### Study plan

## Name of study plan: DS nav.prez.14/15

Faculty/Institute/Others:

Department:

Branch of study guaranteed by the department: Welcome page

Garantor of the study branch:

Program of study: Technology in Transportation and Telecommunications

Type of study: Follow-up master full-time

Required credits: 120 Elective courses credits: 0 Sum of credits in the plan: 120

Note on the plan:

Name of the block: Compulsory courses Minimal number of credits of the block: 93

The role of the block: Z

Code of the group: 1.S.NPDS 11/12

Name of the group: 1.sem.nav.prez.DS od 11/12

improvement (geotextile, geogrids, anchored prefabticated elements), EN 1997-2.

Requirement credits in the group: In this group you have to gain 26 credits

Requirement courses in the group: In this group you have to complete 9 courses

Credits in the group: 26 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
12IKOD	Rail Transport Infrastructure	Z,ZK	5	3P+2C	Z	Z
12TKV	The Theory of Pavement Layers in Highway Engineering	Z,ZK	3	2P+1C	Z	Z
17TZE	Technology of Railway Transport	ZK	2	2P+0C	Z	Z
18GES	Geomechanics and Foundation Engineering	Z,ZK	4	2P+1C	Z	Z
18TIK	Theory of Engineering Structures Petr Koudelka, Petr Zlámal, Ond ej Jiroušek	Z,ZK	4	2P+1C	Z	Z
14GISS	Geographical Information Systems František Kekula, Tomáš Janata, Zuzana Purkrábková Tomáš Janata (Gar.)	KZ	2	0P+2C+8B	Z	Z
22SKM	Vehicle Kinematic Modelling and Simulation	KZ	2	0P+2C	Z	Z
12DZP	Transport and Environment	Z	2	2P+0C	Z	Z
15J2A1	Language - English 1 Barbora Horá ková, Jitka He manová, Dana Boušová, Lenka Monková, Peter Morpuss, Markéta Vojanová, Marie Michlová, Marek Tome ek, Markéta Musilová,	Z	2	0P+2C+10B	Z	Z

### Characteristics of the courses of this group of Study Plan: Code=1.S.NPDS 11/12 Name=1.sem.nav.prez.DS od 11/12

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12IKOD	Rail Transport Infrastructure	Z,ZK	5				
Non-compensated lateral acceleration, Parameters eduction for transition curve and cant transition, curves without straight, track spacing change. Railway, subway and tramway transition, curves without straight, track spacing change. Railway, subway and tramway transition.							
detailed construction. Continuous welded rail theory. Substructure, slab track. Tram-train. Interoperability. Noise precautions. Railway lines rationalisation, dispositional layout of							
operating points tracka	ges, passenger buildings and forecourts. Sidings, terminals.						
12TKV	The Theory of Pavement Layers in Highway Engineering	Z,ZK	3				
Function of transportati	ons in highway engineering - material aspects of roads and highways. The course covers evolution of highway engineering sind	ce the begining of	the 20th century				
with the emphasis of m	aterial aspects.						
17TZE	Technology of Railway Transport	ZK	2				
Track line capacity asse	sment, model operational situation with a system running time between IPT-nodes, calculation of traction energy savings cor	mpared with infras	structure costs				
for designing of fleeting	crossing station, solving of capacity problem and blocking time in relation to train protection system, robustness of timetable	, system concept	of freight train				
paths, guidelines for centralised operational traffic control and management.							
18GES	Geomechanics and Foundation Engineering	Z,ZK	4				
Basic soil behaviour, water flow in the soil, basic of the soil mechanic, mechanic of the soil mass, stress in the soil, landslide and their rehabilitation, mechanics of the rock mass, type							

of the foundations and their design, abutment walls, breast walls, sheeting structures, improvement of the soil, modern method of the subsoil bearing capacity and slope stability

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 mathematical theory of elasticity. Emphasi						
is placed on plane and	axisymmetric problems, as well as on the calculation of stress and strain in plates and shells. Students are further acquainte	d with methods of	modeling the			
behavior of subsoil use	d in the design of line structures.					
14GISS	Geographical Information Systems	KZ	2			
Construction of saving t	ormat of space-oriented information land-survey and cartography minimum basic tasks of spatial operations principles of ter	ritorial identificatio	n			
22SKM	Vehicle Kinematic Modelling and Simulation	KZ	2			
Principles and posibilitie	s of simulation tools with regards to vehicle movement analysis and vehicle crash analysis. Kinematic modelling of vehicle /	vehicle train move	ment. View			
conditions. Proposed ro	ad space passage.					
12DZP	Transport and Environment	Z	2			
This course aims the impact of transport on environment. The accent is put mainly on noise and vibration, emission, barrier effect and energy demands. The noise measury is part and						
parcel of this course.						
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: 2.S.NPDS 13/14

Name of the group: 2.sem.nav.prez.DS 13/14

Requirement credits in the group: In this group you have to gain 24 credits

Requirement courses in the group: In this group you have to complete 9 courses

Credits in the group: 24 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
11THRO	Queuing Theory Šárka Vorá ová <b>Šárka Vorá ová</b> Šárka Vorá ová (Gar.)	ZK	2	2P+0C+8E	L	Z
12NAP	Design and Operation of Traffic Engineering Facilities	Z,ZK	6	3P+2C	L	Z
16PDP	Principles of Vehicle Design Jaroslav Machan, David Lehet Jaroslav Machan (Gar.)	ZK	2	2P+0C+8E	L	Z
17MGD	Management of Transport Systems	Z,ZK	3	2P+1C+8E	L	Z
18TAM	Theoretical and Applied Mechanics	ZK	2	2P+0C	L	Z
12DVUP	Transport and Land - Use Planning	KZ	2	1+1	L	Z
22AMM	Measuring Methods Applied to Transportation	KZ	2	0+2	L	Z
14DSIM	Traffic Microsimulation	Z	3	0P+2C	L	Z
15JBA2	Language - English 2 Barbora Horá ková, Jitka He manová, Dana Boušová, Lenka Monková, Peter Morpuss, Markéta Vojanová, Marie Michlová, Marek Tome ek, Markéta	Z	2	0P+2C+10E	L	z

11THRO	Queuing Theory	ZK	2
Discrete event prod	cess, definition, random distribution, and probability. Basic processes, process of revitalisation. Markov process, Markov mode	els, Kendall classification	n, model M/M/
models M/M/n. No	n-markovian models, model M/C/n, models G/G/n. Models with continuous flow. Service net, examples of Petri net. Compute	r simulation.	
12NAP	Design and Operation of Traffic Engineering Facilities	Z,ZK	6
Past and present of	f the tunnel construction and design, technological systems at bridges and tunnels and its design, traffic and safety system, risk	analysis,bridges and tu	nnels operatio
durability of facilitie	98.		
16PDP	Principles of Vehicle Design	ZK	2
Design of transpor	rtation vehicle according to its usage and function. Marketing and user demands. Vehicle dynamics. Propulsion systems. Des	ign process, functional c	design and
vehicle structure. E	Evaluation of variant concepts. Design phases. Realiability, technological aspects etc.		
17MGD	Management of Transport Systems	Z,ZK	3
Functions, process	ses and systems of management in transport, organisational structures, strategy, social responsibility, soft skills.	1 ' 1	
18TAM	Theoretical and Applied Mechanics	ZK	2
-	Theoretical and Applied Mechanics heory of plasticity. Plasticity conditions. Elastoplastic and plastic state of body. Reliability and durability of structures. The stre		_
Fundamentals of the	•	ss and strain state arou	nd the notch.
Fundamentals of the Stress intensity fac	heory of plasticity. Plasticity conditions. Elastoplastic and plastic state of body. Reliability and durability of structures. The strector. Fracture toughness. Energy methods of linear fracture mechanics. Crack driving force. Opening the crack. Fatigue prope	ss and strain state arou	nd the notch.
Fundamentals of the Stress intensity factoring of the Dimensioning of factoring of the Street Street III and the Street III are the Street III and the Street III are	heory of plasticity. Plasticity conditions. Elastoplastic and plastic state of body. Reliability and durability of structures. The strector. Fracture toughness. Energy methods of linear fracture mechanics. Crack driving force. Opening the crack. Fatigue prope	ss and strain state arou	nd the notch.
Fundamentals of the Stress intensity factoring of the Street of the	heory of plasticity. Plasticity conditions. Elastoplastic and plastic state of body. Reliability and durability of structures. The strector. Fracture toughness. Energy methods of linear fracture mechanics. Crack driving force. Opening the crack. Fatigue prope	ss and strain state arou rties of the material. Fat	nd the notch. igue process.
Fundamentals of the Stress intensity factorized in Stress intensity factorized in Stress in Stre	heory of plasticity. Plasticity conditions. Elastoplastic and plastic state of body. Reliability and durability of structures. The strector. Fracture toughness. Energy methods of linear fracture mechanics. Crack driving force. Opening the crack. Fatigue propertigue.  Transport and Land - Use Planning	ss and strain state arou rties of the material. Fat  KZ  ce of traffic on area and	nd the notch. igue process.
Fundamentals of the Stress intensity factor intensioning of fath 12DVUP Explanation of fundsolving principles of the Street Street Intension of Street Intension of Street Intension of Street Intension of Street Intension	heory of plasticity. Plasticity conditions. Elastoplastic and plastic state of body. Reliability and durability of structures. The strector. Fracture toughness. Energy methods of linear fracture mechanics. Crack driving force. Opening the crack. Fatigue properatigue.  Transport and Land - Use Planning damental relation and connection between transport and territory, fundamentals of traffic layout. Land - use planning. Influence of different transport modes including pedestrian traffic and cycling transport. Traffic calming, parking. Complex transport study	ss and strain state arou rties of the material. Fat  KZ  ce of traffic on area and	nd the notch. igue process.
Fundamentals of the Stress intensity factorized intensioning of factorized intension in the Stress intension of function of fu	heory of plasticity. Plasticity conditions. Elastoplastic and plastic state of body. Reliability and durability of structures. The strector. Fracture toughness. Energy methods of linear fracture mechanics. Crack driving force. Opening the crack. Fatigue propertigue.  Transport and Land - Use Planning damental relation and connection between transport and territory, fundamentals of traffic layout. Land - use planning. Influence	ss and strain state arount ites of the material. Fat KZ ce of traffic on area and dy.	nd the notch. itigue process.  2 shape of towr
Fundamentals of the Stress intensity factorized intensioning of factorized intension in the Stress intension of fundamental intension in the Stress in the Str	heory of plasticity. Plasticity conditions. Elastoplastic and plastic state of body. Reliability and durability of structures. The strector. Fracture toughness. Energy methods of linear fracture mechanics. Crack driving force. Opening the crack. Fatigue properatigue.  Transport and Land - Use Planning damental relation and connection between transport and territory, fundamentals of traffic layout. Land - use planning. Influence of different transport modes including pedestrian traffic and cycling transport. Traffic calming, parking. Complex transport study.  Measuring Methods Applied to Transportation	ss and strain state arount ites of the material. Fat KZ ce of traffic on area and dy.	nd the notch. itigue process.  2 shape of towr
Fundamentals of the Stress intensity factorized in Stress intensity factorized in Stress intensity factorized in Stress intensity in Stress in Str	heory of plasticity. Plasticity conditions. Elastoplastic and plastic state of body. Reliability and durability of structures. The strector. Fracture toughness. Energy methods of linear fracture mechanics. Crack driving force. Opening the crack. Fatigue properatigue.    Transport and Land - Use Planning	ss and strain state arount ites of the material. Fat KZ ce of traffic on area and dy.	nd the notch. igue process.  2 shape of towr
Fundamentals of the Stress intensity factorized intensioning of factorized intensioning of factorized intension in the Stress in t	heory of plasticity. Plasticity conditions. Elastoplastic and plastic state of body. Reliability and durability of structures. The strector. Fracture toughness. Energy methods of linear fracture mechanics. Crack driving force. Opening the crack. Fatigue properatigue.    Transport and Land - Use Planning	ss and strain state arou rties of the material. Fat  KZ ce of traffic on area and dy.  KZ or setting out usány geo	nd the notch. igue process.  2 shape of town 2 detic methods
Fundamentals of the Stress intensity factorized int	heory of plasticity. Plasticity conditions. Elastoplastic and plastic state of body. Reliability and durability of structures. The strector. Fracture toughness. Energy methods of linear fracture mechanics. Crack driving force. Opening the crack. Fatigue properation.  Transport and Land - Use Planning damental relation and connection between transport and territory, fundamentals of traffic layout. Land - use planning. Influence of different transport modes including pedestrian traffic and cycling transport. Traffic calming, parking. Complex transport study.  Measuring Methods Applied to Transportation and technical processing of traffic route with geodetic total station, GPS and photogrammetry, 3D scanning. Transport corridornical processing of several vehicle dynamic characteristics using high-speed cameras, accelerometers and radar device.  Traffic Microsimulation	ss and strain state arou rties of the material. Fat  KZ ce of traffic on area and dy.  KZ or setting out usány geo	nd the notch. igue process.  2 shape of towr  2 detic methods  3 g a transport
Stress intensity factorized by the stress intensity	heory of plasticity. Plasticity conditions. Elastoplastic and plastic state of body. Reliability and durability of structures. The strector. Fracture toughness. Energy methods of linear fracture mechanics. Crack driving force. Opening the crack. Fatigue properation.  Transport and Land - Use Planning damental relation and connection between transport and territory, fundamentals of traffic layout. Land - use planning. Influence of different transport modes including pedestrian traffic and cycling transport. Traffic calming, parking. Complex transport study Measuring Methods Applied to Transportation and technical processing of traffic route with geodetic total station, GPS and photogrammetry, 3D scanning. Transport corridornical processing of several vehicle dynamic characteristics using high-speed cameras, accelerometers and radar device.  Traffic Microsimulation  traffic microsimulation models. Introduction to the working environment application. Project processing microsimulation models.	ss and strain state arou rties of the material. Fat  KZ ce of traffic on area and dy.  KZ or setting out usány geo	nd the notch. igue process.  2 shape of town  2 detic methods  3 g a transport

Code of the group: 3.S.NPDS 12/13

Name of the group: 3.sem.nav.prez.DS od 12/13

Requirement credits in the group: In this group you have to gain 23 credits

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

Credits in the group: 23 Note on the group:

1010 011 1110	<u> </u>	1			1	
Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11STS	Stochastic Systems Šárka Vorá ová, Evženie Uglickich, Natálie Blahitka, Michal Matowicki, Pavla Pecherková <b>Pavla Pecherková</b> Šárka Vorá ová (Gar.)	Z,ZK	4	2P+2C+14B	Z	Z
12IDOS	Integrated Transport Systems Martin Jareš, Petr Chmela	ZK	3	2P+0C	Z	Z
12TEPR	Theory of Road Traffic Operation	Z,ZK	8	4P+2C	Z	Z
20DTEL	Road´s Traffic Telematics	ZK	4	2P+0C	Z	Z
12BA	Road Safety Audit	KZ	2	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 12/13 Name=3.sem.nav.prez.DS od 12/13

11STS	Stochastic Systems	Z,ZK	4
The subject deals with	h the problems of mathematical modelling of dynamical systems, estimation od these models and their utilization for prediction	. The results are il	lustrated on
practical transportation	on tasks. Mathematical theory roots from probability and mathematical statistics and they use the methods of the Bayesian prob	oabilistic approach	١.
12IDOS	Integrated Transport Systems	ZK	3
Reasons for building	of integrated transport systems, principle of integration, dividing of integration methods, traffic, infrastructure, technical, organiz	ational methods,	integration of
tariff, sales systems,	information systems, marketing of system, examples of non-integration.		
12TEPR	Theory of Road Traffic Operation	Z,ZK	8
Basic transport parar	neters and their measurement, traffic sensors. The concept of capacity analysis. Theoretical foundations and application of sim	ulation models, m	acroscopic and
statistical models. Th	eory of traffic management of intersections, urban areas and highways. Green Wave and priority of public transport. Identification	on and manageme	ent of accidents
	eory of traffic management of intersections, urban areas and highways. Green Wave and priority of public transport. Identification Ids of evaluation of roads maintenance.	on and manageme	ent of accidents
		on and manageme	ent of accidents
Principles and metho 20DTEL	ds of evaluation of roads maintenance.	ZK	
Principles and metho 20DTEL	ds of evaluation of roads maintenance.  Road's Traffic Telematics	ZK	
Principles and methon 20DTEL Traffic management of 12BA	ds of evaluation of roads maintenance.  Road´s Traffic Telematics  n cities and on highways, information and navigation systems, electronic fee collection, safe and intelligent vehicle and safety s	ZK ystems.	4
Principles and method 20DTEL Traffic management 12BA Schedules of applica	ds of evaluation of roads maintenance.  Road's Traffic Telematics  n cities and on highways, information and navigation systems, electronic fee collection, safe and intelligent vehicle and safety s  Road Safety Audit	ZK ystems.  KZ I minimize traffic a	4
Principles and method 20DTEL Traffic management 12BA Schedules of applica	ds of evaluation of roads maintenance.  Road's Traffic Telematics  n cities and on highways, information and navigation systems, electronic fee collection, safe and intelligent vehicle and safety s  Road Safety Audit tions of safety assessments during the process of preparations, and of the particular realization of the road network that should	ZK ystems.  KZ I minimize traffic a	4
Principles and method 20DTEL Traffic management in 12BA Schedules of applicate all those who take part 15JBA3	ds of evaluation of roads maintenance.    Road's Traffic Telematics   n cities and on highways, information and navigation systems, electronic fee collection, safe and intelligent vehicle and safety s   Road Safety Audit   tions of safety assessments during the process of preparations, and of the particular realization of the road network that should intrin road traffic. Road safety survey. Application of European Directive 2008/96/EC on road safety infrastructure management.	ZK ystems. KZ minimize traffic a	4 2 accident risks fo

Code of the group: XNDP 13/14

Name of the group: Diplomová práce (obory PL, DS, LA +[ID]) od 13/14 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
11XNDP	Master Thesis Evženie Uglickich	KZ	18	0P+20C+70E	B L	Z
12XNDP	Master Thesis	KZ	18	0P+20C+70E	B L	Z
15XNDP	Master Thesis	KZ	18	0P+20C+70E	L L	Z
16XNDP	Master Thesis	KZ	18	0P+20C+70E	B L	Z
17XNDP	Master Thesis	KZ	18	0P+20C+70E	B L	Z
14XNDP	Master Thesis	KZ	18	0P+20C+70E	B L	Z
20XNDP	Master Thesis	KZ	18	0P+20C+70E	B L	Z
21XNDP	Master Thesis Slobodan Stoji , Miloš Strouhal, Vladimír Socha, Peter Vittek, Iveta Kameníková, Petr Had, Petr Lukeš, Stanislav Pleninger, Petr en k,	KZ	18	(P+20C+70E	L L	Z
22XNDP	Master Thesis Luboš Nouzovský	KZ	18	0P+20C+70E	L L	Z

23XNDP	Master Thesis	KZ	18	0P+20C+70B	L	Z
18XNDP	Master Thesis	KZ	18	0P+20C+70B	L	Z

Characteristics of the courses of this group of Study Plan: Code=XNDP 13/14 Name=Diplomová práce (obory PL, DS, LA +[ID]) od 13/14

11XNDP	Master Thesis	KZ	18
12XNDP	Master Thesis	KZ	18
15XNDP	Master Thesis	KZ	18
16XNDP	Master Thesis	KZ	18
17XNDP	Master Thesis	KZ	18
14XNDP	Master Thesis	KZ	18
20XNDP	Master Thesis	KZ	18
21XNDP	Master Thesis	KZ	18
22XNDP	Master Thesis	KZ	18
23XNDP	Master Thesis	KZ	18
18XNDP	Master Thesis	KZ	18

Code of the group: 4.S.NP 12/13

Name of the group: 4.sem.nav.prez.(obory DS, LA; [PL] + [ID]) od 12/13 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.NP 12/13 Name=4.sem.nav.prez.(obory DS, LA; [PL] + [ID]) od 12/13

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

Name of the block: Semestrální projekt Minimal number of credits of the block: 13

The role of the block: ZP

Code of the group: XN1-4 14/15

Name of the group: Projekty nav.prez.1.-4.sem (obory PL + DS, LA, [BT]) od 14/15

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.

	Name of the course (Name of the many of course	1		1		
Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11XN1	Master Project 1	Z	2	0P+2C+4B	Z	ZP
12XN1	Master Project 1 Martin Jareš, Petr Chmela, Zuzana arská, Dagmar Ko árková, Iva Šturmová, Kristýna Neubergová, Martin Jacura, Jan Kruntorád, Ond ej Trešl,	Z	2	0P+2C+4B	Z	ZP
14XN1	Master Project 1	Z	2	0P+2C+4B	Z	ZP
15XN1	Master Project 1	Z	2	0P+2C+4B	Z	ZP
16XN1	Master Project 1 P emysl Toman	Z	2	0P+2C+4B	Z	ZP
17XN1	Master Project 1 Václav Baroch, Michal Drábek, Alexandra Dvo á ková, Veronika Faifrová, Eliška Glaserová, Rudolf F. Heidu, Tomáš Horák, Vít Janoš, Milan K íž,	Z	2	0P+2C+4B	Z	ZP
18XN1	Master Project 1 Václav Rada, Nela Kr má ová	Z	2	0P+2C+4B	Z	ZP

20XN1	Master Project 1 Ji í R ži ka	Z	2	0P+2C+4B	Z	ZP
21XN1	Master Project 1 Slobodan Stoji , Vladimír Socha, Peter Vittek, Jakub Steiner, Terézia Pilmannová, Jakub Kraus, Andrej Lališ, Jakub Hospodka, Lenka Hanáková,	Z	2	0P+2C+4B	Z	ZP
22XN1	Master Project 1 Michal Frydrýn, Karel Kocián, Luboš Nouzovský, Zden k Svatý, Jakub Nová ek	Z	2	0P+2C+4B	Z	ZP
23XN1	Master Project 1	Z	2	0P+2C+4B	Z	ZP
11XN2	Master Project 2	Z	2	0P+2C+8B	L	ZP
12XN2	Master Project 2 Martin Jareš, Petr Chmela, Zuzana arská, Dagmar Ko árková, Kristýna Neubergová, Martin Jacura, Jan Kruntorád, Ond ej Trešl, David Vodák,	Z	2	0P+2C+8B	L	ZP
14XN2	Master Project 2	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 Václav Baroch, Michal Drábek, Alexandra Dvo á ková, Veronika Faifrová, Rudolf F. Heidu, Tomáš Horák, Vít Janoš, Milan K íž, Olga Mertlová, 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	Z	2	0P+2C+8B	L	ZP
21XN2	Master Project 2	Z	2	0P+2C+8B	L	ZP
22XN2	Master Project 2 Michal Frydrýn, Karel Kocián, Luboš Nouzovský, Zden k Svatý, 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 Martin Jareš, Petr Chmela, Zuzana arská, Dagmar Ko árková, Martin Jacura, Jan Kruntorád, Ond ej Trešl, David Vodák, Tomáš Javo ík,	Z	1	0P+4C	Z	ZP
14XN3	Master Project 3	Z	1	0P+4C	Z	ZP
15XN3	Master Project 3	Z	1	0P+4C	Z	ZP
16XN3	Master Project 3 P emysl Toman, Josef Mik, Michal Cenkner, Josef Svoboda	Z	1	0P+4C	Z	ZP
17XN3	Master Project 3 Václav Baroch, Michal Drábek, Alexandra Dvo á ková, Veronika Faifrová, Eliška Glaserová, Rudolf F. Heidu, Tomáš Horák, Vít Janoš, Milan K íž,	Z	1	0P+4C	Z	ZP
18XN3	Master Project 3	Z	1	0P+4C	Z	ZP
20XN3	Master Project 3	Z	1	0P+4C	Z	ZP
21XN3	Master Project 3 Miloš Strouhal, Terézia Pilmannová	Z	1	0P+4C	Z	ZP
22XN3	Master Project 3 Michal Frydrýn, Karel Kocián, Luboš Nouzovský, Zden k Svatý, Tomáš Mi unek	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 Martin Jareš, Petr Chmela, Zuzana arská, Dagmar Ko árková, Kristýna Neubergová, Martin Jacura, Jan Kruntorád, Ond ej Trešl, David Vodák,	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 Josef Mík, Michal Cenkner	Z	8	0P+4C	L	ZP
17XN4	Master Project 4 Václav Baroch, Michal Drábek, Alexandra Dvo á ková, Veronika Faifrová, Rudolf F. Heidu, Tomáš Horák, Vít Janoš, Milan K íž, Olga Mertlová, 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 , Miloš Strouhal, Vladimír Socha, Peter Vittek, Iveta Kameníková, Petr Had, Petr Lukeš, Stanislav Pleninger, Jakub Steiner,	Z	8	0P+4C	L	ZP
22XN4	Master Project 4 Michal Frydrýn, Karel Kocián, Luboš Nouzovský, Zden k Svatý	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=XN1-4 14/15 Name=Projekty nav.prez.1.-4.sem (obory PL + DS, LA, [BT]) od 14/15

11XN1	Master Project 1	Z	2

12XN1	Master Project 1	Z	2
14XN1	Master Project 1	Z	2
15XN1	Master Project 1	Z	2
16XN1	Master Project 1	Z	2
17XN1	Master Project 1	Z	2
18XN1	Master Project 1	Z	2
20XN1	Master Project 1	Z	2
21XN1	Master Project 1	Z	2
22XN1	Master Project 1	Z	2
23XN1	Master Project 1	Z	2
11XN2	Master Project 2	Z	2
12XN2	Master Project 2	Z	2
14XN2	Master Project 2	Z	2
15XN2	Master Project 2	Z	2
16XN2	Master Project 2	Z	2
17XN2	Master Project 2	Z	2
18XN2	Master Project 2	Z	2
20XN2	Master Project 2	Z	2
21XN2	Master Project 2	Z	2
22XN2	Master Project 2	Z	2
23XN2	Master Project 2	Z	2
11XN3	Master Project 3	Z	1
12XN3	Master Project 3	Z	1
14XN3	Master Project 3	Z	1
15XN3	Master Project 3	Z	1
16XN3	Master Project 3	Z	1
17XN3	Master Project 3	Z	1
18XN3	Master Project 3	Z	1
20XN3	Master Project 3	Z	1
21XN3	Master Project 3	Z	1
22XN3	Master Project 3	Z	1
23XN3	Master Project 3	Z	1
11XN4	Master Project 4	Z	8
12XN4	Master Project 4	Z	8
14XN4	Master Project 4	Z	8
15XN4	Master Project 4	Z	8
16XN4	Master Project 4	Z	8
17XN4	Master Project 4	Z	8
18XN4	Master Project 4	Z	8
20XN4	Master Project 4	Z	8
21XN4	Master Project 4	Z	8
22XN4	Master Project 4	Z	8
23XN4	Master Project 4	Z	8

Name of the block: Compulsory elective courses

Minimal number of credits of the block: 6

The role of the block: PV

Code of the group: Y2-NP 14/15

Name of the group: PVP nav.prez.(DS,ID,LO) 14/15

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
23Y2AE	Acoustics and Electroacoustics in Transportation	KZ	2	2+0	Z	PV
12Y2BM	Safety on The Local Roads	KZ	2	2P+0C	Z	PV
23Y2BP	Security Class Zuzana Kosová	KZ	2	2P+0C	Z	PV

14Y2C1	CATIA I	KZ	2	2P+0C	L	PV
14Y2C2	CATIA II	KZ	2	2P+0C	Z	PV
14Y2CS	Sensitivity of Systems	KZ	2	2P+0C	L	PV
15Y2DN	Transportation Psychology in German Speaking Countries	KZ	2	2P+0C	L	PV
18Y2D2	Dynamics of Transport Routes and Vehicles 2	KZ	2	2+0	L	PV
17Y2FM	Financing in Urban Mass Transportation	KZ	2	2P+0C	Z	PV
11Y2FX	Václav Baroch 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	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
12Y2IS	Urban Networks	KZ	2	2P+0C	Z	PV
14Y2JM	One-Chip Controllers	KZ	2	2P+0C	Z	PV
15Y2JH	Job Hunting in English Lenka Monková	KZ	2	2P+0C	Z	PV
17Y2KI	Capital Investment in Transportation and Telecommunications	KZ	2	2+0	L	PV
16Y2KV	Car Body Design	KZ	2	2P+0C	L	PV
12Y2KS	Rail Transport in Settlements and Regions  Miroslav Veliš	KZ	2	2P+0C	Z	PV
12Y2KE	Landscape Ecology Kristýna Neubergová	KZ	2	2P+0C	Z	PV
21Y2LS	Air Traffic Services	KZ	2	2P+0C+8B	L	PV
11Y2LG	Logics of Engineer's Judgement	KZ	2	2P+0C	L	PV
15Y2MS	Sociology for Managers  Martina Šmidochová	KZ	2	2P+0C	Z	PV
21Y2MK	Marketing of Air Transport Peter Vittek Peter Vittek	KZ	2	2P+0C+8B	Z	PV
12Y2MH	Measurement and Modeling of Traffic Noise	KZ	2	2P+0C	L	PV
18Y2MP	Finite Element Method And Its Application Radek Kolman	KZ	2	2P+0C	L	PV
16Y2MK	Quality Methods for Vehicles	KZ	2	2P+0C	L	PV
12Y2MD	Methods of Traffic Regulation and Prediction Zuzana arská	KZ	2	2P+0C	L	PV
17Y2MS	Microsimulation of Railway Operation  Zden k Michl	KZ	2	2P+0C	Z	PV
17Y2MM	Mobility of Small Towns	KZ	2	2+0	L	PV
21Y2MS	Aerospace Engineering Simulation and Modelling	KZ	2	2P+0C	Z	PV
12Y2MZ	Modernization of Railway Lines and Stations Dagmar Ko árková, Miroslav Veliš	KZ	2	2P+0C	L	PV
17Y2NU	Cost and Benefits of Transport Systems	KZ	2	2+0	L	PV
23Y2NE	Design of Electronic Equipments	KZ	2	2+0	L	PV
14Y2OP	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
16Y2PG	Computer Graphics and Virtual Reality Stanislav Novotný, Petr Bouchner	KZ	2	2P+0C	Z	PV
22Y2PS	Traffic Accidents Computer Simulation and Analysis	KZ	2	2P+0C	L	PV
15Y2PT	Food in Transportation Eva Rezlerová, Petr Musil	KZ	2	2P+0C	L	PV
15Y2PS	Practical Spanish for Transportation, Management and Business	KZ	2	2+0	Z	PV
21Y2PP	Law and Operation in Air Transport Radoslav Zozu ák	KZ	2	2P+0C+8B	L	PV
20Y2PR	Prediction of time series	KZ	2	2P+0C	L	PV
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
17Y2PR	Carriage Processes	KZ	2	2+0	Z	PV
7Y2PS	Case Studies in Transportation	KZ	2	2P+0C	Z	PV
5Y2PU	Publications and Their Creation	KZ	2	2P+0C	Z	PV
2Y2RD	Realization of Transport Buildings Dagmar Ko árková, Martin Höfler, Tomáš Honc	KZ	2	2P+0C	L	PV
7Y2RS	Regional Transport - Mobility of Small Towns	KZ	2	2+0	Z	PV
7Y2RZ	Control of Transport Processes	KZ	2	2P+0C	Z	PV
5Y2SP	Seminar on Political Philosophy	KZ	2	2P+0C	Z	PV
7Y2SJ	Network Timetabling on the Railway Vít Janoš Vít Janoš (Gar.)	KZ	2	2P+0C	L	PV
6Y2ST	Special Technologies in Transport and Telecommunications	KZ	2	2P+0C	L	PV
8Y2SD	Reliability and Diagnostics, Experimental Methods  Daniel Kytý	KZ	2	2P+0C	Z	PV
5Y2SR	Stylistics and Rhetorics	KZ	2	2P+0C	Z	PV
7Y2SG	Systematic Creating of Railway Timetables	KZ	2	2+0	Z	PV
7Y2SK	Urban and Regional Rail Transport System	KZ	2	2P+0C	L	PV
5Y2TS	Technician and Contemporary Society Jan Feit, Eva Rezlerová	KZ	2	2P+0C	L	PV
7Y2TP	Technological Prognoses in Transportation and Telecommunication	KZ	2	2+0	L	PV
0Y2TE	Technology of Electronic Systems	KZ	2	2P+0C	Z	PV
4Y2TU	Telecommunications Systems and Multimedia	KZ	2	2P+0C	Z	PV
6Y2TT	Transportation and Building Technology and Equipment	KZ	2	2P+0C	Z	PV
1Y2TL	Development Trends of Aircraft Construction	KZ	2	2+0	Z	PV
2Y2UD	Sustainable Transportation	KZ	2	2P+0C	L	PV
4Y2UI	Artificial Intelligence	KZ	2	2P+0C+8B	Z,L	PV
0Y2UA	Artificial Neural Networks, Realization and Applications	KZ	2	2P+0C	Z	PV
8Y2UB	Accident Biomechanics and Safety	KZ	2	2P+0C	L	PV
3Y2VZ	Leadership and Human Resource Development	KZ	2	2P+0C	L	PV
1Y2VA	Selected Chapters of Aerodynamics	KZ	2	2P+0C+8B	L	PV
3Y2VS	Negotiation and Cooperation	KZ	2	2+0	Z	PV
8Y2VC	Computational Mechanics in Transportation Radek Kolman	KZ	2	2P+0C	L	PV
3Y2VR	Cope with Risks in Engineering Branches  Danuše Procházková	KZ	2	2P+0C		PV
2Y2VT	High Speed Railways	KZ	2	2P+0C	Z	PV
2Y2ZK	Traffic Calming Zuzana arská	KZ	2	2P+0C	Z	PV
3Y2ZM	Intelligence Means and Methods Miloslav Ku era	KZ	2	2P+0C	Z	PV
	the courses of this group of Study Plan: Code=Y2-NP 14/15 Name	=PVP nav.pr	ez.(DS,	ID,LO) 14/1	5	
3Y2AE	Acoustics and Electroacoustics in Transportation				(Z	2

23Y2AE	Acoustics and Electroacoustics in Transportation	KZ	2
Basic acoustic qua	ntities, properties of acoustic signals. Basic equations in acoustics, method of equivalent circuits. Acoustic impedance	, damping. Acoustic actuators	, loudspeaker
Acoustic sensors, r	microphones. Fundamentals of acoustic signal processing. Acoustics of closed spaces. Fundamentals of acoustics in s	olids. Acoustic problems in tra-	nsport and the
solutions.			
12Y2BM	Safety on The Local Roads	KZ	2
	ad accidents rates, social looses. Collision points, diagrams. Tools and methods for safer road transportation. Crossroads labouts. Pedestrian transport, cyclists. Traffic lights coordination. Transport control and regulation.	from the point of view of safet	y. Psychologic
23Y2BP	Security Class	KZ	2
The most prevalent	t topics include data management, data and text mining applications, terrorism informatics, deception and intent detec	tion, terrorist and criminal soc	ial network
analysis, crime ana	alysis, cyber-infrastructure protection, transportation infrastructure security, and information assurance, among others.		
14Y2C1	CATIA I	KZ	2
Fundaments of wo	rking with CATIA, making basic parts and bodies. Making 2D sketches, geometric stucture, parametric linking, making	adaptive models from 2D ske	tches. Import
and export of made	e parts and bodies. Making assemble and visualization.		
14Y2C2	CATIA II	KZ	2
Extension of basic	course. Modeling compound bodies. Possibility of enumeration, comunications with other systems. Surface x solid bod	lies. Kinematic mechanism. Pr	roject making
and project cooper	ation. Outputs of projects.		
14Y2CS	Sensitivity of Systems	KZ	2
Design of systems	with defined reliability. The impact of changing parameters and subsystems within a system. System sensitivity compu	uting, definition of sensitivity fu	inctions and
matrices and their	usability in system design.		
15Y2DN	Transportation Psychology in German Speaking Countries	KZ	2
Introduction into br	oader view of traffic problems with regard to the work with texts (Physics for drivers, abusing alcohol during driving, ex	haustion, getting of driving lic	ence, children

i i	lynamics of Transport Routes and Vehicles 2	KZ	2
1 -	chicle and transport routes and their influence on the stress and strain components of the vehicle structure or behavior of insport routes. Vibration of systems with a finite number of degrees of freedom. Methods of constant stiffness and constant		=
	ria for the admissibility of oscillation.		
	inancing in Urban Mass Transportation	KZ	2
	nent in Prague and other cities in the world. Building and operation of public tram, bus, and trolleybus networks. Undergroun The nent in small towns. Particularities of investment and operation financing of individual UMT types. Historic and present mo	ŭ	•
1	ingers. Tourism & DMT. UMT typology & Discourse of optimum financing.	dolo or olver illian	omg. Hanoport
11Y2FX F	unctions of Complex Variable	KZ	2
Derivation of complex func Laplace and Z-transformat	tion, holomorphic function, complex exponential series, integration, Cauchy theorem. Taylor series, Laurent series of com	plex variable funct	tion. Basics of
<u> </u>	hysics for Security Branches	KZ	2
1	stances and phenomena at extreme conditions. Grounds of rheology. Physics of Earth's interior. Geophysics. Physics of a		
dengineering branches dire	·	147	•
· ·	'hysical foundation of materials' properties efects influence on properties of materials, stiffness, plasticity, strength, fracture, fatigue, creep, corrosion, effects of envir	KZ	2 on on materials'
behavior are the main disc		ornitionic directionalis	ig on matorialo
	load Transport History	KZ	2
	ne Ancient Age, corridors of main mediveal pathways. Development of road traffic in the modern period, acceleration of ro evelopment of road layout, geometric and construction layers. Beginning of modern road civil engineering. Development o	-	
1 '	syerophient of road layout, geometric and construction layers. Deginning of modern road civil engineering. Development of spirit of spirit of the property of	Toau travelling in	modern penod.
16Y2HP V	ehicle Hygiene	KZ	2
	of vehicles and the influence on man and nature. National and international law related to the hygiene. Noise and vibration		
1	easuring, prevention, elimination. Exhausts - creation, measurement, reduction, non-regular fuels and drives. Ergonomy - si ventilation, air-conditioning, filtration, tiredom.	tting, standing, cor	ntroi, operational
	Irban Networks	KZ	2
	osition of UN as public and technical infrastructure / utillities, metodology of the UN master planning, of UN design, UN co	ordination, UN ins	tallation and UN
	standards of UN, trenchless technologies for UN).	KZ	2
	One-Chip Controllers ecture, embedded peripherals (counters, timers, converters, ports) and their utilisation. Practical tasks are programmed w		2 chips.
	ob Hunting in English	KZ	2
	ctical guide to applying for a job in English. The interview process is mapped out, with the course including skills practise	-	of this process,
	nunting in English. Students will also be introduced to the English vocabulary and phraseology necessary for a successful Eapital Investment in Transportation and Telecommunications	interview.	2
1 -	ent desicion making - long term goals and investment strategies, long temr financing.	1\L	2
16Y2KV C	ar Body Design	KZ	2
1	pad car body, bus car body, and motorcycle as a construction set. Principles of design, production, testing and operation. I		=
	assive safety parts. Ergonomics, HMI, view out of the vehicle, operational extent, view behind the car. Conditioning tools, s d artistic design principles. Practical training.	agrianing function.	Aerodynamics
12Y2KS R	ail Transport in Settlements and Regions	KZ	2
	oment of railway infrastructure in Czech Republic. Arrangement of railway networks and junctions. Suburban railway servic s. Network configuration and operation of tram systems. Special thematic lectures (rail transport in selected countries / re		guration and
	s. Network configuration and operation of train systems. Special thematic fectures (rail transport in selected countries / ref andscape Ecology	KZ	2
1	cape - definition, types, evolution. Landscape systems. Anthropogenic impacts on landscape. Methods using for evaluatin	1	
	ns in landscape ecology. Landscape planning.		
	ir Traffic Services h Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, /	KZ	2 Al History of ATS
1 '	ia. ATS - Model of financing. Training Systém of Air Traffic Controllers. Future development of ATS.	ATT & ACC CONTIO	ii. I iistory of Aro
11Y2LG L	ogics of Engineer's Judgement	KZ	2
1 -	er's judgement, its propositional and predicative logical base. Solutions of logical tasks through the methods of truthfulnes	ss and semantic a	nalysis charts.
	ogical basis for network design for the solution of technical tasks. Sociology for Managers	KZ	2
1	corporation. Corporation and its organization. Corporation and its running - human role and communication. Corporation,		
	ree market economy. Corporate directorship, work groups, adaptation, strife, different roles and positions in corporation.		
1	!arketing of Air Transport "Marketing in air transport" is the management of activities and processes using available marketing tools and processes	KZ	2
	es of goods and services in the aviation industry. In addition to the theoretical foundations of marketing, the lectures prese	-	
and product analysis, crea	tion of marketing strategies and planning.		
	leasurement and Modeling of Traffic Noise	KZ	2
	noise from traffic. Noise from rail transport. Noise from road traffic. Measurement and calculation of noise from rail traffic. delling of traffic noise in the CADNA A.	weasurement and	a calculation of
	inite Element Method And Its Application	KZ	2
	ation of the Finite Element Method. Direct Stiffness Method used in structural mechanics. Evaluation of stiffness matrices		_
1 ' '	ient formulation (bar and beam elements, CST, LST, quadrilateral, tetrahedral and brick elements). Natural coordinates, na on. Numerical integration. Introduction to dynamics. FEM programming.	aturai snape functi	ions and
	Quality Methods for Vehicles	KZ	2
Quality management meth	ods list, customer data acquisition and analysis of customer requirements, QFD, DFM, DFA, DFS. FMEA (Failure mode ef		
(team) design.	Asthodo of Traffia Regulation and Dradiation	KZ	2
1	Methods of Traffic Regulation and Prediction posis, traffic prognosis for large area (calculation of future traffic volumes, calculation of future traffic volumes between areas i	1	2 nthetic methods.
Dasic ways of traffic product			

17Y2MS	Microsimulation of Railway Operation	KZ	2
	acteristics of simulation tools, creation of a simulation model of railway infrastructure, verification of a specific operational con-	-	
•	ructure model and modification to the infrastructure to allow the implementation of the proposed operational concept. Stability	tests and evaluat	ions. Evaluation
	rational concept to delays.	1/7	
17Y2MM  Rasic terms networks of	Mobility of Small Towns of railway and bus lines, alternative forms of regional transport, influence in regional transport in vicinity of big cities, solutions of	KZ   of passenger and t	2 freight transport
	ated to regional transport, passenger transport safety in regions.	n passenger and i	ireight transport
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	ftware application	s usage will be
necessary for successfu	al figuring out. Both simple tasks, where students create own model themselves (e.g. in Matlab), and more complicated problem	ms where profess	ional developed
tools will be applied.			
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	· ·	
-	acteristics on modernized railway lines. Superstructure and substructure on upgraded lines. Designing of railway stations. Brid ets. Technical description of the tranzit corridors.	ges and tunners. I	Development
17Y2NU	Cost and Benefits of Transport Systems	KZ	2
_	their history, externalities and their internalization, public goods, transport funding, assessment of transport constructions and	l l	_
· · · ·	ation, influence of transport constructions on public budgets, relation of transport and economic growth, importance of transport		
23Y2NE	Design of Electronic Equipments	KZ	2
Characteristics and real	lization of semiconductor electronic components, basic electronic devices division. Sources, input and output elements, proce	ss elements. Rea	lization of basic
•	a converters. Analog electronic systems, analog computing. Switching elements, logic circuits, FPGA implementation. Single	chip microcompute	ers and
	n (ORCAD), construction of electronic devices.		
14Y2OP	Object Oriented Programming in Transport	KZ	2
	ation, inheritance, polymorphism, templates, retyping, stream, exceptions, repository, collections, virtual methods and classes	. Problem cases \	wil be chosen
	ation system, discrete event simulation, celular automata simulation and virtual life area.	KZ	
15Y2OZ	Health Protection in Transportation and EU sportation in CR in the past and present. Conditions before 1989 and after, current legislature, future prospects. Harmonisation	1	2 rith other ELL
•	principles of health protection and support in selected EU countries.	or legislation w	in onici Lo
15Y2OF	Specialised French for Transportation and Telecommunications	KZ	2
	iblic transport, railway, air, road and ship transport) and telecommunications terminology. Special focus on independent speak		
16Y2PG	Computer Graphics and Virtual Reality	KZ	2
	d processing of bitmap and vector 2D graphics, 3D virtual scenes and algorithms used for their computerized processing. Adopt	ing skills of work v	vith professional
	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
<u>-</u>	ation, multi body systems and vehicle active safety systems, vehicle slipping, external influence on virtual model, crash tests	evaluation, single-	track vehicle,
	destrian, traffic accident simulation and analysis.	1/7	
15Y2PT	Food in Transportation     raction transportation and foodstuffs. The health risks. Hygienic safeguard. The practical examples from the Czech Republic a	KZ	2
• •	and other railroad equipment. Legislation.	ind from the world	i. The issues of
15Y2PS	Practical Spanish for Transportation, Management and Business	KZ	2
	inication skills, training of correct written expression of formal character, basic technical vocabulary, cultural specifics of the Specific o	l l	
•	t and commerce, business letter.		
21Y2PP	Law and Operation in Air Transport	KZ	2
Development of aviation	n law. International conventions on civil aviation. International organisations and including of the Czech Republic in these organisations	nisations. EU legi	slation and civil
	ate administration and state supervision in matters of civil aviation, in accordance with Act No. 49/1997 Col. Facilitation. Resp	onsibilities of air of	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 stat r general formula of loss function. Calculation and programming environment R. Regression models, basics of linear regressic		
•	sts of linear dependence, selection of input variables.	ni, siiripie regress	sion. Multiple
14Y2PI	Process Information Systems in Transportation	KZ	2
	d usage of transport information systems, e.g. EFC, ePurse and transport check-in systems for public transport with focus on		
	Architecture). Inforamtion systems implementation and operations description in the Czech Republic (technical and process)		
14Y2PJ	C++ Programming Language	KZ	2
OOP philosophy and ba	sics of C++ programming language. Class, object, constructor, destructor, inheritance, abstract class, virtual methods, exception	ns, streams, meth	od and operator
overloading, abstract da	ata type implementation in C++.		
14Y2PH	CAD Interface Programming	KZ	2
	erface programming techniques with the help of LIST and VBA programming languages. Possibilities of proper objects (comm	ands), dialogues,	interfaces, and
	CAD systems. Programming of cooperation with other applications (databases, spread-sheets).	1/7	
11Y2PM	Programming in MATLAB	KZ	2 igning GUU in
Matlab.	of modelling and simulation, description of Matlab environment and its settings, optimization and program code debugging, de	ata muriy and des	igrining GOT III
21Y2PL	Operational Aspects of Aerodromes	KZ	2
	aerodromes. Location of aerodrome and orientation of runways. Requirements for apron. Capacity of airports runways and ter	l l	
	units. Protection against unlawful interference. Local transport connection. Environmental protection.		
17Y2PR	Carriage Processes	KZ	2
	bility. Ordering and contracting of carriage. Intergovernmental conventions on international carriage. Contract on passenger card	_	1
_	ability and rights based on carrying contract. Contractual carrying conditions. Guarantee of carrying contract by more operator	s. Internationally a	accepted
commercial terms (INC	OTERMS). Tariff and calculation of prices.		

17Y2PS Case Studies in Transportation	KZ	2
Simulation expert discussions on the topics - the impact of transport on the environment and the economy, energy, construction of transport infrastru		
lesson presented one current 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, residents, etc.).	1/7	2
15Y2PU Publications and Their Creation	KZ	2 Tuna granhia
Scientific texts types. Footnotes and references. Exploration of facts. Quotations. Formal document layout. Working with information databases. Typog editors - MS Word, Tex/LaTeX. Practical creation of simple scientific documents.	graphic principles	. rypograpnic
	KZ	2
12Y2RD   Realization of Transport Buildings   Transport Buildings   Transport Buildings Types. Project Documentation Types. Building Code. Land Permission and Building Permission Process. Building Process. Project		
17Y2RS Regional Transport - Mobility of Small Towns	KZ	2
Basic terms, networks of railway and bus lines, alternative forms of regional transport, influence in regional transport in vicinity of big cities, solutions of the control of the contro	I	
in regions, activities related to regional transport, passenger transport safety in regions.	n passeriger and	noight transport
17Y2RZ Control of Transport Processes	KZ	2
Theoretical bases, transport system, decomposition, factors influencing control, quality diagnosis, methods of control, systems for decision making si		
telematics.		
15Y2SP Seminar on Political Philosophy	KZ	2
Interpreting of philosophical texts, view of society, state and their system of government.		_
17Y2SJ Network Timetabling on the Railway	KZ	2
Timetable samples. Capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds an		_
circulation planning. Rules of train-diagramm creating. Timetables for more service-levels on the line. Construction slot conflicts between passenger-		-
relations and waiting times, timetables for lines under construction.		
16Y2ST Special Technologies in Transport and Telecommunications	KZ	2
Micro, nano and special technologies, electric arc and its applications, plasma technologies, dipping, beam technologies, electron beams technology	in roduction and	mending of
vehicles, laser and laser technologies, soldering, gluing, ultrasound, diffusion, friction and explosion technologies, micro stoves, gas.		· ·
18Y2SD Reliability and Diagnostics, Experimental Methods	KZ	2
The course is focused on theoretical background and practical experience in the field of reliability of constructions, implementation of diagnostic proce	dures for the dete	ection of material
defects and determination of residual life of structures. For this purpose, non-destructive methods of experimental mechanics (e. g. strain-gauge meas		
optical methods, including electron microscopy, will be used.		
15Y2SR Stylistics and Rhetorics	KZ	2
Basic skills of oral and written expression as a means of human communication. Basic information about speech, articulation, oral and written language	age. Teaching to s	peak well-vocal
organs, voice training. Language semantics, language syntactic and the pragmatic aspect. Creative thought and its oral and written expression. Practic	e - cultivating the	skills of speech.
17Y2SG Systematic Creating of Railway Timetables	KZ	2
Timetable samples. Capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds an	ıd supplements. F	Rolling stock and
crew circulation planning. Rules of train-diagramm creating. Train-diagramm construction in case of more service-levels on the line.		
17Y2SK Urban and Regional Rail Transport System	KZ	2
Factors influencing transport demand, modal-split, traffic flows distribution on public transit network. Line network optimization and configuration. Time	etable designing	and evaluation
accenting integrated periodic timetable. Rolling stock circulation, staff and crew services optimization and their order to rosters. Framework legislation, r	non-barrier effects	and preference
of public transport. Marketing.		
15Y2TS Technician and Contemporary Society	KZ	2
Why to take off a hat in a room and open a door for a lady, are there simple solutions, science vs belief, do we need to know or is it enough to turn on	a PC, it must be	true - it's on the
Internet and in newspapers, what are the sights for, interest in public affairs - a hangover from the past?		
17Y2TP Technological Prognoses in Transportation and Telecommunication	KZ	2
The students will be analysing both the general forecasting studies (NASA, CIA) and forecasting in the segment of transport and telecommunications		
20Y2TE Technology of Electronic Systems	KZ	2
Principle technologies for an effective operation of electronically controlled systems. Maintaining, meassuring, optimization of safety and reliability of	complex systems	. Semiconductor
technologies, printed circuits, assembly operations, interconnection and repairs technologiesusers and operators.		
14Y2TU Telecommunications Systems and Multimedia	KZ	2
New trends in telecommunications namely applied in transport solutions, identification and quantification of telecommunications networks and services	performance bas	ed on redundant
architecture, provissioning of guaranteed service quality, two generations of the handover principles.		
16Y2TT Transportation and Building Technology and Equipment	KZ	2
Transportation and building technology and equipment. Transport of solid and mass material, soil and rock above all. Highway and underground consi	-	
vehicles, description and construction features, delivered mass calculation, economy of operation. Technics and technology of underground constructions are stated as a second construction of the constructio	ons. Terrestrial ve	hicles operation
management methodology (ultrasound, laser, GPS, total stations).		
21Y2TL Development Trends of Aircraft Construction	KZ	2
Historical and nowadays trends. Future scenarios. Space industry. Economy.		
12Y2UD Sustainable Transportation	KZ	2
Sustainable development, definition, history, legal framework. Sustainable development indicators. Sustainable transportation, definition, history, legal	I framework. Prac	tical application
of sustainable development theory, case study.	1/7	
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	—	2
	KZ	
History of neural networks. Basic principles. Comparing the structure of a natural and an artificial neuron. Neural classificators, predictors, compresors,		other specialised
functional blocs and systems. Modelling of neurons. Grossberg's equations. Learning principles. Leyered and Hopfield's nets.	, expanders and c	
functional blocs and systems. Modelling of neurons. Grossberg's equations. Learning principles. Leyered and Hopfield's nets.  18Y2UB Accident Biomechanics and Safety	, expanders and c	2
functional blocs and systems. Modelling of neurons. Grossberg's equations. Learning principles. Leyered and Hopfield's nets.  18Y2UB  Accident Biomechanics and Safety  Anatomy of man. Methods of Medical Diagnostics - RTG, CT, MRI, US. Dynamics of traumatic events. Factors influencing the severity of an accident a	, expanders and c	2 a traffic accident.
functional blocs and systems. Modelling of neurons. Grossberg's equations. Learning principles. Leyered and Hopfield's nets.  18Y2UB  Accident Biomechanics and Safety  Anatomy of man. Methods of Medical Diagnostics - RTG, CT, MRI, US. Dynamics of traumatic events. Factors influencing the severity of an accident a Injuries in road traffic. Pedestrian injuries. Injury in railway and air traffic accidents. Analysis of biomechanical events in accidents and their computations.	, expanders and c	2 a traffic accident.
functional blocs and systems. Modelling of neurons. Grossberg's equations. Learning principles. Leyered and Hopfield's nets.  18Y2UB  Accident Biomechanics and Safety  Anatomy of man. Methods of Medical Diagnostics - RTG, CT, MRI, US. Dynamics of traumatic events. Factors influencing the severity of an accident a Injuries in road traffic. Pedestrian injuries. Injury in railway and air traffic accidents. Analysis of biomechanical events in accidents and their computati treatment and rehabilitation. Protective elements and safety measures in transport.	KZ and the extent of a	2 a traffic accident. rinciples of
functional blocs and systems. Modelling of neurons. Grossberg's equations. Learning principles. Leyered and Hopfield's nets.  18Y2UB  Accident Biomechanics and Safety  Anatomy of man. Methods of Medical Diagnostics - RTG, CT, MRI, US. Dynamics of traumatic events. Factors influencing the severity of an accident a Injuries in road traffic. Pedestrian injuries. Injury in railway and air traffic accidents. Analysis of biomechanical events in accidents and their computati treatment and rehabilitation. Protective elements and safety measures in transport.  23Y2VZ  Leadership and Human Resource Development	KZ Ind the extent of a onal modeling. Pr	2 a traffic accident. rinciples of
functional blocs and systems. Modelling of neurons. Grossberg's equations. Learning principles. Leyered and Hopfield's nets.  18Y2UB  Accident Biomechanics and Safety  Anatomy of man. Methods of Medical Diagnostics - RTG, CT, MRI, US. Dynamics of traumatic events. Factors influencing the severity of an accident a Injuries in road traffic. Pedestrian injuries. Injury in railway and air traffic accidents. Analysis of biomechanical events in accidents and their computati treatment and rehabilitation. Protective elements and safety measures in transport.	KZ Ind the extent of a onal modeling. Pr	2 a traffic accident. rinciples of

21Y2VA	Selected Chapters of Aerodynamics	KZ	2
Physical properties	of real gases, atmosphere, aeronautical applications of external and internal aerodynamics, compressible internal flow, inlet nozz	les and drive nozzle	s, compressible
external flow, supe	rcritical wings and profiles, vertical and oblique shock wave, energy losses, aeronautical aerodynamic profiles of wings, propelle	rs, blades gratings,	lift, drag, polar,
viscosity, laminar a	nd turbulent flow, boundary layer.		
23Y2VS	Negotiation and Cooperation	KZ	2
Negotiation princip	les. Negotiation sense, base, essence. Business and crisis negotiation differences. The "Win-Win" principle. Specification. Credibi	ility. Negotiation beh	avior principles
Negotiation and co	mmand. Team variability. Formal and informal team roles.		
18Y2VC	Computational Mechanics in Transportation	KZ	2
rinciple of virtual	work and variational principles in FEM. Bar shaped, planar and three - dimensional structures in FEM. FEM in statics and in dyn	amics of transporta	tional systems.
Elastic, elastoplast	ic and viscoelastic material. FEM in problems of biomechanics. Numerical analysis of structural parts with programme ANSYS o	n instances.	
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, ensuring the safe systems, ensuring the safe systems, ensuring the secured systems, ensuring the safe systems, ensuring the safe systems, ensuring the secured systems, ensuring the secured systems, ensuring the safe systems, ensuring the secured systems are secured systems.	suring the safe syste	ems of systems
12Y2VT	High Speed Railways	KZ	2
High speed rail (HS	R) transport characteristics and position in transportation system. HSR vehicles types and characteristics and control-command	and signalling syste	m. HSR syster
nteroperability. No	n-adhesion HSR systems. City traffic service by HSR. HSR operating points. HSR worldwide network. HSR routing and traffic co	nception. Specifics	of HSR track
construction and a	eometrical characteristics.		
onen aenen ana g			
	Traffic Calming	KZ	2
12Y2ZK	Traffic Calming calming. Solution of road network organization. Urban road layouts. Psychological and physical obstacles (measures of traffic ca	1	_
12Y2ZK Principles of traffic		1	_
I 2Y2ZK Principles of traffic Traffic calming mea	calming. Solution of road network organization. Urban road layouts. Psychological and physical obstacles (measures of traffic ca	1	_
12Y2ZK Principles of traffic Fraffic calming mea	calming. Solution of road network organization. Urban road layouts. Psychological and physical obstacles (measures of traffic calculus in crossroads. Pedestrian zones. Residential streets and zones.	alming) and their co	mbinations.
12Y2ZK Principles of traffic Traffic calming mea 23Y2ZM History and the pre	calming. Solution of road network organization. Urban road layouts. Psychological and physical obstacles (measures of traffic casures in crossroads. Pedestrian zones. Residential streets and zones.  Intelligence Means and Methods	KZ cedures of collecting	mbinations.  2 and evaluatir

Name of the block: Jazyky

Minimal number of credits of the block: 8

The role of the block: J

Code of the group: JZ-N-14/15

Name of the group: Jazyk nav.1.-4.sem. od 14/15 (pro obory v N3710) 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	Name of the course / Name of the group of courses					
Code	(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	B Z	J
15J2l1	Language - Italian 1 Eva Rezlerová, Irena Veselková	Z	2	0P+2C+10B	B Z	J
15J2N1	Language - German 1 Eva Rezlerová, Martina Navrátilová, Jana Štikarová	Z	2	0P+2C+10B	3 Z	J
15J2R1	Language - Russian 1 Marie Michlová, Eva Rezlerová	Z	2	0P+2C+10B	3 Z	J
15J2S1	Language - Spanish 1 Eva Rezlerová, Nina Hricsina Puškinová	Z	2	0P+2C+10B	3 Z	J
15JBF2	Language - French 2 Eva Rezlerová, Irena Veselková	Z	2	0P+2C+10B	L L	J
15JBI2	Language - Italian 2 Eva Rezlerová	Z	2	0P+2C+10B	L L	J
15JBN2	Language - German 2 Eva Rezlerová, Martina Navrátilová, Jana Štikarová	Z	2	0P+2C+10B	L L	J
15JBR2	Language - Russian 2 Marie Michlová, Eva Rezlerová	Z	2	0P+2C+10B	L L	J
15JBS2	Language - Spanish 2 Eva Rezlerová, Nina Hricsina Puškinová	Z	2	0P+2C+10B	L 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	3 Z	J
15JBS3	Language - Spanish 3 Eva Rezlerová, Nina Hricsina Puškinová	Z	2	0P+2C+10B	3 Z	J
15JBF4	Language - French 4 Eva Rezlerová, Irena Veselková	ZK	2	0P+2C+10B	L L	J

	T				·	
15JBI4	Language - Italian 4 Eva Rezlerová	ZK	2	0P+2C+10B	L	J
15JBN4	Language - German 4 Eva Rezlerová, Martina Navrátilová, Jana Štikarová	ZK	2	0P+2C+10B	L	J
15JBR4	Language - Russian 4 Marie Michlová, Eva Rezlerová	ZK	2	0P+2C+10B	L	J
15JBS4	Language - Spanish 4 Eva Rezlerová, Nina Hricsina Puškinová	ZK	2	0P+2C+10B	L	J
Characteristics of the	courses of this group of Study Plan: Code=JZ-N-14/15 Name=	Jazyk nav 1	-4.sem. c	od 14/15 (	nro obor	v v N3710)
	nguage - French 1	-ouzyk navin	4.00111.0	)	Z	2
	Style. Selection of conversation topics relating to transportation sciences. Developing	perceptive and co	ommunicativ	ve skills, feed	dback skills,	summarising
	uring presentations and meeting minutes, elementary rhetorics of foreign language and	d practical applica	ation, forma	l and technic	al registers	and their use,
language of management.	1. P. 4				7	
	nguage - Italian 1 Style. Selection of conversation topics relating to transportation sciences. Developing	nercentive and co	nmunicativ	o skills foo	Z	2 summarising
	uring presentations and meeting minutes, elementary rhetorics of foreign language an					_
language of management.						
15J2N1 Lai	nguage - German 1				Z	2
	Style. Selection of conversation topics relating to transportation sciences. Developing					_
technical text content, structi language of management.	uring presentations and meeting minutes, elementary rhetorics of foreign language an	d practical applica	ation, forma	and technic	ai registers	and their use,
	nguage - Russian 1				Z	2
l l	Style. Selection of conversation topics relating to transportation sciences. Developing	perceptive and co	ommunicativ	ا ve skills, feed		<del>-</del>
technical text content, structu	uring presentations and meeting minutes, elementary rhetorics of foreign language an	d practical applica	ation, forma	l and technic	cal registers	and their use,
language of management.					_	
l l	nguage - Spanish 1	noveentive and a		e akilla faas	Z	2
	Style. Selection of conversation topics relating to transportation sciences. Developing uring presentations and meeting minutes, elementary rhetorics of foreign language and					•
language of management.	<u> </u>	.,	,		3	,
15JBF2 Lai	nguage - French 2				Z	2
	Style. Selection of conversation topics relating to transportation sciences. Developing					_
technical text content, structi language of management.	uring presentations and meeting minutes, elementary rhetorics of foreign language an	d practical applica	ation, forma	l and technic	cal registers	and their use,
	nguage - Italian 2				Z	2
	Style. Selection of conversation topics relating to transportation sciences. Developing	perceptive and co	ommunicativ	ا ve skills, feed	ı	
technical text content, structo	uring presentations and meeting minutes, elementary rhetorics of foreign language and	d practical applica	ation, forma	and technic	cal registers	and their use,
language of management.						
· ·	nguage - German 2 Style. Selection of conversation topics relating to transportation sciences. Developing	nercentive and co	nmunicati	o skills foo	Z	2 summarising
	uring presentations and meeting minutes, elementary rhetorics of foreign language an					_
language of management.					_	
	nguage - Russian 2				Z	2
	Style. Selection of conversation topics relating to transportation sciences. Developing			•	,	Ü
language of management.	uring presentations and meeting minutes, elementary rhetorics of foreign language an	и ргасисат арриса	alion, ionna	i and technic	ai registers	and their use,
15JBS2 Lai	nguage - Spanish 2				Z	2
Grammatical Structures and	Style. Selection of conversation topics relating to transportation sciences. Developing					•
	uring presentations and meeting minutes, elementary rhetorics of foreign language an	d practical applica	ation, forma	I and technic	al registers	and their use,
language of management.  15JBF3 Lai	nguage - French 3				Z	2
,	ection of conversation and professional topics based on the language level and study fo	ocus at the Facult	y. Improvem	l nent of langu	ı	
and perceptive and commun	icative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge.	ledge in oral and	written form	. Work with	(professional	l) text and its
features. Practice of oral and	•					
	nguage - Italian 3	and at the Fearth		ont of longu	Z	2
	ection of conversation and professional topics based on the language level and study fo nicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowl			_	-	-
features. Practice of oral and					(1	,
15JBN3 Lai	nguage - German 3				Z	2
· · · · · · · · · · · · · · · · · · ·	ection of conversation and professional topics based on the language level and study for			_	-	-
and perceptive and commun features. Practice of oral and	icative skills, vocabulary development. Basic stylistic forms. Presentation of own knowl	ledge in oral and	written form	i. vvork with (	protessional	i) text and its
	nguage - Russian 3				Z	2
	ection of conversation and professional topics based on the language level and study for	ocus at the Facult	y. Improvem	ı nent of langu		
	nicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledges of the control o	ledge in oral and	written form	. Work with	(professional	) text and its
features. Practice of oral and	·			1	7	
	nguage - Spanish 3 ection of conversation and professional topics based on the language level and study fo	ocus at the Facult	v Improvem	ent of langu	Z age structure	2 e knowledge
· · · · · · · · · · · · · · · · · · ·	icative skills, vocabulary development. Basic stylistic forms. Presentation of own knowl			_	-	_
features. Practice of oral and		<u>-</u>				
	nguage - French 4				ZK	2
=	ection of conversation and professional topics based on the language level and study for			_	-	_
and perceptive and commun features. Practice of oral and	licative skills, vocabulary development. Basic stylistic forms. Presentation of own knowl	leage in oral and	written form	i. vvork with (	protessional	i) text and its
	<sub>F</sub> . 000/100/01					

15JBI4	Language - Italian 4	ZK	2
Grammar and stylistics.	Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement	of language struct	ture knowledge
and perceptive and con	nmunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Wo	k with (profession	nal) text and its
features. Practice of ora	and written presentation.		
15JBN4	Language - German 4	ZK	2
Grammar and stylistics.	Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement	of language struct	ture knowledge
and perceptive and con	nmunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Wo	k with (profession	nal) text and its
features. Practice of ora	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	ture knowledge
and perceptive and con	nmunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Wo	k with (profession	nal) text and its
features. Practice of ora	Il 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	ture knowledge
and perceptive and con	nmunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Wo	k with (profession	nal) text and its
features. Practice of ora	al and written presentation.		

# List of courses of this pass:

Code	Name of the course	Completion	Credits
11STS	Stochastic Systems	Z,ZK	4
The subject deals w	ith the problems of mathematical modelling of dynamical systems, estimation od these models and their utilization for predictio	n. The results are illu	strated on
practical transp	portation tasks. Mathematical theory roots from probability and mathematical statistics and they use the methods of the Bayesia	an probabilistic appro	ach.
11THRO	Queuing Theory	ZK	2
•	s, definition, random distribution, and probability. Basic processes, process of revitalisation. Markov process, Markov models, Ke		odel M/M/1
models N	M/M/n. Non-markovian models, model M/C/n, models G/G/n. Models with continuous flow. Service net, examples of Petri net. C	omputer simulation.	
11XN1	Master Project 1	Z	2
11XN2	Master Project 2	Z	2
11XN3	Master Project 3	Z	1
11XN4	Master Project 4	Z	8
11XNDP	Master Thesis	KZ	18
11Y2FX	Functions of Complex Variable	KZ	2
Derivation of complex	x function, holomorphic function, complex exponential series, integration, Cauchy theorem. Taylor series, Laurent series of com	plex variable function	. Basics of
	Laplace and Z-transformation.		
11Y2LG	Logics of Engineer's Judgement	KZ	2
Logical structure of e	ngineer's judgement, its propositional and predicative logical base. Solutions of logical tasks through the methods of truthfulness	s and semantic anal	ysis 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 princip	ole of modelling and simulation, description of Matlab environment and its settings, optimization and program code debugging,	data fitting and desigi	ning GUI in
4004	Matlab.	1/7	2
12BA	Road Safety Audit ons of safety assessments during the process of preparations, and of the particular realization of the road network that should	KZ	_
• • • • • • • • • • • • • • • • • • • •	ons of safety assessments during the process of preparations, and of the particular realization of the road network that should ose who take part in road traffic. Road safety survey. Application of European Directive 2008/96/EC on road safety infrastructur		eni nsks io
12DVUP	Transport and Land - Use Planning	KZ	2
	nental relation and connection between transport and territory, fundamentals of traffic layout. Land - use planning. Influence of t	· · · · · · · · · · · · · · · · · · ·	_
•	ring principles of different transport modes including pedestrian traffic and cycling transport. Traffic calming, parking. Complex to		
12DZP	Transport and Environment	Z	2
This course aims the in	mpact of transport on environment. The accent is put mainly on noise and vibration, emission, barrier effect and energy demand	ls. The noise measur	y is part and
	parcel of this course.		
12IDOS	Integrated Transport Systems	ZK	3
Reasons for building	of integrated transport systems, principle of integration, dividing of integration methods, traffic, infrastructure, technical, organi	zational methods, inte	egration of
	tariff, sales systems, information systems, marketing of system, examples of non-integration.		
12IKOD	Rail Transport Infrastructure	Z,ZK	5
•	eral acceleration, Parameters eduction for transition curve and cant transition, curves without straight, track spacing change. Ra		•
detailed construction	on. Continuous welded rail theory. Substructure, slab track. Tram-train. Interoperability. Noise precautions. Railway lines rational	isation, dispositional	layout of
40114.0	operating points trackages, passenger buildings and forecourts. Sidings, terminals.	7.71/	
12NAP	Design and Operation of Traffic Engineering Facilities	Z,ZK	6
rast and present of the	e tunnel construction and design, technological systems at bridges and tunnels and its design, traffic and safety system, risk analy- durability of facilities.	sis,bridges and tunne	is operation
12TEPR	Theory of Road Traffic Operation	Z,ZK	8
	neters and their measurement, traffic sensors. The concept of capacity analysis. Theoretical foundations and application of simulations and application of simulations and application of simulations.		_
• •	cory of traffic management of intersections, urban areas and highways. Green Wave and priority of public transport. Identification Principles and methods of evaluation of roads maintenance.		
12TKV	The Theory of Pavement Layers in Highway Engineering	Z,ZK	3
	The Theory of Pavement Layers in Highway Engineering tions in highway engineering - material aspects of roads and highways. The course covers evolution of highway engineering sinc	Z,ZK e the begining of the 2	_

	Master Project 1	Z	2
12XN2	Master Project 2	Z	2
12XN3	Master Project 3	Z	1
12XN4	Master Project 4	<u>Z</u>	8
	Master Thesis		_
12XNDP		KZ	18
12Y2BM	Safety on The Local Roads	KZ	2
assification of roa	d accidents rates, social looses. Collision points, diagrams. Tools and methods for safer road transportation. Crossroads from the point of	of view of safety. P	sycholog
	right of way. Roundabouts. Pedestrian transport, cyclists. Traffic lights coordination. Transport control and regulation.		_
12Y2IS	Urban Networks	KZ	2
e importance an	the position of UN as public and technical infrastructure / utilities, metodology of the UN master planning, of UN design, UN coording	nation, UN installa	ation and
	operation (basic technical standards of UN, trenchless technologies for UN).		
12Y2KE	Landscape Ecology	KZ	2
andscape ecolo	gy. Landscape - definition, types, evolution. Landscape systems. Anthropogenic impacts on landscape. Methods using for evaluating I	andscape. Fracta	I geomet
	and its potential applications in landscape ecology. Landscape planning.		
12Y2KS	Rail Transport in Settlements and Regions	KZ	2
	d development of railway infrastructure in Czech Republic. Arrangement of railway networks and junctions. Suburban railway services	_	iration a
opera	tion of metro systems. Network configuration and operation of tram systems. Special thematic lectures (rail transport in selected cour	ntries / regions).	
12Y2MD	Methods of Traffic Regulation and Prediction	KZ	2
ic ways of traffic	prognosis, traffic prognosis for large area (calculation of future traffic volumes, calculation of future traffic volumes between areas (anal	logical and synthe	tic meth
	modal split, traffic distribution to road network). Shock wave in traffic flow. Service levels and their traffic volumes. Acceleration n	oise.	
12Y2MH	Measurement and Modeling of Traffic Noise	KZ	2
	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
	noise from road traffic. Modelling of traffic noise in the CADNA A.		
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 or		1
•	characteristics on modernized railway lines. Superstructure and substructure on upgraded lines. Designing of railway stations. Bridge		
ack geometrical	and realization of projects. Technical description of the tranzit corridors.	3 and turners. De	velopin
12Y2RD		KZ	2
	Realization of Transport Buildings  Types. Project Documentation Types. Building Code. Land Permission and Building Permission Process. Building Process. Project Eco		-
	<u> </u>		
12Y2UD	Sustainable Transportation	KZ	2
stainable develo	oment, definition, history, legal framework. Sustainable development indicators. Sustainable transportation, definition, history, legal fra	mework. Practica	a applica
	of sustainable development theory, case study.		
12Y2VT	High Speed Railways	KZ	2
h speed rail (HS	R) transport characteristics and position in transportation system. HSR vehicles types and characteristics and control-command and s	ignalling system	HSR svs
	on-adhesion HSR systems. City traffic service by HSR. HSR operating points. HSR worldwide network. HSR routing and traffic conce		-
iteroperability. 140	construction and geometrical characteristics.	otion. Opecines of	11017 11
12Y2ZK	<u> </u>	KZ	2
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	Traffic calming measures in crossroads Pedestrian zones Residential streets and zones	ing) and their com	
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14DSIM sic overview of network, capace 14GISS Construction 14XN1 14XN2 14XN3 14XN4 14XNDP 14Y2C1 ndaments of we sesign of system 14Y2CS esign of system 14Y2DP ass, object, ence	Traffic Microsimulation traffic microsimulation models. Introduction to the working environment application. Project processing microsimulation model in urba ity assessment of level intersections, light coordination of level intersections, creating a network of public transport, parking lots, ped Geographical Information Systems of saving format of space-oriented information land-survey and cartography minimum basic tasks of spatial operations principles of Master Project 1 Master Project 2 Master Project 3 Master Project 4 Master Thesis CATIA I  riking with CATIA, making basic parts and bodies. Making 2D sketches, geometric stucture, parametric linking, making adaptive mod and export of made parts and bodies. Making assemble and visualization.  CATIA II  course. Modeling compound bodies. Possibility of enumeration, comunications with other systems. Surface x solid bodies. Kinematic and project cooperation. Outputs of projects.  Sensitivity of Systems s with defined reliability. The impact of changing parameters and subsystems within a system. System sensitivity computing, definition matrices and their usability in system design.  One-Chip Controllers  Ole-Chip Controllers  Object Oriented Programming in Transport apsulation, inheritance, polymorphism, templates, retyping, stream, exceptions, repository, collections, virtual methods and classes. F from microscopic simulation system, discrete event simulation, celular automata simulation and virtual life area.  CAD Interface Programming D interface programming techniques with the help of LIST and VBA programming languages. Possibilities of proper objects (command applications creation in CAD systems. Programming of cooperation with other applications (databases, spread-sheets)	Z In area - creating estrian and bicycle KZ territorial identifice Z Z Z Z KZ KZ els from 2D sketce KZ mechanism. Proj KZ n of sensitivity fun KZ vith the aid of AVI KZ Problem cases will KZ ds), dialogues, interest.	a transpe paths.  e paths.  atranspe paths.  2 attion  2 thes. Imp  2 actions a  2 chips.  2 chips.  2 chips.
14DSIM sic overview of network, capace 14GISS Construction 14XN1 14XN2 14XN3 14XN4 14XNDP 14Y2C1 ndaments of we have a sign of system 14Y2CS esign of system 14Y2DP ass, object, ence 14Y2PH oduction to CAI 14Y2PI	Traffic Microsimulation traffic microsimulation models. Introduction to the working environment application. Project processing microsimulation model in urba ity assessment of level intersections, light coordination of level intersections, creating a network of public transport, parking lots, ped Geographical Information Systems of saving format of space-oriented information land-survey and cartography minimum basic tasks of spatial operations principles of Master Project 1 Master Project 2 Master Project 3 Master Project 3 Master Project 4 Master Thesis CATIA I  rrking with CATIA, making basic parts and bodies. Making 2D sketches, geometric stucture, parametric linking, making adaptive mod and export of made parts and bodies. Making assemble and visualization.  CATIA II  course. Modeling compound bodies. Possibility of enumeration, comunications with other systems. Surface x solid bodies. Kinematic and project cooperation. Outputs of projects.  Sensitivity of Systems s with defined reliability. The impact of changing parameters and subsystems within a system. System sensitivity computing, definition matrices and their usability in system design.  One-Chip Controllers  Ole-Chip Controllers  Object Oriented Programming in Transport apsulation, inheritance, polymorphism, templates, retyping, stream, exceptions, repository, collections, virtual methods and classes. F from microscopic simulation system, discrete event simulation, celular automata simulation and virtual life area.  CAD Interface Programming Dinterface programming techniques with the help of LIST and VBA programming languages. Possibilities of proper objects (command	z In area - creating estrian and bicycle KZ territorial identifice Z Z Z Z KZ KZ els from 2D sketce KZ mechanism. Proj KZ n of sensitivity fun KZ vith the aid of AVI KZ Problem cases will KZ ds), dialogues, into	a transpe paths.  2 paths.

14Y2PJ	C++ Programming Language	KZ	2
- 1	d basics of C++ programming language. Class, object, constructor, destructor, inheritance, abstract class, virtual methods, exceptions, s		1
	overloading, abstract data type implementation in C++.		
14Y2TU	Telecommunications Systems and Multimedia	KZ	2
ew trends in teleco	ommunications namely applied in transport solutions, identification and quantification of telecommunications networks and services per	ormance based o	n redunda
	architecture, provissioning of guaranteed service quality, two generations of the handover principles.		
14Y2UI	Artificial Intelligence	KZ	2
	story of artificial intelligence, knowledge, its representation including frames, state space search, constraints, genetic algorithms, made		
15J2A1	Language - English 1 resentation Skills - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work e	Z	2
		ngagement.	
15J2F1	Language - French 1 tures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills,	∠ foodback skills s	2
	ent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and tecl		
	language of management.	ca. rogiotoro ai	
15J2I1	Language - Italian 1	Z	2
	tures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills,	feedback skills, s	ı ummarisiı
echnical text conte	ent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and techniques of management.	nnical registers ar	nd their us
15J2N1	Language - German 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 tecl language of management.	nnical registers ar	nd their us
15J2R1	Language - Russian 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 tecl language of management.	nnical registers ar	nd their u
15J2S1	Language - Spanish 1	Z	2
	etures 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 techniques of management.		
15JBA2	Language - English 2	Z	2
	resentation Skills - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work e		_
15JBA3	Language - English 3	Z	2
15JBA4 Presentation Skills	Language - English 4 s - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work engagement.Opt	ZK onal courses for	2 certificate
15JBF2	FCE, CAE.  Language - French 2	Z	2
Grammatical Struc	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 techniques are language of management.	feedback skills, s	ummarisir
15JBF3	Language - French 3	Z	2
Grammar and styli	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la	nguage structure	knowledg
and perceptive and	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.	ith (professional)	text and
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		1
-	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.		
15JBI2	Language - Italian 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 tech		
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	_	
	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.		
15JBI4	Language - Italian 4	ZK	2
	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la		knowledg
and perceptive and	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.	ith (professional)	text and
15JBN2	Language - German 2	Z	2
Grammatical Struc	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 tecl		
15JBN3	Language - German 3	Z	2
1000110			
	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la	nguage structure	knowled

			1
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 features. Practice of oral and written presentation.	vith (professional	) text and its
15JBR2	Language - Russian 2	Z	2
	tures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills,	feedback skills,	่ summarising
echnical text conte	ent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and tec language of management.	hnical registers a	and their use
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		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.		_
15JBR4	Language - Russian 4	ZK	2
Grammar and styli	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la	anguage structure	e knowledge
and perceptive and	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.	vith (professional	) text and its
15JBS2	Language - Spanish 2	Z	2
	tures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills,		_
echnical text conte	ent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and tec language of management.	hnical registers a	and their use
15JBS3	Language - Spanish 3	Z	2
•	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la		•
and perceptive and	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v	vith (professional	) text and its
4E IDO4	features. Practice of oral and written presentation.	71/	
15JBS4	Language - Spanish 4	ZK	2
	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lad communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v		
and porcopavo and	features. Practice of oral and written presentation.	viai (proioccional	, toxt and it
15XN1	Master Project 1	Z	2
15XN2	Master Project 2	Z	2
15XN3	Master Project 3	Z	1
15XN4	Master Project 4	Z	8
15XNDP	Master Thesis	KZ	18
15Y2DN	Transportation Psychology in German Speaking Countries	KZ	2
-	roader view of traffic problems with regard to the work with texts (Physics for drivers, abusing alcohol during driving, exhaustion, getting		_
	in traffic, traffic accident, traffic psychology in the internet etc.)		
15Y2HS	Road Transport History	KZ	2
	affic in the Ancient Age, corridors of main mediveal pathways. Development of road traffic in the modern period, acceleration of road to		
st part of 20th cer	ntury. Development of road layout, geometric and construction layers. Beginning of modern road civil engineering. Development of road History of road intercections, bridges and traffic control, development of road signs.	d travelling in mo	odern period
15Y2JH	Job Hunting in English	KZ	2
	es a practical guide to applying for a job in English. The interview process is mapped out, with the course including skills practise for a		
-	ng specifics for job-hunting in English. Students will also be introduced to the English vocabulary and phraseology necessary for a suc	-	-
15Y2MS	Sociology for Managers	KZ	2
	oach to a corporation. Corporation and its organization. Corporation and its running - human role and communication. Corporation, it	s culture and soc	
H	luman's work position in free market economy. Corporate directorship, work groups, adaptation, strife, different roles and positions in	corporation.	
15Y2OF	Specialised French for Transportation and Telecommunications	KZ	2
	ortation (public transport, railway, air, road and ship transport) and telecommunications terminology. Special focus on independent spe	aking and writing	1
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.	i of legislation wi	th other EU
15Y2PS		KZ	2
	Practical Spanish for Transportation, Management and Business communication skills, training of correct written expression of formal character, basic technical vocabulary, cultural specifics of the Spanish for Transportation, Management and Business		
Dovolopinion of	Terminology of transport and commerce, business letter.	samon opeaning	oodiiiiioo.
15Y2PT	Food in Transportation	KZ	2
	Interaction transportation and foodstuffs. The health risks. Hygienic safeguard. The practical examples from the Czech Republic and dining cars, work trains and other railroad equipment. Legislation.		
	diffing cars, work trains and other railroad edulpment, Ledislation.		
he nutrition policy		KZ	2
he nutrition policy	Publications and Their Creation  pes. 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.	KZ aphic principles. 1	2 Typographic
he nutrition policy	Publications and Their Creation  Des. Footnotes and references. Exploration of facts. Quotations. Formal document layout. Working with information databases. Typograted to the footnotes and references. Exploration of facts. Quotations. Formal document layout. Working with information databases. Typograted to the footnotes and references. Exploration of facts and the footnotes and references. Exploration of facts and the footnotes and Their Creation of facts and the footnotes and Their Creation of facts and the footnotes and Their Creation of facts and the footnotes and references. Exploration of facts. Quotations. Formal document layout. Working with information databases. Typograted footnotes and references. Exploration of facts. Quotations. Formal document layout. Working with information databases. Typograted footnotes and references. Exploration of facts are considered for facts. Provided footnotes and the facts are considered for facts		1
15Y2PU Scientific texts typ  15Y2SP	Publications and Their Creation  Des. Footnotes and references. Exploration of facts. Quotations. Formal document layout. Working with information databases. Typograted to editors - MS Word, Tex/LaTeX. Practical creation of simple scientific documents.  Seminar on Political Philosophy  Interpreting of philosophical texts, view of society, state and their system of government.	aphic principles. T	Typographic 2
15Y2PU Scientific texts typ 15Y2SP 15Y2SR	Publications and Their Creation  Des. Footnotes and references. Exploration of facts. Quotations. Formal document layout. Working with information databases. Typograted editors - MS Word, Tex/LaTeX. Practical creation of simple scientific documents.  Seminar on Political Philosophy  Interpreting of philosophical texts, view of society, state and their system of government.  Stylistics and Rhetorics	aphic principles. T	Typographic 2 2
15Y2PU Scientific texts typ  15Y2SP  15Y2SR asic skills of oral	Publications and Their Creation  Des. Footnotes and references. Exploration of facts. Quotations. Formal document layout. Working with information databases. Typograted to editors - MS Word, Tex/LaTeX. Practical creation of simple scientific documents.  Seminar on Political Philosophy  Interpreting of philosophical texts, view of society, state and their system of government.	KZ  KZ  Teaching to spe	Typographic 2 2 ak well-voca
15Y2PU Scientific texts typ 15Y2SP 15Y2SR asic skills of oral	Publications and Their Creation  Des. Footnotes and references. Exploration of facts. Quotations. Formal document layout. Working with information databases. Typograted editors - MS Word, Tex/LaTeX. Practical creation of simple scientific documents.  Seminar on Political Philosophy  Interpreting of philosophical texts, view of society, state and their system of government.  Stylistics and Rhetorics  and written expression as a means of human communication. Basic information about speech, articulation, oral and written language	KZ  KZ  Teaching to spe	Typographic 2 2 ak well-voca
15Y2PU Scientific texts typ 15Y2SP 15Y2SR asic skills of oral rgans, voice trainin	Publications and Their Creation  bes. 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.  Seminar on Political Philosophy Interpreting of philosophical texts, view of society, state and their system of government.  Stylistics and Rhetorics  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 -	KZ  KZ  Teaching to spe cultivating the ski	Typographic  2  2 ak well-voca Ils of speech

Design of personnenten which as examples on function. Namisting and user demands, Weinbed dynamics. Perguished nystems. Design process, knot covered to expense and window of the control of control o	INPLIE	Principles of Vehicle Design	ZK	2
which structure. Evaluation of varient concepts. Design phases. Reliability, technological aspects etc.  16XNI2	-	Principles of Vehicle Design  wrighted according to its usage and function Marketing and user demands Vehicle dynamics. Propulsion systems, Design pro-		2
16KNI	200igii oi tialispo		coo, ranodonal u	.oo.gri and
Master Project 2	16XN1		Z	2
Master Project 3		•		
MASHET Project 4				
16X2HP				
TeVZ   Variety   Vehicle Hygiene   Vehicle Hygiene   Vehicle Hygiene   Note and vibrations - sources, restoro, propagative values, ways of measuring, prevention, elimination, Enhances - creation, measurement, reduction, non-regular fuels and drives. Eigenorry—string, standing, control, operations and properties of the properties of th		•		_
insistors and orgonomy of vehicles and the influence on man and nature. Natural and international law related to the byspine. Notes and vehicles records, greated, condition - heating, ventilation, air-conditioning, filtration, trecom.  16Y2KV				
yeared values, ways of measuring, prevention, elimination, Enhancis - creation, measurement, reduction, non-requisit fuels and drives. Ergonomy- sitting, standing, control, openits reach. Confidence in June 1972 (VI)  Car Body Design Personal care body, high-lead car body, but car body, and motorcycle us a construction and principles of design, production, testing and openation. Materials used for care of possible safety parts. Ergonomos, Mall, view out of the vehicle, operations design, hoped to the car. Conditioning tools, signating function. Aerodysen of the care body begins and without design principles. Principle training and operation. Materials used for care of the care body begins and without a body begins and without a body begins and without the principle safety. We bend the car. Conditioning tools, signating function. Aerodysen of the care body begins and without the care of the care body begins and without the care of the care o		• •		_
reach. Carditation - hearing, wentation, age-conditioning, filtration, instruction.  For SYZKV  Personal cars body, high-lead cut hody, bus car body, and motorcycle as a construction sate Principles of design, production, testing and operation. Materials: used for cur body motorcutor, and wand passave safety parts. Ergonnoics, HML view do of the verifice, operational seatest, view behind the car. Conditioning tools, agrinaling function. Aero-dynamic principles of creations are produced in the cut body. Design and artistic design principles. Practical training.  16Y2PM  Couglity Methods for Vehicles  Couglity Methods for Vehicles  Couglity Methods for Vehicles  (Couglity Methods for Vehicles)  Couglity Methods for Vehicles  (Couglity Methods for Vehicles)  (Couglity Methods for Vehi	•	,		
Personal cars body, high-hold car body, bus car body, and motorcycle as a construction sate Principles of design, production, sesting and operation. Materials used for car body motorculan can be a produced as the production of the car body. Pedian and artistic design principles. Practical standing.  16Y2MK Quality Methods for Vehicles  16Y2MK Quality Methods for Vehicles  16Y2PG Computer data acquisition and analysis of customer requirements, GPD, DRA, DRS, PMEA (Failure mode effect analysis). Elements of participation of the car body methods and the production of the car body methods of customer requirements, GPD, DRA, DRS, PMEA (Failure mode effect analysis). Elements of participation of the car body methods of customer requirements, GPD, DRA, DRS, PMEA (Failure mode effect analysis). Elements of participation of the car body methods of customer requirements, GPD, DRA, DRS, PMEA (Failure mode effect analysis). Elements of participation of the car body methods of the computer trade of the computer trade processing of bitmap and vector 20 pagnics, 3.0 virtuals secents and deportment and of the computer trade processing of bitmap and vector 20 pagnics, 3.0 virtuals secents and deportment angle and pagnics and freewate looks for creation and processing of 20, 3.0 and interactive graphics, and basics of programming languages VRML and graphic libraries (OpenCL).  16Y2ST Special Technologies in Transportation and Building Technologies, depend and explaination technologies, design and explaination and sequence of the complex of sequence and explaination and explaination extendiogies, designing, the complex of the explaination and sequence and explaination and explaination explaination a				, ,
Personal case body, high-based car body, bas car body, and motorcycle as a construction self-morphes of design, production, setting and operation. Materials used for car body morturous, notine or passive safety parts. Exponentics. High, view out of the verifies (personal principles. Practical staining.  16Y2MK Quality Methods for Vehicles  Reamy design.  16Y2PG Compared that a construction and analysis of outsides for vehicles.  16Y2PG Compared that a construction of the car body. Design and artistic design principles. Practical staining.  16Y2PG Compared that a construction of the car body. Design and artistic design principles. Practical staining.  16Y2PG Compared that a construction of the car body. Design and well analysis of crustors and processing of bitmap and verificial operations. On the car body that the car body to the car	16Y2KV	Car Body Design	KZ	2
16Y2MK Quality Methods for Vehicles  Quality Methods for Vehicles  (Quality Methods for Vehic	Personal cars be		laterials used for	car body
16Y2PG Computer Graphics and Virtual Reality  16Y2PG Solidary Computer Graphics And Virtual Reality  16Y2PG Transportation and Building Technology beam technologies, electron beams technology in roduction and mercing vehicles, learned building Individual Reality Computer Graphics And Virtual Reality  16Y2PG Transportation and Building Technology and Equipment Transport Solidary Computer Graphics And Virtual Reality  16Y2PG Transportation and Building Individual Reality  16Y2PG Transportation and Building Technology and Equipment Computer Virtual Reality  16Y2PG Transport Solidary Solid	construction. Active	and passive safety parts. Ergonomics, HMI, view out of the vehicle, operational extent, view behind the car. Conditioning tools, significant	aling function. Ae	rodynamic
salety menagement methods list, customer data acquisition and analysis of customer requirements, OPD, DFA, DFS, FMEA (Failure mode effect analysis). Elements of part (seem) design.  16Y2PG Computer (Graphics and Virtual Reality (with the composition of particular processing of bitmap and victor 20 graphics, 30 virtual source and adjustments used for their computerized processing, Adopting abilities of work with profession and freewere tools for creation and processing of 2D, 3D and interactive graphics, and basics of programming language VRML and graphic libraries (OpenCL).  16Y2ST Special Technologies in the composition of the comp		of the car body. Design and artistic design principles. Practical training.		
Television design	-			2
16Y2PG   Computer Graphics and virtual Reality morphisms of maintenance in computer and processing of bitmap and viorit 27 graphics. 30 vinual scene and algorithms used for their computerized processing. Adopting skills of work with profession and freewate tools for creation and processing of 2D, 3D and internactive graphics, and basics of programming language VPML and graphic libraries (popenCL).  16Y2ST   Special Technologies in Internactive graphics, and basics of programming language VPML and graphic libraries (popenCL).  16Y2TT   Special technologies, electric nic and its applications, platean technologies, dispeng beam retarnologies, electron hearn activation and mending vehicles, leaver and laser and laser technologies, coloring, glang, unique control of the company of the coloring platea technologies, dispengion to the coloring platea technologies, electron beams and coloring platea.  16Y2TT   Transportation and Building technology and equipment Transport selected and mass materials all and root advocate all highway and underground construction electrons, elevered mass, elever	luality managemer		analysis). Elemer	nts of paral
inciples of creation and processing of bitmap and voctor 2D graphics, 3D virtual scenes and algorithms used for their computativizal processing. Adopting shills of work with profession and framework tools for creation and processing of 2D, 3D and inferentively agraphics, and basics of programmating flanguage VRML in propriet between (Coppendix).  16Y2ST Special Technologies in Transport and Telecommunications  Mikror, name and special technologies, electric are and its applications, pleasms technologies, electron bearns technologies, micro stores, gas.  16Y2TT Transportation and processing of bitms and management in the propriet i				_
and freeware tools for creation and processing of 20, 3D and interactive graphics, and basics of programming language VRML and graphs: libraries (OpenGL).  16Y2ST Special Enchaologies in Enchaologies in Transport and Telecommunications KZ 2  Millors, nano and special technologies, electric are and its applications, pleasms enchaologies, disping, beam technologies, allocation beams technologies, micro stoves, gas.  16Y2TT Transportation and building technology and equipment Transport of solid and mass material, soil and took above sit Highway and underground constructions. Transport and the properties of the propertie		·		1
16Y2ST   Special Technologies in Transport and Telecommunications   KZ   2   2	•			-
Micro, nano and special technologies, electric are and its applications, plasma technologies, disping, beam technologies, electron beams technology in roduction and mending vehicles, lacer and lass rethnologies, solidering, diginal, utilissoud, distance, inclina and eduptions inchinologies, micro stores, gais.  16Y2TT Transportation and Building Technology and Equipment Transportation and Building Technology and Equipment Transportation and building technology and equipment Transport solidates and and rook above all Highway and underground constructions. Transports surface history, and and the properties of solid and mass anteriors lost and rook above all Highway and underground constructions. Transport surface history and technology of underground constructions. Transport surface history and technology of underground constructions. Transport surface history and technology of underground constructions. Transport surface the expect of the properties and technology of underground constructions. Transport surface and technology of underground constructions. Transport and technology of underground constructions. Transport and technology of the surface and tec				
vehicles, laser and laser technologies, soldering, gluling, ultrasound, diffusion, friction and explosion technologies, micro stows, gas.  16Y2TT Transportation and building technology and equipment Transport of solid and mass material, soil and rock above all, Highway and underground constructions. Transport surface hickes, description and construction features, delivered mass calculation, economy of portation. Technica and technology of underground constructions. Transport surface hickes, description and construction features, delivered mass calculation, economy of operation. Technica and technology of underground constructions. Transport surface management methodology (ultrasound), laser, GPS, total stations).  17MGD Management of Transport Systems Functions, processes and systems of management in transport, organisational structures, strategy, social responsibility, soft skills.  17TZE Technology of Railway Transport Transport Systems Functions, processes and systems of management in transport, organisational structures, strategy, social responsibility, soft skills.  17TXN1 Technology of Railway Transport Transport Systems Transportation and Transport Systems Transportation and Transportation of public transportation of public transportation and Transportation and Transportation and Transportation and Technology Samp; choice of optimum linarching. Tryzki Capital Investment in Transportation and Telecommunications Transportation and Telecommunications Transport Systems and their history, external management in regional transport in deliverable of perational concept to the prein infrastructure model of an multiplication to sensitivity of		· · · · · · · · · · · · · · · · · · ·		II .
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hickes, description and construction features, delivered mass calculation, economy of operation. Technics and technology of underground constructions. Terrestrial vehicles operations are considered to the control of				_
Management of Transport Systems   Z,ZK   3				
Functions, processes and systems of management in transport, organisational structures, strategy, social responsibility, soft skills.    TTZE   Technology of Railway Transport   ZK   2   2   2   2   2   2   2   2   2		management methodology (ultrasound, laser, GPS, total stations).		
Trize Trize Technology of Railway Transport Technology of Railway Transport Trachinology of Railway Trachinology Railway R	17MGD	Management of Transport Systems	Z,ZK	3
rack line capacity assesment, model operational situation with a system running time between IPT-nodes, calculation of traction energy savings compared with infrastructure cor or 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 troper or 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 troper or designing of fleeting crossing station, solving of capacity freight to paths, guidelines for centralised operational traffic control and management.  17XN1		Functions, processes and systems of management in transport, organisational structures, strategy, social responsibility, soft sk	cills.	•
or 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 tropaths, guidelines for centralised operational traffic control and management.  17XN1	17TZE	Technology of Railway Transport	ZK	2
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17Y2RZ Control of Transport Processes KZ 2 heoretical bases, transport system, decomposition, factors influencing control, quality diagnosis, methods of control, systems for decision making support, risk of decision making	17Y2FM JMT history and de JMT types. UMT d  17Y2KI  17Y2MM lasic terms, networe  17Y2MS Introduction to the daptation of the inf  17Y2NU Irransport systems MCA, CA, transp 17Y2PR larrier's commercial Forwarding cont  17Y2PS Simulation expert collesson presented	Master Project 4  Master Thesis  Financing in Urban Mass Transportation  evelopment in Prague and other cities in the world. Building and operation of public tram, bus, and trolleybus networks. Underground evelopment in small towns. Particularities of investment and operation financing of individual UMT types. Historic and present models inspection and blind passengers. Tourism & UMT. UMT typology & choice of optimum financing.  Capital Investment in Transportation and Telecommunications  Financial market, investment desicion making - long term goals and investment strategies, long term financing.  Mobility of Small Towns  ks of railway and bus lines, alternative forms of regional transport, influence in regional transport in vicinity of big cities, solutions of pain regions, activities related to regional transport, passenger transport safety in regions.  Microsimulation of Railway Operation  characteristics of simulation tools, creation of a simulation model of railway infrastructure, verification of a specific operational concept rastructure 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.  Cost and Benefits of Transport Systems  and their history, externalities and their internalization, public goods, transport funding, assessment of transport constructions and syort taxation, influence of transport constructions on public budgets, relation of transport and economic growth, importance of transport carriage. Intergovernmental conventions on international carriage. Contract on passenger carriage act. Liability and rights based on carrying contract. Contractual carrying conditions. Guarantee of carrying contract by more operator commercial terms (INCOTERMS). Tariff and calculation of prices.  Case Studies in Transportation  iscussions on the topics - the impact of transport on the environment and the economy, energy, construction of transport infrastructue one current and the	Z  KZ  KZ  building and oper of the service of UMT financing of UMT financ	1 1 8 18 2 ration. Oth g. Transpool 2 2 ght transpool 2 2 ght transpool 2 2 ght carriag accepted 2 2 nts will earris, carrier 2
heoretical bases, transport system, decomposition, factors influencing control, quality diagnosis, methods of control, systems for decision making support, risk of decision making	17Y2FM  JMT history and de  JMT types. UMT d  17Y2KI  17Y2MM lasic terms, networe  17Y2MS Introduction to the daptation of the inf  17Y2NU  Transport systems  MCA, CA, transp  17Y2PR larrier's commercial Forwarding cont  17Y2PS  Simulation expert collesson presented	Master Project 4  Master Thesis  Financing in Urban Mass Transportation  evelopment in Prague and other cities in the world. Building and operation of public tram, bus, and trolleybus networks. Underground evelopment in small towns. Particularities of investment and operation financing of individual UMT types. Historic and present models inspection and blind passengers. Tourism & amp; UMT. UMT typology & amp; choice of optimum financing.  Capital Investment in Transportation and Telecommunications Financial market, investment desicion making - long term goals and investment strategies, long term financing.  Mobility of Small Towns  ks of railway and bus lines, alternative forms of regional transport, influence in regional transport in vicinity of big cities, solutions of pain regions, activities related to regional transport, passenger transport safety in regions.  Microsimulation of Railway Operation  characteristics of simulation tools, creation of a simulation model of railway infrastructure, verification of a specific operational concept rastructure 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.  Cost and Benefits of Transport Systems  and their history, externalities and their internalization, public goods, transport funding, assessment of transport constructions and syort taxation, influence of transport constructions on public budgets, relation of transport and economic growth, importance of transport taxation, influence of transport constructions on public budgets, relation of transport and economic growth, importance of transport act. Liability, Ordering and contracting of carriage. Intergovernmental conventions on international carriage. Contract on passenger carriage act. Liability and rights based on carrying contract. Contractual carrying conditions. Guarantee of carrying contract by more operator commercial terms (INCOTERMS). Tariff and calculation of prices.  Case Stu	Z  KZ  KZ  building and oper of the service of UMT financing of UMT financ	1 1 8 18 2 ration. Oth g. Transpool 2 2 ght transpool 2 2 ght transpool 2 2 ght carriag accepted 2 2 nts will earris, carrier 2
	17Y2FM JMT history and de JMT types. UMT d  17Y2KI  17Y2MM asic terms, networ  17Y2MS introduction to the daptation of the inf  17Y2NU Transport systems MCA, CA, transp 17Y2PR carrier's commercial Forwarding cont  17Y2PS Simulation expert collesson presented  17Y2RS asic terms, networ	Master Project 4  Master Thesis  Financing in Urban Mass Transportation  evelopment in Prague and other cities in the world. Building and operation of public tram, bus, and trolleybus networks. Underground in the world and present models inspection and blind passengers. Tourism & Development in small towns. Particularities of investment and operation financing of individual UMT types. Historic and present models inspection and blind passengers. Tourism & Development in International UMT typology & Development in Strategies, long term financing.  Capital Investment desicion making - long term goals and investment strategies, long term financing.  Mobility of Small Towns  Kes of railway and bus lines, alternative forms of regional transport, influence in regional transport in vicinity of big cities, solutions of perin regions, activities related to regional transport, passenger transport safety in regions.  Microsimulation of Railway Operation  Characteristics of simulation tools, creation of a simulation model of railway infrastructure, verification of a specific operational concept reastructure 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.  Cost and Benefits of Transport Systems  and their history, externalities and their internalization, public goods, transport funding, assessment of transport constructions and syon taxation, influence of transport constructions on public budgets, relation of transport and economic growth, importance of transport acconstructions on public budgets, relation of transport and economic growth, importance of transport acconstructions on public budgets, relation of transport and economic growth, importance of transport accommercial terms (INCOTERMS). Tariff and calculation of prices.  Case Studies in Transportation  iscussions on the topics - the impact of transport on the environment and the economy, energy, construction of transport infrastructur one	Z Z KZ KZ KZ building and oper of the set of UMT financing of UMT financin	1 1 8 18 2 ration. Oth g. Transpool 2 ght transpool 2 2 ght transpool 2 2 ght carriag accepted 2 2 ght carriag accepted 2 2 ght transpool 2 gh
telematics.	17Y2FM UMT history and de UMT types. UMT d  17Y2KI  17Y2MM Basic terms, networe  17Y2MS Introduction to the daptation of the inf  17Y2NU Transport systems MCA, CA, transp 17Y2PR Carrier's commercial Forwarding cont  17Y2PS Simulation expert collesson presented  17Y2RS Basic terms, networe  17Y2RS Basic terms, networe	Master Project 4  Master Thesis  Financing in Urban Mass Transportation evelopment in Prague and other cities in the world. Building and operation of public tram, bus, and trolleybus networks. Underground evelopment in small towns. Particularities of investment and operation financing of individual UMT types. Historic and present models inspection and blind passengers. Tourism & UMT. UMT typology & choice of optimum financing.  Capital Investment in Transportation and Telecommunications Financial market, investment desicion making - long term goals and investment strategies, long term financing.  Mobility of Small Towns  ks of railway and bus lines, alternative forms of regional transport, influence in regional transport in vicinity of big cities, solutions of pain regions, activities related to regional transport, passenger transport safety in regions.  Microsimulation of Railway Operation  characteristics of simulation tools, creation of a simulation model of railway infrastructure, verification of a specific operational concept restructure 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.  Cost and Benefits of Transport Systems  and their history, externalities and their internalization, public goods, transport funding, assessment of transport constructions and syort taxation, influence of transport constructions on public budgets, relation of transport and economic growth, importance of transport taxation, influence of transport constructions on public budgets, relation of transport and economic growth, importance of transport act. Liability and rights based on carrying contract. Contractual carrying conditions. Guarantee of carrying contract by more operator commercial terms (INCOTERMS). Tariff and calculation of prices.  Case Studies in Transportation  iscussions on the topics - the impact of transport on the environment and the economy, energy, construction of transport	Z Z KZ KZ KZ building and oper of the sof UMT financing of UMT financing o	1 1 8 18 2 ration. Oth g. Transpool 2 2 ght transpool 2 2 ght carriag accepted 2 2 ght carriag accepted 2 2 ght transpool 2 2

17Y2SG	Systematic Creating of Railway Timetables	KZ	2
Timetable samples	. Capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds and s crew circulation planning. Rules of train-diagramm creating. Train-diagramm construction in case of more service-levels on the	• •	ng stock and
17Y2SJ	Network Timetabling on the Railway	KZ	2
	es. Capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds and		_
· · · · · · · · · · · · · · · · · · ·	g. 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.		
17Y2SK	Urban and Regional Rail Transport System	KZ	2
Factors influencing	g transport demand, modal-split, traffic flows distribution on public transit network. Line network optimization and configuration. Timeta	able designing an	d evaluation
accenting integrate	d periodic timetable. Rolling stock circulation, staff and crew services optimization and their order to rosters. Framework legislation, non	-barrier effects an	d preference
47) (OTD	of public transport. Marketing.	1/7	
17Y2TP	Technological Prognoses in Transportation and Telecommunication	KZ	2
	e students will be analysing both the general forecasting studies (NASA, CIA) and forecasting in the segment of transport and telecor		1
18GES	Geomechanics and Foundation Engineering  Ir, water flow in the soil, basic of the soil mechanic, mechanic of the soil mass, stress in the soil, landslide and their rehabilitation, me	Z,ZK	4
	is, water now in the soil, basic of the soil mechanic, mechanic of the soil mass, stress in the soil, randstide and their renabilitation, mechanically and their design, abutment walls, breast walls, sheeting structures, improvement of the soil, modern method of the subsoil bearing		
	improvement (geotextile, geogrids, anchored prefabticated elements), EN 1997-2.	capacity and cicp	o olazılı,
18TAM	Theoretical and Applied Mechanics	ZK	2
	theory of plasticity. Plasticity conditions. Elastoplastic and plastic state of body. Reliability and durability of structures. The stress and s		the notch.
Stress intensity fa	ctor. Fracture toughness. Energy methods of linear fracture mechanics. Crack driving force. Opening the crack. Fatigue properties of t	he material. Fatig	ue process.
	Dimensioning of fatigue.		
18TIK	Theory of Engineering Structures	Z,ZK	4
	upon the knowledge gained in basic mechanics courses in bachelor study (especially Statics and Elasticity) in the field of mathematica	•	
is placed on plan	e and axisymmetric problems, as well as on the calculation of stress and strain in plates and shells. Students are further acquainted v behavior of subsoil used in the design of line structures.	ith methods of m	odeling the
18XN1	Master Project 1	Z	2
	,		2
18XN2	Master Project 2	Z	2
18XN3	Master Project 3	Z	1
18XN4	Master Project 4	Z	8
18XNDP	Master Thesis	KZ	18
18Y2D2	Dynamics of Transport Routes and Vehicles 2	KZ	2
=	in the vehicle and transport routes and their influence on the stress and strain components of the vehicle structure or behavior of traff and transport routes. Vibration of systems with a finite number of degrees of freedom. Methods of constant stiffness and constant com-		=
models of verticles	of structural systems. Criteria for the admissibility of oscillation.	ipilarice. Dynamic	Calculations
18Y2FZ	Physical foundation of materials' properties	KZ	2
-	lattice defects influence on properties of materials, stiffness, plasticity, strength, fracture, fatigue, creep, corrosion, effects of environm		1
,	behavior are the main discussed topics.	3	
18Y2MP	Finite Element Method And Its Application	KZ	2
Basic mathemat	ical formulation of the Finite Element Method. Direct Stiffness Method used in structural mechanics. Evaluation of stiffness matrices for	or the basic eleme	ents using
variational prin	ciples. Element formulation (bar and beam elements, CST, LST, quadrilateral, tetrahedral and brick elements). Natural coordinates, na	atural shape funct	ions and
	isoparametric representation. Numerical integration. Introduction to dynamics. FEM programming.		T
18Y2SD	Reliability and Diagnostics, Experimental Methods	KZ	2
	sed on theoretical background and practical experience in the field of reliability of constructions, implementation of diagnostic procedur		
detects and determ	ination of residual life of structures. For this purpose, non-destructive methods of experimental mechanics (e. g. strain-gauge measure	ment, pnotoeiasti	cimetry) and
18Y2UB	optical methods, including electron microscopy, will be used.  Accident Biomechanics and Safety	KZ	2
	Accident Biomechanics and Salety  ethods of Medical Diagnostics - RTG, CT, MRI, US. Dynamics of traumatic events. Factors influencing the severity of an accident and		1
=	raffic. Pedestrian injuries. Injury in railway and air traffic accidents. Analysis of biomechanical events in accidents and their computation		
,	treatment and rehabilitation. Protective elements and safety measures in transport.	3	
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 dynamic	s of transportation	nal systems
Elastic,	elastoplastic and viscoelastic material. FEM in problems of biomechanics. Numerical analysis of structural parts with programme AN	SYS on instances	S
20DTEL	Road's Traffic Telematics	ZK	4
	management in cities and on highways, information and navigation systems, electronic fee collection, safe and intelligent vehicle and		
20XN1	Master Project 1	Z	2
20XN2	Master Project 2	Z	2
20XN3	Master Project 3	Z	1
20XN4	Master Project 4	Z	8
	Master Thesis	KZ	18
20XNDP		KZ	2
20XNDP 20Y2PR	Prediction of time series		RMSE, naive
20Y2PR Introduction to time	series prediction, meaning of prediction, basics of quantitative prediction. Methods for predictive quality evaluation, descriptive statistic		
20Y2PR Introduction to time	series prediction, meaning of prediction, basics of quantitative prediction. Methods for predictive quality evaluation, descriptive statisticition for general formula of loss function. Calculation and programming environment R. Regression models, basics of linear regression		
20Y2PR Introduction to time prediction, predic	series prediction, meaning of prediction, basics of quantitative prediction. Methods for predictive quality evaluation, descriptive statisticition for general formula of loss function. Calculation and programming environment R. Regression models, basics of linear regression regression, statistical tests of linear dependence, selection of input variables.	, simple regression	on. Multiple
20Y2PR Introduction to time prediction, prediction	series prediction, meaning of prediction, basics of quantitative prediction. Methods for predictive quality evaluation, descriptive statistical tion for general formula of loss function. Calculation and programming environment R. Regression models, basics of linear regression regression, statistical tests of linear dependence, selection of input variables.  Technology of Electronic Systems	, simple regression	on. Multiple
20Y2PR Introduction to time prediction, prediction	series prediction, meaning of prediction, basics of quantitative prediction. Methods for predictive quality evaluation, descriptive statistical tion for general formula of loss function. Calculation and programming environment R. Regression models, basics of linear regression regression, statistical tests of linear dependence, selection of input variables.  Technology of Electronic Systems  ies for an effective operation of electronically controlled systems. Maintaining, meassuring, optimization of safety and reliability of controlled systems.	, simple regression	on. Multiple
20Y2PR Introduction to time prediction, pr	series prediction, meaning of prediction, basics of quantitative prediction. Methods for predictive quality evaluation, descriptive statistical ton for general formula of loss function. Calculation and programming environment R. Regression models, basics of linear regression regression, statistical tests of linear dependence, selection of input variables.  Technology of Electronic Systems ies for an effective operation of electronically controlled systems. Maintaining, meassuring, optimization of safety and reliability of contechnologies, printed circuits, assembly operations, interconnection and repairs technologiesusers and operators.	KZ nplex systems. Se	on. Multiple 2 miconducto
20Y2PR Introduction to time prediction, pr	series prediction, meaning of prediction, basics of quantitative prediction. Methods for predictive quality evaluation, descriptive statistical ton for general formula of loss function. Calculation and programming environment R. Regression models, basics of linear regression regression, statistical tests of linear dependence, selection of input variables.  Technology of Electronic Systems ies for an effective operation of electronically controlled systems. Maintaining, meassuring, optimization of safety and reliability of contechnologies, printed circuits, assembly operations, interconnection and repairs technologiesusers and operators.  Artificial Neural Networks, Realization and Applications	KZ nplex systems. Se	on. Multiple  2 miconducto
20Y2PR Introduction to time prediction, pr	series prediction, meaning of prediction, basics of quantitative prediction. Methods for predictive quality evaluation, descriptive statistical tormula of loss function. Calculation and programming environment R. Regression models, basics of linear regression regression, statistical tests of linear dependence, selection of input variables.  Technology of Electronic Systems lies for an effective operation of electronically controlled systems. Maintaining, meassuring, optimization of safety and reliability of contechnologies, printed circuits, assembly operations, interconnection and repairs technologiesusers and operators.  Artificial Neural Networks, Realization and Applications  etworks. Basic principles. Comparing the structure of a natural and an artificial neuron. Neural classificators, predictors, compresors, ex	KZ nplex systems. Se  KZ panders and othe	on. Multiple 2 miconducto
20Y2PR Introduction to time prediction, pr	series prediction, meaning of prediction, basics of quantitative prediction. Methods for predictive quality evaluation, descriptive statistical ton for general formula of loss function. Calculation and programming environment R. Regression models, basics of linear regression regression, statistical tests of linear dependence, selection of input variables.  Technology of Electronic Systems ies for an effective operation of electronically controlled systems. Maintaining, meassuring, optimization of safety and reliability of contechnologies, printed circuits, assembly operations, interconnection and repairs technologiesusers and operators.  Artificial Neural Networks, Realization and Applications	KZ nplex systems. Se  KZ panders and othe	on. Multiple 2 miconducto

24 VNI2	Mostov Dvoiset 0	7	
21XN2	Master Project 2	Z Z	1
21XN3	Master Project 3	Z	8
21XN4 21XNDP	Master Project 4  Master Thesis	KZ	_
21Y2LS	Air Traffic Services	KZ KZ	18
	in Czech Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, APP at USA and Czechoslovakia. ATS - Model of financing. Training Systém of Air Traffic Controllers. Future development of ATS	a ACC control. H	_
21Y2MK	Marketing of Air Transport	KZ	2
The content of the	course "Marketing in air transport" is the management of activities and processes using available marketing tools and processes for a on of sales of goods and services in the aviation industry. In addition to the theoretical foundations of marketing, the lectures present s	analysis, strategy	developmen
and implementation	and product analysis, creation of marketing strategies and planning.	ystems of market	, competition
21Y2MS	Aerospace Engineering Simulation and Modelling	KZ	2
The course is desi	igned as a set of exemplary tasks and problems based on practical aviation issues. The university degree mathematic skills and softw	nare applications ι	usage will be
necessary for succ	cessful figuring out. Both simple tasks, where students create own model themselves (e.g. in Matlab), and more complicated problems tools will be applied.	where profession	al developed
21Y2PL	Operational Aspects of Aerodromes	KZ	2
	cts of aerodromes. Location of aerodrome and orientation of runways. Requirements for apron. Capacity of airports runways and term	າinals. Operation ເ	under winter
	conditions. Firefighting units. Protection against unlawful interference. Local transport connection. Environmental protection		
21Y2PP	Law and Operation in Air Transport	KZ	2
•	viation law. International conventions on civil aviation. International organisations and including of the Czech Republic in these organis	-	
aviation. Executi	ion of state administration and state supervision in matters of civil aviation, in accordance with Act No. 49/1997 Col. Facilitation. Resp passengers, luggage and cargo. The safe transport of dangerous goods.	onsibilities of air o	carriers for
21Y2TL	Development Trends of Aircraft Construction	KZ	2
Z1121L	Historical and nowadays trends. Future scenarios. Space industry. Economy.	114	1 2
21Y2VA	Selected Chapters of Aerodynamics	KZ	2
	s of real gases, atmosphere, aeronautical applications of external and internal aerodynamics, compressible internal flow, inlet nozzles a	I	compressible
external flow, supe	ercritical wings and profiles, vertical and oblique shock wave, energy losses, aeronautical aerodynamic profiles of wings, propellers, b	lades gratings, lift	, drag, polar
	viscosity, laminar and turbulent flow, boundary layer.		_
22AMM	Measuring Methods Applied to Transportation	KZ	2
Geodetic location	and technical processing of traffic route with geodetic total station, GPS and photogrammetry, 3D scanning. Transport corridor setting		tic methods
22SKM	Detection and technical processing of several vehicle dynamic characteristics using high-speed cameras, accelerometers and rada		
	Vehicle Kinematic Modelling and Simulation posibilities of simulation tools with regards to vehicle movement analysis and vehicle crash analysis. Kinematic modelling of vehicle / v	KZ	2
i illicipies and p	conditions. Proposed road space passage.	eriicie traiii movei	nent. view
22XN1	Master Project 1	Z	2
22XN2	Master Project 2	Z	2
22XN3	Master Project 3	Z	1
22XN4	Master Project 4	Z	8
22XNDP	Master Thesis	KZ	18
22Y2PS Vehicle dynamics	Traffic Accidents Computer Simulation and Analysis simulation, multi body systems and vehicle active safety systems, vehicle slipping, external influence on virtual model, crash tests even the state of the state o	KZ valuation, single-tra	2 ack vehicle,
227814	vehicle passangers, pedestrian, traffic accident simulation and analysis.	7	
23XN1	Master Project 1	Z	2
23XN2	Master Project 2	Z	2
23XN3	Master Project 3	Z	1
23XN4	Master Project 4	Z	8
23XNDP	Master Thesis	KZ KZ	18
23Y2AE	Acoustics and Electroacoustics in Transportation antities, properties of acoustic signals. Basic equations in acoustics, method of equivalent circuits. Acoustic impedance, damping. Acc	I	2
· ·	microphones. Fundamentals of acoustic signal processing. Acoustics of closed spaces. Fundamentals of acoustics in solids. Acoustic		-
22//200	solutions.	1/7	
23Y2BP	Security Class lent topics include data management, data and text mining applications, terrorism informatics, deception and intent detection, terrorist	KZ	2
The most prevail	analysis, crime analysis, cyber-infrastructure protection, transportation infrastructure security, and information assurance, among		iai network
23Y2FB	Physics for Security Branches	KZ	2
	vsics of substances and phenomena at extreme conditions. Grounds of rheology. Physics of Earth's interior. Geophysics. Physics of a	I	1
00)/01/5	dengineering branches directed to safety.	177	T ^
23Y2NE	Design of Electronic Equipments	olomonts Popliza	2
	d realization of semiconductor electronic components, basic electronic devices division. Sources, input and output elements, process ifiers, data converters. Analog electronic systems, analog computing. Switching elements, logic circuits, FPGA implementation. Single		
	microcontrollers. Design (ORCAD), construction of electronic devices.	V7	
22V2VD		l KZ	2
23Y2VR	Cope with Risks in Engineering Branches  on branches directed to risks, procedures used in risk engineering, ensuring the secured systems, ensuring the safe systems, ensuring the secured systems.	I	s of systems
Types of engineering	ng branches directed to risks, procedures used in risk engineering, ensuring the secured systems, ensuring the safe systems, ensuring	I	of systems
Types of engineering 23Y2VS	ng branches directed to risks, procedures used in risk engineering, ensuring the secured systems, ensuring the safe systems, ensuring the secured systems, ensuring the secured systems, ensuring the safe systems, ensuring the secured systems, ensuring the secured systems, ensuring the secured systems, ensuring the secured systems, ensuring the safe systems, ensuring the secured systems, ensuring the safe systems, ensuring the secured systems and ensuring the secured systems are systems.	g the safe systems	2
Types of engineering 23Y2VS Negotiation princip	ng branches directed to risks, procedures used in risk engineering, ensuring the secured systems, ensuring the safe systems, ensuring the secured systems, ensuring the safe systems, ensuring the secured systems, ensuring the safe systems, ensuring the secured systems and ensuring the secured systems, ensuring the secured systems, ensuring the secured systems, ensuring the secured systems, ensu	g the safe systems  KZ  Negotiation behavi	2 or principles
Types of engineerin 23Y2VS Negotiation princip 23Y2VZ	ng branches directed to risks, procedures used in risk engineering, ensuring the secured systems, ensuring the safe systems, ensuring the secured systems, ensuring the secured systems, ensuring the safe systems, ensuring the secured systems, ensuring the secured systems, ensuring the secured systems, ensuring the secured systems, ensuring the safe systems, ensuring the secured systems, ensuring the safe systems, ensuring the secured systems and ensuring the secured systems are systems.	g the safe systems  KZ  Regotiation behavi	2 or principles

23Y2ZM Intelligence Means and Methods ΚZ 2 History and the present of intelligence services and their role in the modern world. How intelligence services handle with information. Methods and procedures of collecting and evaluating information. Means of intelligence services. Internal and external intelligence, military intelligence. The means and methods of state security services. Cooperation among Intelligence

services within NATO, EU. The organization of the intelligence services.

For updated information see <a href="http://bilakniha.cvut.cz/en/FF.html">http://bilakniha.cvut.cz/en/FF.html</a> Generated: day 2024-03-28, time 18:05.