasticity. Plasticity conditions. Elastoplastic and plastic states of cross-sections and beams. Reliability and durability of struct state around a notch. Stress intensity factor. Fracture toughness. Energy methods of linear fracture mechanics. Crack driving fo Theory of Engineering Structures on the knowledge gained in basic mechanics courses in bachelor study (especially Statics and Elasticity) in the field of mathematical and axisymmetric problems, as well as on the calculation of stress and strain in plates and shells. Students are further acquainted w behavior of subsoil used in the design of line structures. Master Project 1	Z,ZK ctures. The stress rce. Z,ZK theory of elastic ith methods of m Z	4 and strain 4 ity. Emphasi odeling the 2
footings, footers, plat           18TEAM           Fundamentals of the           18TIK           Fundamentals of the           18TIK           is placed on plane a           18XN1           18XN2	of their use, piles (classification, technology od performing). Theoretical and Applied Mechanics eory of plasticity. Plasticity conditions. Elastoplastic and plastic states of cross-sections and beams. Reliability and durability of struct state around a notch. Stress intensity factor. Fracture toughness. Energy methods of linear fracture mechanics. Crack driving fo Theory of Engineering Structures on the knowledge gained in basic mechanics courses in bachelor study (especially Statics and Elasticity) in the field of mathematical and axisymmetric problems, as well as on the calculation of stress and strain in plates and shells. Students are further acquainted w behavior of subsoil used in the design of line structures. Master Project 1 Master Project 2	Z,ZK ctures. The stress rce. Z,ZK theory of elastic ith methods of m Z Z	4 s and strain 4 ty. Emphasi odeling the 2 2
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footings, footers, plat          18TEAM         Fundamentals of the         18TIK         Fundamentals of the         18TIK         The course builds upor is placed on plane a         18XN1         18XN2         18XN3         18XN4         18XNDD         18Y2DC         Basic theory and calcor         /ibration of systems v         18Y2FZ         Atomistic models, latt         18Y2MP         Basic mathematicar         variational princip         18Y2OB         In the course studer         DSLRs and high sp         18Y2DD         The course is focused         defects and determina         18Y2UB         Anatomy of man. Mett	of their use, piles (classification, technology of performing). Theoretical and Applied Mechanics eory of plasticity. Plasticity conditions. Elastoplastic and plastic states of cross-sections and beams. Reliability and durability of struct state around a notch. Stress intensity factor. Fracture toughness. Energy methods of linear fracture mechanics. Crack driving fo Theory of Engineering Structures on the knowledge gained in basic mechanics courses in bachelor study (especially Statics and Elasticity) in the field of mathematical and axisymmetric problems, as well as on the calculation of stress and strain in plates and shells. Students are further acquainted w behavior of subsoil used in the design of line structures. Master Project 1 Master Project 2 Master Project 3 Master Project 4 Master Project 4 Master Project 4 Master Thesis for study programme DS Dynamics of Transport Routes and Vehicles ulations of more mass systems. Analysis of the forces acting between the vehicle and transport route. Creation of dynamic models of with a finite number of degrees of freedom. Methods of stiffness constants and pliability constants. Fundamentals of vibration of bridge of oscillation. Experimental methods in dynamics. Physical foundation of materials' properties Finite Element Method. Joir et Hemain discussed topics. Finite Element Method. Jure CST, LST, quadrilateral, tetrahedral and brick elements). Natural coordinates, na isoparametric representation. Numerical integration. Introduction of dynamics. FEM programming. Optical Contactless Strain Measurements twill get theoretical knowledge and practical experience in optical strain measurement methods. Students will get experience with weed cameras for acquisition of suitable image data and with digital image correlation algorithms for displacements measurements Reliability and Diagnostics, Experimental methods, structure, strain-gauge measure optical methods, including electron microscopy, will be used.	Z,ZK ctures. The stress rce. Z,ZK theory of elastic ith methods of m Z Z Z Z KZ vehicles and trar es. Criteria for the KZ ent and loading of KZ or the basic elem itural shape func KZ ause of laborator and strain fields of KZ es for the detection ment, photoelast KZ the extent of a tra	4         and strain         4         sand strain         4         ty. Emphas         odeling the         2         1         8         18         2         2         1         8         18         2         admissibilitie         2         on materials         admissibilitie         2         on materials         admissibilitie         2         on materials         admissibilitie         2         on materials         admissibilitie         2         on of materials         admissibilitie         2         on of materials         admissibilitie         2         on of materials         admissibilitie         2         of materials         admissibilitie         admissibilitie         2         on of materials         admissibilitie         admissibilitie         admissibilie

201/114	lastoplastic and viscoelastic material. FEM in problems of biomechanics. Numerical analysis of structural parts with programme AN		
20XN1	Master Project 1	Z	2
20XN2	Master Project 2	Z	2
20XN3	Master Project 3	Z	1
20XN4	Master Project 4	Z	8
20XNDD	Master Thesis for study programme DS	Z	18
20Y2PR	Prediction of time series	KZ	2
	eries prediction, meaning of prediction, basics of quantitative prediction. Methods for predictive quality evaluation, descriptive statistic		
prediction, prediction	on for general formula of loss function. Calculation and programming environment R. Regression models, basics of linear regression	, simple regressi	on. Multip
	regression, statistical tests of linear dependence, selection of input variables.	KZ	2
20Y2TE	Technology of Electronic Systems		2   2
incipie technologie	technologies, printed circuits, assembly operations, interconnection and repairs technologiesusers and operators.	ipiex systems. Of	enneonau
20Y2UA	Artificial Neural Networks, Realization and Applications	KZ	2
	vorks. Basic principles. Comparing the structure of a natural and an artificial neuron. Neural classificators, predictors, compresors, ex		
,	functional blocs and systems. Modelling of neurons. Grossberg's equations. Learning principles. Leyered and Hopfield's net		·
21XN1	Master Project 1	Z	2
21XN2	Master Project 2	Z	2
21XN3	Master Project 3	Z	1
21XN3	Master Project 3	Z	8
21XN4 21XNDD	Master Thesis for study programme DS	Z	18
21XNDD 21Y2BS	Unmanned aircraft systems 2	KZ	2
	 nanned aircraft development. Use of unmanned aircraft. Managerial activities related to the operation of unmanned aircraft. Flights be		
21Y2LS	Air Traffic Services	KZ	2
-	Czech Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, APP		
ispace siluciule ill	at USA and Czechoslovakia. ATS - Model of financing. Training Systém of Air Traffic Controllers. Future development of ATS		listory or
21Y2MS	Aerospace Engineering Simulation and Modelling	KZ	2
	led as a set of exemplary tasks and problems based on practical aviation issues. The university degree mathematic skills and softwi		1
-	isful 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
	s of aerodromes. Location of aerodrome and orientation of runways. Requirements for apron. Capacity of airports runways and term		
	conditions. Firefighting units. Protection against unlawful interference. Local transport connection. Environmental protection		
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		
aviation. Execution	n of state administration and state supervision in matters of civil aviation, in accordance with Act No. 49/1997 Col. Facilitation. Response	onsibilities of air o	carriers fo
	passengers, luggage and cargo. The safe transport of dangerous goods.		
21Y2S1	Diploma Thesis Seminar 1	KZ	2
	(review, applied research, basic research, work dealing with design proposals). Working with citation sources (citation databases, c	tation styles). A	2 2 2 2
vpes of final theses	Diploma Thesis Seminar 1 (review, applied research, basic research, work dealing with design proposals). Working with citation sources (citation databases, or current state (writing standards). Definition of the limitations of the current state. Introduction to the methodology of writing final to	tation styles). A	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
	(review, applied research, basic research, work dealing with design proposals). Working with citation sources (citation databases, c	tation styles). A	nalysis of
pes of final theses 21Y2S2 ethodology of writin	(review, applied research, basic research, work dealing with design proposals). Working with citation sources (citation databases, or current state (writing standards). Definition of the limitations of the current state. Introduction to the methodology of writing final the Diploma Thesis Seminar 2 In g final theses. Definition of materials and methods, approach to obtaining results, presentation and discussion of results, formulation	titation styles). An neses. KZ of conclusions. D	nalysis of 2 ata collec
pes of final theses 21Y2S2 ethodology of writin	(review, applied research, basic research, work dealing with design proposals). Working with citation sources (citation databases, or current state (writing standards). Definition of the limitations of the current state. Introduction to the methodology of writing final the Diploma Thesis Seminar 2 Ig final theses. Definition of materials and methods, approach to obtaining results, presentation and discussion of results, formulation sic statistics, validation of results and proposals. Achieving the objectives of the paper and evaluation of hypotheses tests. Formal ar	titation styles). An neses. KZ of conclusions. D	nalysis of 2 ata collec
pes of final theses 21Y2S2 ethodology of writin d presentation, bas	(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 the Diploma Thesis Seminar 2 grinal theses. Definition of materials and methods, approach to obtaining results, presentation and discussion of results, formulation sic statistics, validation of results and proposals. Achieving the objectives of the paper and evaluation of hypotheses tests. Formal ar - working with LaTeX and Word template.	itation styles). An neses. KZ of conclusions. D nd graphic design	nalysis of 2 ata collect n of the pa
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21Y2S2 2 ethodology of writin d presentation, bas 22AMMD eedetic location ar	(review, applied research, basic research, work dealing with design proposals). Working with citation sources (citation databases, or current state (writing standards). Definition of the limitations of the current state. Introduction to the methodology of writing final the Diploma Thesis Seminar 2 or final theses. Definition of materials and methods, approach to obtaining results, presentation and discussion of results, formulation sic statistics, validation of results and proposals. Achieving the objectives of the paper and evaluation of hypotheses tests. Formal ar - working with LaTeX and Word template. Measuring Methods Applied to Transportation and technical processing of traffic route with geodetic total station, GPS and photogrammetry, 3D scanning. Transport corridor setting	itation styles). An neses. KZ of conclusions. D nd graphic design KZ out using geode	alysis of 2 ata collect of the pa 4 tic metho
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zpes of final theses         21Y2S2         ethodology of writin         ad presentation, base         22AMMD         Geodetic location ar         etection and technic	(review, applied research, basic research, work dealing with design proposals). Working with citation sources (citation databases, or current state (writing standards). Definition of the limitations of the current state. Introduction to the methodology of writing final the Diploma Thesis Seminar 2 In g final theses. Definition of materials and methods, approach to obtaining results, presentation and discussion of results, formulation sic statistics, validation of results and proposals. Achieving the objectives of the paper and evaluation of hypotheses tests. Formal ar - working with LaTeX and Word template. Measuring Methods Applied to Transportation and 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 the and September - usually in examination period.	sitation styles). An neses. KZ of conclusions. D nd graphic design KZ out using geode e terms are usual	nalysis of 2 ata collect of the pa d ttic metho lly set in J
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23Y2FB	Physics for Security Branches	KZ	2
	ysics of substances and phenomena at extreme conditions. Grounds of rheology. Physics of Earth's interior. Geophysics. Physics of a	1	
Grounds of pri	dengineering branches directed to safety.	anosphere. Applic	
23Y2MA		KZ	2
-	Risk Analysis and Management		
•	nd terms. Risk sources, definition of hazard, impacts and risks. Methods for identification, analysis, assessment and management of	0	0 0
and good engine	ering practice. Methods, tools and techniques for risk engineering. System of systems risk. Application of strategic and system approa	ach for benefit of s	security and
	development. Territorial, emergency and crisis planning. Human factor - its role.		
23Y2PD	Practical vehicle dynamics	KZ	2
Theory of vehicle	dynamics. Multibody vehicle modeling. Modeling with IPG CarMaker. Standard and development stage experiments with road vehicle	s. Realization of e	experimental
	measurements with passenger vehicles. Experiment evaluation.		
23Y2TP	Creation of legal and technical regulations	KZ	2
Creation of legi	slation, structure of the bills of law, legal process, compatibility with the EC law, the creation of technical standards and their publication	on, ÚNMZ (Czech	Office for
	standards, metrology and testing) in Czech Republic, organizations CEN, CENELEC and ETSI, the notification process.		
23Y2VR	Cope with Risks in Engineering Branches	KZ	2
Types of engineeri	ng branches directed to risks, procedures used in risk engineering, ensuring the secured systems, ensuring the safe systems, ensurin	g the safe system	s of systems.
23Y2VZ	Leadership and Human Resource Development	KZ	2
Introduction to the	study of human resources, human resources management, corporate goals, strategies, cultural and ethical aspects. Team managem	ient, communicati	on in teams,
	strategy and planning in human resources, ethics and corporate culture, cross-cultural differences. The labor code. Introduction into	protocols.	
23Y2ZM	Intelligence Means and Methods	KZ	2
History and the pre	sent of intelligence services and their role in the modern world. How intelligence services handle with information. Methods and procedu	res of collecting a	nd evaluating
information. Means	s of intelligence services. Internal and external intelligence, military intelligence. The means and methods of state security services. C	ooperation among	g Intelligence
	services within NATO, EU. The organization of the intelligence services.		

For updated information see <u>http://bilakniha.cvut.cz/en/FF.html</u> Generated: day 2024-05-19, time 11:44.