Study plan

Name of study plan: ID nav.prez.11/12

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: 101

The role of the block: Z

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

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

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 8 courses

Credits in the group: 26 Note on the group:

11TER

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
11TER	Game Theory and Optimal Decision-Making Magdalena Hykšová Magdalena Hykšová (Gar.)	ZK	2	2P+0C+8B	Z	Z
17LOGR	Logistics Chains	Z,ZK	5	2+2	Z	Z
20SK	Signals and Codes	Z,ZK	4	2P+1C	Z	Z
20SSI	System and Reliability Engineering	ZK	4	4+0	Z	Z
20TSS	Telematic Systems and Services	Z,ZK	3	2+1	Z	Z
11MAG	Algorithms	KZ	4	2+2	Z	Z
14GISS	Geographical Information Systems František Kekula, Tomáš Janata, Zuzana Purkrábková Tomáš Janata (Gar.)	KZ	2	0P+2C+8B	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.NPID 11/12 Name=1.sem.nav.prez.ID od 11/12

Game Theory and Optimal Decision-Making

automated vehicle systems, European railway traffic management system.

Decision-making theory	, utility theory. Explicit form games, backward induction. Normal form games. Antagonistic conflict, matrix games. Repeated g	james, evolutiona	ry game theory.					
Cooperative games without transferable payoffs. Cooperative games with transferable payoffs (imputation, core, Shapley value, nucleolus). Applications of game theory above all in								
economics and transpo	rtation.							
17LOGR	Logistics Chains	Z,ZK	5					
Logistics chain. Logistic	s system. Horizontal and vertical dimensions of logistics integration. The types of logistics chains. Logistics chain with continu	ual flows, with inte	errupted flows,					
with synchronous flows	Management based on an independent method of planning. Management based on planing in closed circle with information	feedback. Possib	le position of the					
decoupling point in a lo	gistics chain. Chain effects. Case studies.							
20SK	Signals and Codes	Z,ZK	4					
Time and frequency rep	resentation of signals. Discretization of signals, sampling, quantization and coding. Signal transmission, modulation and cod	ing. Coding theor	y, information					
theory. Checksums and	selfcorrecting codes. Cryptography protocols. MATLAB excercises. Practical applications of coding and modulation.							
20SSI	System and Reliability Engineering	ZK	4					
Enlarged definition of sy	Enlarged definition of system in space of engineer tasks, specification of selected types of systems versus linked tools of system analysis and projection, specifying of selected types							
of system engineering tasks. Predicative diagnostics, safety in the traffic vehicles, safety infrastructure, human in the transportation and traffic systems, security of information in								
transportation.								
20TSS	Telematic Systems and Services	Z,ZK	3					

ZK

Telematic theory, telematic architecture, FRAME, cooperative systems - technologies, principles and aplications, European electronic toll service, traffic information systems, e-call,

11MAG	Algorithms	KZ	4				
Fundamentals of disc	Fundamentals of discrete and numerical algorithms and numerical methods. Practical excersises on selected algorithms, error analysis of numerical algorithms, comparison of possible						
variants of a numeric	variants of a numerical algorithm.						
14GISS	Geographical Information Systems	KZ	2				
Construction of savir	Construction of saving format of space-oriented information land-survey and cartography minimum basic tasks of spatial operations principles of territorial identification						
15J2A1	Language - English 1	Z	2				
Presentation Skills -	Presentation Skills - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work engagement.						

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 - ex	Optional courses f	or certificates	
FCE, CAE.			

Code of the group: XNDP 12/13

Name of the group: Diplomová práce (DS,LO,ID,PL) od 12/13

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+70B	L	Z
12XNDP	Master Thesis	KZ	18	0P+20C+70B	L	Z
13XNDP	Master Thesis	KZ	18	0+20	L	Z
15XNDP	Master Thesis	KZ	18	0P+20C+70B	L	Z
16XNDP	Master Thesis	KZ	18	0P+20C+70B	L	Z
14XNDP	Master Thesis	KZ	18	0P+20C+70B	L	Z
18XNDP	Master Thesis	KZ	18	0P+20C+70B	L	Z
20XNDP	Master Thesis	KZ	18	0P+20C+70B	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	0P+20C+70B	L	Z
22XNDP	Master Thesis Luboš Nouzovský	KZ	18	0P+20C+70E	L	Z
23XNDP	Master Thesis	KZ	18	0P+20C+70B	L	Z
17XNDP	Master Thesis	KZ	18	0P+20C+70B	L	Z

Characteristics of the courses of this group of Study Plan: Code=XNDP 12/13 Name=Diplomová práce (DS,LO,ID,PL) od 12/13

		, , ,	
11XNDP	Master Thesis	KZ	18
12XNDP	Master Thesis	KZ	18
13XNDP	Master Thesis	KZ	18
15XNDP	Master Thesis	KZ	18
16XNDP	Master Thesis	KZ	18
14XNDP	Master Thesis	KZ	18
18XNDP	Master Thesis	KZ	18
20XNDP	Master Thesis	KZ	18

21XNDP	Master Thesis	KZ	18
22XNDP	Master Thesis	KZ	18
23XNDP	Master Thesis	KZ	18
17XNDP	Master Thesis	KZ	18

Code of the group: XN4 12/13

Name of the group: Projekt nav.4.sem. od 12/13

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 1 course

Credits in the group: 8 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11XN4	Master Project 4	Z	8	0P+4C	L	Z
12XN4	Master Project 4 Zuzana arská, Dagmar Ko árková, Kristýna Neubergová, Martin Jacura, Jan Kruntorád, Ond ej Trešl, David Vodák, Tomáš Javo ík, Pavel Purkart,	Z	8	0P+4C	L	Z
13XN4	Master Project 4	Z	8	0+4	L	Z
14XN4	Master Project 4	Z	8	0P+4C	L	Z
15XN4	Master Project 4	Z	8	0P+4C	L	Z
23XN4	Master Project 4	Z	8	0P+4C	L	Z
17XN4	Master Project 4 Roman Št rba, Milan K íž, Václav Baroch, Daniel Pilát, Michal Drábek, Alexandra Dvo á ková, Veronika Faifrová, Petr Fridrišek, Rudolf F. Heidu, Václav Baroch (Gar.)	Z	8	0P+4C	L	Z
18XN4	Master Project 4	Z	8	0P+4C	L	Z
20XN4	Master Project 4	Z	8	0P+4C	L	Z
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	Z
22XN4	Master Project 4 Michal Frydrýn, Karel Kocián, Luboš Nouzovský, Zden k Svatý	Z	8	0P+4C	L	Z
16XN4	Master Project 4 Michal Cenkner, Josef Mik	Z	8	0P+4C	L	Z

Characteristics of the courses of this group of Study Plan: Code=XN4 12/13 Name=Projekt nav.4.sem. od 12/13

Master Project 4	Z	8
Master Project 4	Z	8
Master Project 4	Z	8
Master Project 4	Z	8
Master Project 4	Z	8
Master Project 4	Z	8
Master Project 4	Z	8
Master Project 4	Z	8
Master Project 4	Z	8
Master Project 4	Z	8
Master Project 4	Z	8
Master Project 4	Z	8
	Master Project 4 Master Project 4	Master Project 4 Z Master Project 4 Z

Code of the group: 2.S.NPID 11/12

Name of the group: 2.sem.nav.prez.ID od 11/12

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
20GIT	Geographic Information Technologies	Z	2	2+0	L	Z
20ITS	Intelligent Transport Systems	ZK	3	2+0	L	Z

15JBA2	Language - English 2 Barbora Horá ková, Jitka He manová, Dana Boušová, Lenka Monková, Peter Morpuss, Markéta Vojanová, Marie Michlová, Marek Tome ek, Markéta Musilová,	Z	2	0P+2C+10B	L	Z
13MGD	Management of Transportation Systems	Z,ZK	3	2+1	L	Z
14MTSY	Telecommunications Systems Management	KZ	2	2+0	L	Z
14MOD	Models of Transportation Processes	Z,ZK	5	2+2	L	Z
20SYDO	System Transport Strategy	KZ	3	2+1	L	Z
11THRO	Queuing Theory Šárka Vorá ová Šárka Vorá ová Šárka Vorá ová (Gar.)	ZK	2	2P+0C+8B	L	Z
14ZBS	Company Knowledge Bases	Z	2	0+2	L	Z

Characteristics of the courses of this group of Study Plan: Code=2.S.NPID 11/12 Name=2.sem.nav.prez.ID od 11/12

20GIT	Geographic Information Technologies	Z	2
Advance GIS analys	es. Metadata management. Spatial-temporal data, GRID, 3D visualisation. Net analyses. Linear referencing systém. Geographic	information techno	logy for Internet
Geography Markup I	Language (GML). Scalable Vector Graphics (SVG). Web Feature Service (WFS). Web software application.		
20ITS	Intelligent Transport Systems	ZK	3
Categorization of ITS	s, the ITS system architecture, sophisticated methods for urban traffic management, ITS for public transport, ITS for parking sys	stems, road line traff	ic management
automated detection	$of\ excesses, intelligent\ highways, processing\ and\ modelling\ of\ traffic\ quantities,\ queuing\ theory\ and\ shock\ waves,\ ITS\ for\ road\ traffic\ quantities,\ queuing\ theory\ and\ shock\ waves,\ ITS\ for\ road\ traffic\ quantities,\ queuing\ theory\ and\ shock\ waves,\ ITS\ for\ road\ traffic\ quantities,\ queuing\ theory\ and\ shock\ waves,\ ITS\ for\ road\ traffic\ quantities,\ queuing\ theory\ and\ shock\ waves,\ queuing\ theory\ and\ shock\ shock\ shock\ waves,\ queuing\ theory\ shock\ s$	unnels, tunnel risk a	nalysis systems
he use of modern de	ecision-making systems in ITS.		
15JBA2	Language - English 2	Z	2
Presentation Skills -	expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work engagement	t. '	
13MGD	Management of Transportation Systems	Z,ZK	3
Manager and his tea	m, choice of team members, teamwork, leadership, training of communication and presentation skills of modern, operative an	d strategic planning	and decision
naking, conflicts, mo	otivation, decision support methods, organizing, organization structures, organization welfare, control, project management (fo	cused on PPP), ded	cision support
	etics (Highway Development and Management Table)		
systems in transport	ation (Highway Development and Management Tools).		
systems in transport	Telecommunications Systems Management Telecommunications Systems Management	KZ	2
14MTSY		1 1	_
14MTSY New trends in the are	Telecommunications Systems Management	es of required parar	neters based o
14MTSY New trends in the architectu	Telecommunications Systems Management ea of e-communication services and relevant ecommunications networks, conditions and tools to provide optional set of service	es of required parar	neters based o
14MTSY New trends in the are	Telecommunications Systems Management ea of e-communication services and relevant ecommunications networks, conditions and tools to provide optional set of service	es of required parar	neters based or
14MTSY New trends in the archierarchal architectu of providing service. 14MOD	Telecommunications Systems Management ea of e-communication services and relevant ecommunications networks, conditions and tools to provide optional set of service re of service management system (TMN). Positioning of broadband services, convergence trends leading to NGN. Financial c	es of required parar riteria and tools as	neters based or an integral part
14MTSY New trends in the arrairerarchal architectu of providing service. 14MOD The subject itroduce	Telecommunications Systems Management ea of e-communication services and relevant ecommunications networks, conditions and tools to provide optional set of service re of service management system (TMN). Positioning of broadband services, convergence trends leading to NGN. Financial c Models of Transportation Processes	es of required parar riteria and tools as	neters based or an integral part
14MTSY New trends in the arranierarchal architectu of providing service. 14MOD The subject itroduce modelling of particular	Telecommunications Systems Management ea of e-communications services and relevant ecommunications networks, conditions and tools to provide optional set of service re of service management system (TMN). Positioning of broadband services, convergence trends leading to NGN. Financial c Models of Transportation Processes s students into numerical mathematics and into advanced approaches to modelling of complex systems and on their base expar kinds of transportation, human machine interraction and soft systems.	es of required parar riteria and tools as	neters based o an integral part
14MTSY New trends in the architerarchal architectu of providing service. 14MOD The subject itroduce modelling of particula	Telecommunications Systems Management ea of e-communication services and relevant ecommunications networks, conditions and tools to provide optional set of service re of service management system (TMN). Positioning of broadband services, convergence trends leading to NGN. Financial c Models of Transportation Processes s students into numerical mathematics and into advanced approaches to modelling of complex systems and on their base exp	es of required parariteria and tools as a Z,ZK laterial l	neters based o an integral part 5 approaches to
14MTSY New trends in the armierarchal architectu of providing service. 14MOD The subject itroduce modelling of particulations 20SYDO Complet overview of	Telecommunications Systems Management ea of e-communications services and relevant ecommunications networks, conditions and tools to provide optional set of service re of service management system (TMN). Positioning of broadband services, convergence trends leading to NGN. Financial c Models of Transportation Processes s students into numerical mathematics and into advanced approaches to modelling of complex systems and on their base expar kinds of transportation, human machine interraction and soft systems. System Transport Strategy	zes of required parariteria and tools as a Z,ZK olains differences in KZ odological base pf tr	neters based o an integral part 5 approaches to 3 ansportation;
14MTSY New trends in the architectus of providing service. 14MOD The subject itroduce modelling of particula 20SYDO Complet overview of porccoesses of strate	Telecommunications Systems Management ea of e-communications services and relevant ecommunications networks, conditions and tools to provide optional set of service re of service management system (TMN). Positioning of broadband services, convergence trends leading to NGN. Financial c Models of Transportation Processes s students into numerical mathematics and into advanced approaches to modelling of complex systems and on their base expar kinds of transportation, human machine interraction and soft systems. System Transport Strategy system sciences, system approach to information engineering, definition of system strategy, connections with scientific method	zes of required parariteria and tools as a Z,ZK olains differences in KZ odological base pf tr	neters based o an integral part 5 approaches to 3 ansportation;
14MTSY New trends in the architecture of providing service. 14MOD The subject itroduce modelling of particular 20SYDO Complet overview of porccoesses of strate	Telecommunications Systems Management ea of e-communications services and relevant ecommunications networks, conditions and tools to provide optional set of service re of service management system (TMN). Positioning of broadband services, convergence trends leading to NGN. Financial c Models of Transportation Processes s students into numerical mathematics and into advanced approaches to modelling of complex systems and on their base expar kinds of transportation, human machine interraction and soft systems. System Transport Strategy system sciences, system approach to information engineering, definition of system strategy, connections with scientific methological thinkig, system of strategical management, application space of strategies with link to sustainable development, tools for	zes of required parariteria and tools as a Z,ZK olains differences in KZ odological base pf tr	neters based or an integral part 5 approaches to 3 ansportation;
14MTSY New trends in the architectu of providing service. 14MOD The subject itroduce modelling of particula 20SYDO Complet overview of corccoesses of strate of geoinformatical er	Telecommunications Systems Management ea of e-communication services and relevant ecommunications networks, conditions and tools to provide optional set of service re of service management system (TMN). Positioning of broadband services, convergence trends leading to NGN. Financial c Models of Transportation Processes s students into numerical mathematics and into advanced approaches to modelling of complex systems and on their base exp ar kinds of transportation, human machine interraction and soft systems. System Transport Strategy system sciences, system approach to information engineering, definition of system strategy, connections with scientific methological thinkig, system of strategical management, application space of strategies with link to sustainable development, tools for negineer technologies.	z,ZK lains differences in KZ blains differences in KZ bloological base pf tr mastering of strateg	separation; please with support
14MTSY New trends in the architerarchal architectu of providing service. 14MOD The subject itroduce modelling of particula 20SYDO Complet overview of corccoesses of strate of geoinformatical er 11THRO Discrete event proce	Telecommunications Systems Management ea of e-communications services and relevant ecommunications networks, conditions and tools to provide optional set of service re of service management system (TMN). Positioning of broadband services, convergence trends leading to NGN. Financial c Models of Transportation Processes s students into numerical mathematics and into advanced approaches to modelling of complex systems and on their base exp ar kinds of transportation, human machine interraction and soft systems. System Transport Strategy system sciences, system approach to information engineering, definition of system strategy, connections with scientific methological thinkig, system of strategical management, application space of strategies with link to sustainable development, tools for negineer technologies. Queuing Theory	z,ZK lains differences in KZ bdological base pf tr mastering of strateg ZK Kendall classificatio	separation; please with support
14MTSY New trends in the architerarchal architectu of providing service. 14MOD The subject itroduce modelling of particula 20SYDO Complet overview of porccoesses of strate of geoinformatical er 11THRO Discrete event proce models M/M/n. Non-	Telecommunications Systems Management ea of e-communications services and relevant ecommunications networks, conditions and tools to provide optional set of service re of service management system (TMN). Positioning of broadband services, convergence trends leading to NGN. Financial c Models of Transportation Processes s students into numerical mathematics and into advanced approaches to modelling of complex systems and on their base exp ar kinds of transportation, human machine interraction and soft systems. System Transport Strategy system sciences, system approach to information engineering, definition of system strategy, connections with scientific methological thinkig, system of strategical management, application space of strategies with link to sustainable development, tools for negineer technologies. Queuing Theory ss, definition, random distribution, and probability. Basic processes, process of revitalisation. Markov process, Markov models,	z,ZK lains differences in KZ bdological base pf tr mastering of strateg ZK Kendall classificatio	separation; please with support
14MTSY New trends in the architerarchal architectu of providing service. 14MOD The subject itroduce modelling of particula 20SYDO Complet overview of corccoesses of strate of geoinformatical er 11THRO Discrete event proce models M/M/n. Non-	Telecommunications Systems Management ea of e-communication services and relevant ecommunications networks, conditions and tools to provide optional set of service re of service management system (TMN). Positioning of broadband services, convergence trends leading to NGN. Financial c Models of Transportation Processes s students into numerical mathematics and into advanced approaches to modelling of complex systems and on their base exp ar kinds of transportation, human machine interraction and soft systems. System Transport Strategy system sciences, system approach to information engineering, definition of system strategy, connections with scientific methological thinkig, system of strategical management, application space of strategies with link to sustainable development, tools for regineer technologies. Queuing Theory ss, definition, random distribution, and probability. Basic processes, process of revitalisation. Markov process, Markov models, markovian models, model M/C/n, models G/G/n. Models with continuous flow. Service net, examples of Petri net. Computer sin	es of required parariteria and tools as a Z,ZK plains differences in KZ pdological base pf transtering of strategonal Cassification mulation.	aneters based or an integral part 5 approaches to 3 ansportation; gies with support 2 n, model M/M/1

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

Name of the group: 3.sem.nav.prez. ID 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:

Note on the grot	aρ.					
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
14BSA	Software Safety - ADA	Z,ZK	6	2+2	Z	Z
15DPS	Transportation Psychology	Z	2	2+0	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
14PPRP	Computer Aided Project Management Marek Kalika Marek Kalika (Gar.)	KZ	2	0P+2C	L	Z
20RKS	Control in Complex Systems	Z,ZK	7	2+2	Z	Z
11STS	Stochastic Systems Šárka Vorá ová, Evženie Uglickich, Natálie Blahitka, Michal Matowicki, Pavla Pecherková Pavla Pecherková Šárka Vorá ová (Gar.)	Z,ZK	4	2P+2C+14B	Z	Z

Characteristics of the courses of this group of Study Plan: Code=3.S.NPID 12/13 Name=3.sem.nav.prez. ID od 12/13

14BSA Software Safety - ADA Problems of safety and reliability of software, requirements to its safety and reliability in transportation applications, problems of portability and maintenance, ways of their reaching, relations to systems working in real time, safe SW design in EU standards, practical work with GNAT ADA system in excercises, formal design methods and CASE systems. 15DPS Transportation Psychology Ζ Subject of psychology and its basic concepts. Information intake, decision-making and behaviour. Performance. Engineering psychology and vehicle construction. Psychological aspects of travel route and traffic conditions, accidents and traffic incidents. Selection and training of the staff. Work and leisure. Age as a factor in transport operation 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. 14PPRP Computer Aided Project Management ΚZ 2 What is the project? The basic terms a concepts of project management. Life cycle of the project and its phased approach. Analysis and specification of the assignment, activity definition, stages, objectives and measurability. Risk events and risk planning. Project change management during implementation. Preparation of the project outline (activities, restrictions, assignments, calendars etc.) Project planning and optimization - time, resources Control in Complex Systems Z,ZK Methodology of advanced control theory and the utilization in vehicles and traffic control. Methodology of automata theory, complex hybrid and uncertain systems and alliances utilizing genetic algorithms, prediction of time series and concepts of information power and reconstructability analysis. Stochastic Systems Z,ZK The subject deals with the problems of mathematical modelling of dynamical systems, estimation od these models and their utilization for prediction. The results are illustrated on

practical transportation tasks. Mathematical theory roots from probability and mathematical statistics and they use the methods of the Bayesian probabilistic approach.

Name of the block: Semestrální projekt Minimal number of credits of the block: 5

The role of the block: ZP

Code of the group: XN1 11/12

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

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
11XN1	Master Project 1	Z	2	0P+2C+4B	Z	ZP
12XN1	Master Project 1 Zuzana arská, Dagmar Ko árková, Kristýna Neubergová, Martin Jacura, Jan Kruntorád, Ond ej Trešl, David Vodák, Tomáš Javo ík, Pavel Purkart,	Z	2	0P+2C+4B	Z	ZP
13XN1	Master Project 1	Z	2	0+2	Z	ZP
14XN1	Master Project 1	Z	2	0P+2C+4B	Z	ZP
15XN1	Master Project 1	Z	2	0P+2C+4B	Z	ZP
23XN1	Master Project 1	Z	2	0P+2C+4B	Z	ZP
17XN1	Master Project 1 Milan K íž, Václav Baroch, Daniel Pilát, Michal Drábek, Alexandra Dvo á ková, Veronika Faifrová, Rudolf F. Heidu, Tomáš Horák, Vít Janoš,	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 Jií 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
16XN1	Master Project 1 P emysl Toman	Z	2	0P+2C+4B	Z	ZP

Characteristics of the courses of this group of Study Plan: Code=XN1 11/12 Name=Projekt nav.1.sem.od 11/12

11XN1	Master Project 1	Z	2
12XN1	Master Project 1	Z	2
13XN1	Master Project 1	Z	2
14XN1	Master Project 1	Z	2
15XN1	Master Project 1	Z	2
23XN1	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
16XN1	Master Project 1	Z	2

Code of the group: XN2 11/12

Name of the group: Projekt nav.2.sem.od 11/12

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
11XN2	Master Project 2	Z	2	0P+2C+8E	L	ZP
12XN2	Master Project 2 Zuzana arská, Dagmar Ko árková, Kristýna Neubergová, Martin Jacura, Jan Kruntorád, Ond ej Trešl, David Vodák, Tomáš Javo ík, Pavel Purkart,	Z	2	0P+2C+8E	L	ZP
13XN2	Master Project 2	Z	2	0+2	L	ZP
14XN2	Master Project 2	Z	2	0P+2C+8E	L	ZP
15XN2	Master Project 2	Z	2	0P+2C+8E	L	ZP
23XN2	Master Project 2	Z	2	0P+2C+8E	L	ZP
17XN2	Master Project 2 Roman Št rba, Milan K íž, Václav Baroch, Daniel Pilát, Michal Drábek, Alexandra Dvo á ková, Veronika Faifrová, Petr Fridrišek, Rudolf F. Heidu, Vít Janoš (Gar.)	Z	2	0P+2C+8E	L	ZP
18XN2	Master Project 2 Daniel Kytý	Z	2	0P+2C+8E	L	ZP
20XN2	Master Project 2 Ji í R ži ka, Patrik Horaž ovský	Z	2	0P+2C+8E	L	ZP
21XN2	Master Project 2	Z	2	0P+2C+8E	L	ZP
22XN2	Master Project 2 Michal Frydrýn, Karel Kocián, Luboš Nouzovský, Zden k Svatý, Jakub Nová ek	Z	2	0P+2C+8E	L	ZP
16XN2	Master Project 2 Josef Mik, P emysl Toman	Z	2	0P+2C+8E	L	ZP

Characteristics of the courses of this group of Study Plan: Code=XN2 11/12 Name=Projekt nav.2.sem.od 11/12

11XN2	Master Project 2	Z	2
12XN2	Master Project 2	Z	2
13XN2	Master Project 2	Z	2
14XN2	Master Project 2	Z	2
15XN2	Master Project 2	Z	2
23XN2	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
16XN2	Master Project 2	Z	2

Code of the group: XN3 12/13

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

Requirement credits in the group: In this group you have to gain 1 credit

Requirement courses in the group: In this group you have to complete 1 course

Credits in the group: 1 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
11XN3	Master Project 3	Z	1	0P+4C	Z	ZP
12XN3	Master Project 3 Zuzana arská, Dagmar Ko árková, Martin Jacura, Jan Kruntorád, Ond ej Trešl, David Vodák, Tomáš Javo ík, Pavel Purkart, Lukáš Týfa,	Z	1	0P+4C	Z	ZP

13XN3	Master Project 3	Z	1	0+4	Z	ZP
14XN3	Master Project 3	Z	1	0P+4C	Z	ZP
15XN3	Master Project 3	Z	1	0P+4C	Z	ZP
23XN3	Master Project 3	Z	1	0P+4C	Z	ZP
17XN3	Master Project 3 Milan K íž, Václav Baroch, Daniel Pilát, Michal Drábek, Alexandra Dvo á ková, Veronika Faifrová, Rudolf F. Heidu, Tomáš Horák, Vít Janoš,	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
16XN3	Master Project 3 Michal Cenkner, Josef Mík, P emysl Toman, Josef Svoboda	Z	1	0P+4C	Z	ZP

Characteristics of the courses of this group of Study Plan: Code=XN3 12/13 Name=Projekt nav.3.sem. od 12/13

11XN3	Master Project 3	Z	1
12XN3	Master Project 3	Z	1
13XN3	Master Project 3	Z	1
14XN3	Master Project 3	Z	1
15XN3	Master Project 3	Z	1
23XN3	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
16XN3	Master Project 3	Z	1

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-N 11/12

Name of the group: PVP nav.prez. od 11/12

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
20Y2AP	Computer Systems Architecture	KZ	2	2+0	L	PV
12Y2BM	Safety on The Local Roads	KZ	2	2P+0C	Z	PV
17Y2BU	Stock Market and Investment Companies	KZ	2	2+0	L	PV
14Y2C1	CATIA I	KZ	2	2P+0C	L	PV
14Y2C2	CATIA II	KZ	2	2P+0C	Z	PV
14Y2CS	Sensitivity of Systems	KZ	2	2P+0C	L	PV
13Y2DT	Taxes and Fees in Transport and Telecommunications	KZ	2	2+0	L	PV
17Y2DT	Taxes and Fees in Transport and Telecommunications	KZ	2	2+0	L	PV
17Y2DL	Transportation Logistics	KZ	2	2+0	Z	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 Václav Baroch	KZ	2	2P+0C	Z	PV
11Y2FX	Functions of Complex Variable	KZ	2	2P+0C	Z	PV
18Y2FZ	Physical foundation of materials' properties Jaroslav Valach	KZ	2	2P+0C	L	PV

15Y2HS	Road Transport History Eva Rezlerová, Zuzana arská	KZ	2	2P+0C	L	PV
16Y2HP	Vehicle Hygiene	KZ	2	2P+0C	L	PV
13Y2IM	Investment and Insurance Mathematics	KZ	2	2+0	L	PV
12Y2IS	Urban Networks	KZ	2	2P+0C	Z	PV
14Y2JM	One-Chip Controllers	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	KZ	2	2P+0C	Z	PV
12Y2KE	Miroslav Veliš Landscape Ecology	KZ	2	2P+0C	Z	PV
21Y2L <i>Z</i>	Kristýna Neubergová Human Recources and Projects in Aviation	KZ	2	2+0	L	PV
11Y2LG	Logics of Engineer's Judgement	KZ	2	2P+0C		PV
17Y2LS	Logistic Systems	KZ	2	2+0		PV
13Y2MC	Management of Travel Services Transportation	KZ	2	2+0	Z	PV
13Y2MV	Management of Transportation Quality	KZ	2	2+0	 L	PV
13Y2MZ	Environmental Management	KZ	2	2+0	Z	PV
	Sociology for Managers					
15Y2MS	Martina Šmidochová	KZ	2	2P+0C	Z	PV
12Y2MH	Measurement and Modeling of Traffic Noise	KZ	2	2P+0C	L	PV
12Y2MD	Methods of Traffic Regulation and Prediction Zuzana arská	KZ	2	2P+0C	L	PV
20Y2MK	Quality Tools in the Development Phase	KZ	2	2+0	L	PV
17Y2MS	Microsimulation of Railway Operation	KZ	2	2P+0C	Z	PV
21Y2MS	Aerospace Engineering Simulation and Modelling	KZ	2	2P+0C	Z	PV
12Y2MZ	Modernization of Railway Lines and Stations	KZ	2	2P+0C	L	PV
13Y2NU	Dagmar Ko árková, Miroslav Věliš Cost and Benefits of Transport Systems	KZ	2	2+0	L	PV
21Y2NR	Navigation and Flight Control Systems	KZ	2	2+0	L	PV
20Y2NE	Design of Experiments in the Development Phase	KZ	2	2+0		PV
23Y2NE	Design of Electronic Equipments	KZ	2	2+0		PV
14Y2OP	Object Oriented Programming in Transport	KZ	2	2P+0C	 L	PV
12Y2OO	Protection of the Nature and Waste Management	KZ	2	2+0		PV
15Y2OZ	Health Protection in Transportation and EU	KZ	2	2P+0C	 Z	PV
21Y2OU	Eva Rezlerová, Petr Musil Organizations Licenced for A/C Maintenance	KZ	2	2+0		PV
12Y2PB	Navigation, Waterway Transport and Facilities	KZ	2	2+0	L	PV
16Y2PG	Computer Graphics and Virtual Reality	KZ	2	2P+0C	Z	PV
22Y2PS	Stanislav Novotný, Petr Bouchner	KZ	2	2P+0C	L	PV
17Y2P	Traffic Accidents Computer Simulation and Analysis Insurance Bussiness	KZ	2	2+0	L	PV
15Y2PT	Food in Transportation	KZ	2	2P+0C	L	PV
15Y2PS	Eva Rezlerová, Petr Musil Practical Spanish for Transportation, Management and	KZ	2	2+0	Z	PV
21Y2PP	Business Law and Operation in Air Transport	KZ	2	2P+0C+8B	L	PV
20Y2PR	Radoslav Zozu ák Prediction of time series	KZ	2	2P+0C	L	PV
16Y2PU	Principles of Vehicle Design	KZ	2	2+0		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
21Y2PL	Operational Aspects of Aerodromes	KZ	2	2P+0C	Z	PV
17Y2PR	Carriage Processes	KZ	2	2+0	Z	PV
13Y2PS	Case Studies in Transportation	KZ	2	2+0	Z	PV
17Y2PS	Case Studies in Transportation	KZ	2	2P+0C	 Z	PV
15Y2PU	Publications and Their Creation	KZ	2	2P+0C	Z	PV

12Y2RD	Realization of Transport Buildings Dagmar Ko árková, Martin Höfler, Tomáš Honc	KZ	2	2P+0C	L	PV
17Y2RS	Regional Transport - Mobility of Small Towns	KZ	2	2+0	Z	PV
17Y2RZ	Control of Transport Processes	KZ	2	2P+0C	Z	PV
13Y2RK	Crisis Management	KZ	2	2+0		PV
15Y2SP	Seminar on Political Philosophy	KZ	2	2P+0C	Z	PV
16Y2ST	Special Technologies in Transport and Telecommunications	KZ	2	2P+0C	L	PV
18Y2SD	Reliability and Diagnostics, Experimental Methods Daniel Kytý	KZ	2	2P+0C	Z	PV
15Y2SR	Stylistics and Rhetorics	KZ	2	2P+0C	Z	PV
17Y2SG	Systematic Creating of Railway Timetables	KZ	2	2+0	Z	PV
17Y2SK	Urban and Regional Rail Transport System	KZ	2	2P+0C	L	PV
15Y2TS	Technician and Contemporary Society Jan Feit, Eva Rezlerová	KZ	2	2P+0C	L	PV
20Y2TE	Technology of Electronic Systems	KZ	2	2P+0C	Z	PV
14Y2TU	Telecommunications Systems and Multimedia	KZ	2	2P+0C	Z	PV
16Y2TT	Transportation and Building Technology and Equipment	KZ	2	2P+0C	Z	PV
21Y2TL	Development Trends of Aircraft Construction	KZ	2	2+0	Z	PV
12Y2UD	Sustainable Transportation	KZ	2	2P+0C	L	PV
14Y2UI	Artificial Intelligence	KZ	2	2P+0C+8B	Z,L	PV
20Y2UA	Artificial Neural Networks, Realization and Applications	KZ	2	2P+0C	Z	PV
18Y2UB	Accident Biomechanics and Safety	KZ	2	2P+0C	L	PV
23Y2VZ	Leadership and Human Resource Development	KZ	2	2P+0C	L	PV
13Y2VZ	Leadership of Human Resources	KZ	2	2+0		PV
21Y2VA	Selected Chapters of Aerodynamics	KZ	2	2P+0C+8B	L	PV
23Y2VS	Negotiation and Cooperation	KZ	2	2+0	Z	PV
18Y2VC	Computational Mechanics in Transportation Radek Kolman	KZ	2	2P+0C	L	PV
12Y2VT	High Speed Railways	KZ	2	2P+0C	Z	PV
12Y2ZK	Traffic Calming Zuzana arská	KZ	2	2P+0C	Z	PV

12Y2VT	High Speed Railways	KZ	2	2P+0C	Z	PV
12Y2ZK	Traffic Calming Zuzana arská KZ 2 2				Z	PV
Characteristic	s of the courses of this group of Study Plan: Code=	Y2-N 11/12 Name=PVP nav.pı	ez. od 11	1/12		
23Y2AE	Acoustics and Electroacoustics in Transportation			K	ΚZ	2
	antities, properties of acoustic signals. Basic equations in acoustics, me microphones. Fundamentals of acoustic signal processing. Acoustics of	·				
20Y2AP	Computer Systems Architecture			k	(Z	2
	nputer architecture principles, e.g. von Neumann's model, pipelining, dif	ferent coupling of systems, transmission	protocols, s	1		vstems
•	The Amdahl's law, effectiveness of parallel systems performance measu					•
and symmetric mu	ultiprocessing explained on many examples.		·		•	
12Y2BM	Safety on The Local Roads			l k	ſΖ	2
	ad accidents rates, social looses. Collision points, diagrams. Tools and m	ethods for safer road transportation. Cro	ssroads from	1		Psvchologi
	dabouts. Pedestrian transport, cyclists. Traffic lights coordination. Transp	•		·	,	, ,
17Y2BU	Stock Market and Investment Companies			l k	(Z	2
The course will tea	ach the students to understand the financial and capital markets, especi	ally the financial system, market determ	ination of dis	scount rates, mo	oney-marke	et analysis a
	ties. Investor liquidity. Investment companies, its types, management an				-	•
volatility and risks.		-		_		
14Y2C1	CATIA I			l k	ζZ	2
Fundaments of wo	orking with CATIA, making basic parts and bodies. Making 2D sketches,	geometric stucture, parametric linking,	making ada	otive models fro	m 2D sketc	ches. Impor
	le parts and bodies. Making assemble and visualization.					·
14Y2C2	CATIA II			l k	(Z	2
Extension of basic	course. Modeling compound bodies. Possibility of enumeration, comun	ications with other systems. Surface x s	olid bodies.	ا Kinematic mech	າanism. Pro	ject making
and project coope	ration. Outputs of projects.	·				,
14Y2CS	Sensitivity of Systems			l k	ſΖ	2
Design of systems	s with defined reliability. The impact of changing parameters and subsys	tems within a system. System sensitivity	computing.	definition of se	nsitivity fun	ctions and
• .	usability in system design.				, ,	
13Y2DT	Taxes and Fees in Transport and Telecommunicati	ons		l k	ΚZ	2
-	nd fees of the Czech Republic, comparison with customs in the EU. Purp		ms and tax o	ı		_
•	es. Historic development of rates of taxation of natural individual, legal e			J		,,
17Y2DT	Taxes and Fees in Transport and Telecommunicati	ons		l k	ΚZ	2
	nd fees of the Czech Republic, comparison with customs in the EU. Purp		ms and tax o	1		_
•	Na Historia development of rates of taxation of natural individual local of					, , 010

local and court fees. Historic development of rates of taxation of natural individual, legal entity, VAT, consumption tax.

17Y2DL Ti	ransportation Logistics	KZ	2
1	on in logistic systems. Methods of optimal management and allocation of the material flows. Decision processes in material a		•
diagnostic and decision sys	logistic system, optimization of the quality level in view of shipment affinity. Role and function of information flows in logistic stems in logistics.	systems. Projectio	n or information,
	ransportation Psychology in German Speaking Countries	KZ	2
Introduction into broader vi	iew of traffic problems with regard to the work with texts (Physics for drivers, abusing alcohol during driving, exhaustion, g	etting of driving lid	ence, children
	affic psychology in the internet etc.)		
1	Dynamics of Transport Routes and Vehicles 2 shicle and transport routes and their influence on the stress and strain components of the vehicle structure or behavior of	KZ traffic routes Cres	2
1	nsport routes. Vibration of systems with a finite number of degrees of freedom. Methods of constant stiffness and constant		•
	aria for the admissibility of oscillation.		
	inancing in Urban Mass Transportation	KZ	2
1	nent in Prague and other cities in the world. Building and operation of public tram, bus, and trolleybus networks. Undergroun ent in small towns. Particularities of investment and operation financing of individual UMT types. Historic and present mo	-	•
1 '''	engers. Tourism & DMT. UMT typology & Direction of optimum financing.	dels of OWT IIIlan	cing. mansport
	unctions of Complex Variable	KZ	2
	ction, holomorphic function, complex exponential series, integration, Cauchy theorem. Taylor series, Laurent series of com	plex variable func	tion. Basics of
Laplace and Z-transformat		1/7	
1	Physical foundation of materials' properties efects influence on properties of materials, stiffness, plasticity, strength, fracture, fatigue, creep, corrosion, effects of envir	KZ	2 og on materials'
behavior are the main disc		simon and loadii	ig on materiale
15Y2HS R	Road Transport History	KZ	2
	he 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 ones, bridges and traffic control, development of road signs.	road travelling in	modern period.
	/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	l
1	easuring, prevention, elimination. Exhausts - creation, measurement, reduction, non-regular fuels and drives. Ergonomy - si	tting, standing, cor	ntrol, operational
	ventilation, air-conditioning, filtration, tiredom.	1/7	
	nvestment and Insurance Mathematics ient and real. Annuity, cash flow, present and future value. Debt amortization. Investment assessment. Security pricing. Ba	KZ	2 rinciples of
	ince - risks, tariff groups, drivers, premium. Basics of demography, life tables, commutation functions. Capital life insurance	=	· ·
	m, gross premium, premium reserves.		
	Irban Networks	KZ	2
	osition of UN as public and technical infrastructure / utillities, metodology of the UN master planning, of UN design, UN co standards of UN, trenchless technologies for UN).	ordination, UN ins	taliation and UN
' '	One-Chip Controllers	KZ	2
One-chip controllers archite	tecture, embedded peripherals (counters, timers, converters, ports) and their utilisation. Practical tasks are programmed w	ith the aid of AVR	chips.
	Capital Investment in Transportation and Telecommunications	KZ	2
	ent desicion making - long term goals and investment strategies, long temr financing.	1/7	
1	Car Body Design pad car body, bus car body, and motorcycle as a construction set. Principles of design, production, testing and operation. I	KZ Materials used for	car body
1	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.		
	Rail 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
	andscape Ecology	KZ	2
Landscape ecology. Lands	scape - definition, types, evolution. Landscape systems. Anthropogenic impacts on landscape. Methods using for evaluating	1	tal geometry
	ns in landscape ecology. Landscape planning.		
1	Iuman Recources and Projects in Aviation and policy, the HR specifics in aviation, managers´ and specialists´ competence in HR development, management and de	KZ	2
	ie conditions of global market and competition, new trends and approaches to HR development. Project management as a		
1 -	anagement. The philosophy and principles, of project management.	, , , , , , , , , , , , , , , , , , , ,	
11Y2LG L	ogics of Engineer's Judgement	KZ	2
1 -	eer's judgement, its propositional and predicative logical base. Solutions of logical tasks through the methods of truthfulner	ss and semantic a	nalysis charts.
	ogical basis for network design for the solution of technical tasks. ogistic Systems	KZ	2
1	set of specific activities that are interconnected by interactive links. The base of these systems forms: stock control and in		l
transportation systems, ma	anagement systems and logistics partnership formation and logistic alliances formation.		_
1	Management of Travel Services Transportation	KZ	2
Global importance of the to and specifics of services in	purist trade, transport services, accomodation services, catering services, guide sevices, spa services, organization and ser	vices of travel age	ncies, marketing
	Management of Transportation Quality	KZ	2
	dards and quality standardization, quality management systems, quality management in transport and logistics, marketing	1	l
H	monitoring, statistics in quality management, improving, focus on the customer.		
1	invironmental Management	KZ	2
	epts (difference between the environment and ecology, ecosystems, sustatinable development). Main ways of environmen i environment protection, the development of the environmental policy, its strategy and instruments. Voluntary instruments, t		_
	portant voluntary instruments in the practice.	F 2. 28.100 at	

15Y2MS	Sociology for Managers	KZ	2
	to a corporation. Corporation and its organization. Corporation and its running - human role and communication. Corporation,	its culture and so	cial system.
	in free market economy. Corporate directorship, work groups, adaptation, strife, different roles and positions in corporation.	1/7	
12Y2MH Theoretical introduction	Measurement and Modeling of Traffic Noise to noise from traffic. Noise from rail transport. Noise from road traffic. Measurement and calculation of noise from rail traffic.	KZ	2
	Modelling of traffic noise in the CADNA A.	weasurement and	calculation of
12Y2MD	Methods of Traffic Regulation and Prediction	KZ	2
	gnosis, traffic prognosis for large area (calculation of future traffic volumes, calculation of future traffic volumes between areas (analogical and syr	nthetic methods,
	bution to road network). Shock wave in traffic flow. Service levels and their traffic volumes. Acceleration noise.		
20Y2MK	Quality Tools in the Development Phase	KZ	2
1	nagement methods, data acquisition and analysis of customer requirements, methods, QFD, DFM, DFA, DFS. FMEA (Analysis o	f defects and their	consequences).
17Y2MS	Microsimulation of Railway Operation	KZ	2
	acteristics of simulation tools, creation of a simulation model of railway infrastructure, verification of a specific operational cor		
	tructure model and modification to the infrastructure to allow the implementation of the proposed operational concept. Stability		
of sensitivity of the ope	rational concept to delays.		
21Y2MS	Aerospace Engineering Simulation and Modelling	KZ	2
_	d as a set of exemplary tasks and problems based on practical aviation issues. The university degree mathematic skills and so		-
1	ul figuring out. Both simple tasks, where students create own model themselves (e.g. in Matlab), and more complicated proble	ms where profess	ional developed
tools will be applied. 12Y2MZ	Modernization of Pailway Lines and Stations	KZ	2
	Modernization of Railway Lines and Stations 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	•	
and realization of proje	cts. Technical description of the tranzit corridors.		·
13Y2NU	Cost and Benefits of Transport Systems	KZ	2
	their history, externalities and their internalization, public goods, transport funding, assessment of transport constructions an		
	cation, influence of transport constructions on public budgets, relation of transport and economic growth, importance of transport		
21Y2NR	Navigation and Flight Control Systems area navigation, FMS, FMC, A/P, A/T, FD, MCDU, GPWS.	KZ	2
20Y2NE	Design of Experiments in the Development Phase	KZ	2
	in the development of cars. A detailed overview of their own methods. Applied Statistics. Laboratory tests of durability, perform		
	n, corrosion testing, analysis of customer satisfaction, specific expert system for the VDS, the relationship with FMEA (failure		
23Y2NE	Design of Electronic Equipments	KZ	2
	lization of semiconductor electronic components, basic electronic devices division. Sources, input and output elements, proceed		
	ca converters. Analog electronic systems, analog computing. Switching elements, logic circuits, FPGA implementation. Single	chip microcomput	ers and
14Y2OP	n (ORCAD), construction of electronic devices.	KZ	2
_	Object Oriented Programming in Transport lation, inheritance, polymorphism, templates, retyping, stream, exceptions, repository, collections, virtual methods and classe	l l	=
	ation system, discrete event simulation, celular automata simulation and virtual life area.		
12Y2OO	Protection of the Nature and Waste Management	KZ	2
History of nature protect	ction, its evaluating. Protected species, protected zones. Legislation. Landscape planning. Waste management. Production of	waste and its type	s. Domestic
	, dangerous waste, toxic waste. Solid waste disposal and sorted waste. Composting. Nuclear waste and nuclear waste dump.		
	Health Protection in Transportation and EU	KZ	2
	nsportation in CR in the past and present. Conditions before 1989 and after, current legislature, future prospects. Harmonisat Il principles of health protection and support in selected EU countries.	ion of legislation w	ith other EU
21Y2OU	Organizations Licenced for A/C Maintenance	KZ	2
12Y2PB	Navigation, Waterway Transport and Facilities	KZ	2
	er transport, water transport facilities and principals of their construction. Lock chambers, lifts and ports. Vessels and waterwa	I .	_
to inland navigation and	d its integration to European norms. International relations in inland navigation and waterways.		
16Y2PG	Computer Graphics and Virtual Reality	KZ	2
· ·	nd processing of bitmap and vector 2D graphics, 3D virtual scenes and algorithms used for their computerized processing. Adop	-	vith professional
	creation and processing of 2D, 3D and interactive graphics, and basics of programming language VRML and graphic libraries	 	
22Y2PS	Traffic Accidents Computer Simulation and Analysis	KZ	2
	lation, multi body systems and vehicle active safety systems, vehicle slipping, external influence on virtual model, crash tests destrian, traffic accident simulation and analysis.	evaluation, single	-track veriicle,
17Y2P	Insurance Bussiness	KZ	2
	history and progress. Insurance company, insurance - sorts. Risks and damages. Reinsurance company, principle of reinsural		-
15Y2PT	Food in Transportation	KZ	2
The nutrition policy. Inte	eraction transportation and foodstuffs. The health risks. Hygienic safeguard. The practical examples from the Czech Republic	and from the world	d. The issues of
	and other railroad equipment. Legislation.		
15Y2PS	Practical Spanish for Transportation, Management and Business	KZ	2
· ·	unication skills, training of correct written expression of formal character, basic technical vocabulary, cultural specifics of the S rt and commerce, business letter.	panish speaking o	countries.
21Y2PP	Law and Operation in Air Transport	KZ	2
	ן במש מחם סיףפרמנוסודוד אוד דומוז אסרנ n law. International conventions on civil aviation. International organisations and including of the Czech Republic in these orga	·	_
· ·	tate administration and state supervision in matters of civil aviation, in accordance with Act No. 49/1997 Col. Facilitation. Res	-	
	nd cargo. The safe transport of dangerous goods.		
20Y2PR	Prediction of time series	KZ	2
	ies prediction, meaning of prediction, basics of quantitative prediction. Methods for predictive quality evaluation, descriptive sta		
	or general formula of loss function. Calculation and programming environment R. Regression models, basics of linear regressi ests of linear dependence, selection of input variables.	on, simple regress	sion, iviuluple
16Y2PU	Principles of Vehicle Design	KZ	2
	1 · · · · · · · · · · · · · · · · · · ·		

14Y2PI Process Information Systems in Transportation	KZ	2
Introduction and detailed usage of transport information systems, e.g. EFC, ePurse and transport check-in systems for public transport with focus of SOA (Service Oriented Architecture). Inforamtion systems implementation and operations description in the Czech Republic (technical and process		-
14Y2PJ C++ Programming Language	KZ	2
OOP philosophy and basics of C++ programming language. Class, object, constructor, destructor, inheritance, abstract class, virtual methods, exception	1	
overloading, abstract data type implementation in C++.		
14Y2PH CAD Interface Programming	KZ	2
Introduction to CAD interface programming techniques with the help of LIST and VBA programming languages. Possibilities of proper objects (comrapplications creation in CAD systems. Programming of cooperation with other applications (databases, spread-sheets).	nands), dialogues	, interraces, and
21Y2PL Operational Aspects of Aerodromes	KZ	2
Operational aspects of aerodromes. Location of aerodrome and orientation of runways. Requirements for apron. Capacity of airports runways and to	1	
conditions. Firefighting units. Protection against unlawful interference. Local transport connection. Environmental protection.		
17Y2PR Carriage Processes	KZ	2
Carrier's commercial liability. Ordering and contracting of carriage. Intergovernmental conventions on international carriage. Contract on passenger ca Forwarding contract. 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.	or internationally	ассориса
13Y2PS Case Studies in Transportation	KZ	2
Definition of basic concepts in transport, traffic impacts on the environment and national economy, problems of energy and transport sustainability f		
relationship of transport and macroeconomic development, investments in transport, the individual chapters will be presented to students through calciums discussions, the lectures using practitioners.	ase studies and su	ubsequent
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 infrastr	1	
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	authorities, invest	ors, carrier
representative interest groups, residents, etc.).		
15Y2PU Publications and Their Creation Scientific texts types. Footnotes and references. Exploration of facts. Quotations. Formal document layout. Working with information databases. Type	KZ	2 Typographia
editors - MS Word, Tex/LaTeX. Practical creation of simple scientific documents.	grapriic principies	. Typographic
12Y2RD Realization of Transport Buildings	KZ	2
Transport Buildings Types. Project Documentation Types. Building Code. Land Permission and Building Permission Process. Building Process. Project	1	ct Management.
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 passenger and	freight transport
in regions, activities related to regional transport, passenger transport safety in regions. 17Y2RZ Control of Transport Processes	KZ	2
Theoretical bases, transport system, decomposition, factors influencing control, quality diagnosis, methods of control, systems for decision making a	1	
telematics.		
13Y2RK Crisis Management	KZ	2
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21Y2TL	Development Trends of Aircraft Construction	KZ	2
	lays trends. Future scenarios. Space industry. Economy.	1	-
12Y2UD	Sustainable Transportation	KZ	2
_	ment, definition, history, legal framework. Sustainable development indicators. Sustainable transportation, definition, history, leg	1	_
	opment theory, case study.	,	
14Y2UI	Artificial Intelligence	KZ	2
– – .	telligence, knowledge, its representation including frames, state space search, constraints, genetic algorithms, machine learnin	1	-
20Y2UA	Artificial Neural Networks, Realization and Applications	KZ	2
	works. Basic principles. Comparing the structure of a natural and an artificial neuron. Neural classificators, predictors, compresor	1	_
•	systems. Modelling of neurons. Grossberg's equations. Learning principles. Leyered and Hopfield's nets.	o,p	
18Y2UB	Accident Biomechanics and Safety	KZ	2
	thods of Medical Diagnostics - RTG, CT, MRI, US. Dynamics of traumatic events. Factors influencing the severity of an accident	1	_
•	c. Pedestrian injuries. Injury in railway and air traffic accidents. Analysis of biomechanical events in accidents and their computa		
•	ilitation. Protective elements and safety measures in transport.		.,
23Y2VZ	Leadership and Human Resource Development	KZ	2
	udy of human resources, human resources management, corporate goals, strategies, cultural and ethical aspects. Team management	1	_
	g in human resources, ethics and corporate culture, cross-cultural differences. The labor code. Introduction into protocols.	3,	,
strategy and planning	g in numan resources, ethics and corporate culture, cross-cultural unferences. The labor code. Introduction into protocols.		
		KZ	2
13Y2VZ	Leadership of Human Resources	KZ personnel manage	_
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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-11/12

Name of the group: Jazyk nav.1.- 4.sem. 11/12

Requirement credits in the group: In this group you have to gain 8 credits

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

Credits in the group: 8

Note on the group.

note on the gro	oup.					
Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
15J2F1	Language - French 1 Eva Rezlerová, Irena Veselková	Z	2	0P+2C+10E	Z	J
15JBF2	Language - French 2 Eva Rezlerová, Irena Veselková	Z	2	0P+2C+10E	L L	J
15JBF3	Language - French 3 Eva Rezlerová, Irena Veselková	Z	2	0P+2C+10E	B Z	J
15JBF4	Language - French 4 Eva Rezlerová, Irena Veselková	ZK	2	0P+2C+10E	B L	J
15J2N1	Language - German 1 Eva Rezlerová, Martina Navrátilová, Jana Štikarová	Z	2	0P+2C+10E	B Z	J
15JBN2	Language - German 2 Eva Rezlerová, Martina Navrátilová, Jana Štikarová	Z	2	0P+2C+10E	B L	J
15JBN3	Language - German 3 Eva Rezlerová, Martina Navrátilová, Jana Štikarová	Z	2	0P+2C+10E	B Z	J

Eva Rezlerová, Martina Navrátilová, Jana Stikarová 15J2R1 Language - Russian 1	ZK	2	0P+2C+10B	L	J
Marie Michlová, Eva Rezlerová	Z	2	0P+2C+10B	Z	J
5.IBR2 Language - Russian 2	Z	2	0P+2C+10B	L	J
Marie Michlová, Eva Rezlerová 5JBR3 Language - Russian 3	Z	2	0P+2C+10B		J
5.IBR4 Language - Russian 4	ZK	2	0P+2C+10B	L	J
5J2S1 Marie Michlová, Eva Rezlerová Language - Spanish 1	Z	2	0P+2C+10B	 	J
Eva Rezierova, Nina Hricsina Puskinova	Z		+		
Eva Rezlerová, Nina Hricsina Puškinová		2	0P+2C+10B	L	J
Eva Řezlerová, Nina Hricsina Puškinová	Z	2	0P+2C+10B	Z	J
5JBS4 Language - Spanish 4 Eva Rezlerová, Nina Hricsina Puškinová	ZK	2	0P+2C+10B	L	J
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Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, feedback skills, summarising technical text content, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and technical registers and their use,

15JBS2	Language - Spanish 2	Z	2
Grammatical Structures	and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative sk	ills, feedback skill	s, summarising
technical text content, s	tructuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and	technical register	rs and their use,
language of manageme	nt.		
15JBS3	Language - Spanish 3	Z	2
Grammar and stylistics.	Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of	of language struct	ure knowledge
and perceptive and com	ımunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Woı	rk with (profession	nal) text and its
features. Practice of ora	I and written presentation.		
15JBS4	Language - Spanish 4	ZK	2
Grammar and stylistics.	Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of	of language struct	ure knowledge
and perceptive and com	ımunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Woı	rk with (profession	nal) text and its
features Practice of ora	l and written presentation		

List of courses of this pass:

Code	Name of the course	Completion	Credits
11MAG	Algorithms	KZ	4
Fundamentals of di	screte and numerical algorithms and numerical methods. Practical excersises on selected algorithms, error analysis of numerical algor variants of a numerical algorithm.	rithms, comparisor	n of possible
11STS	Stochastic Systems	Z,ZK	4
	s with the problems of mathematical modelling of dynamical systems, estimation od these models and their utilization for prediction. T		
practical tra	ansportation tasks. Mathematical theory roots from probability and mathematical statistics and they use the methods of the Bayesian	probabilistic appro	ach.
11TER	Game Theory and Optimal Decision-Making	ZK	2
-	neory, utility theory. Explicit form games, backward induction. Normal form games. Antagonistic conflict, matrix games. Repeated gam		-
Cooperative game	es without transferable payoffs. Cooperative games with transferable payoffs (imputation, core, Shapley value, nucleolus). Applications economics and transportation.	s of game theory a	bove all in
11THRO	Queuing Theory	ZK	2
Discrete event prod	cess, definition, random distribution, and probability. Basic processes, process of revitalisation. Markov process, Markov models, Kenda	all classification, m	odel M/M/1
mode	els M/M/n. Non-markovian models, model M/C/n, models G/G/n. Models with continuous flow. Service net, examples of Petri net. Com	puter 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
	plex function, holomorphic function, complex exponential series, integration, Cauchy theorem. Taylor series, Laurent series of comple		
Donivation of com	Laplace and Z-transformation.	x variable fariotiers	. Baoico ci
11Y2LG	Logics of Engineer's Judgement	KZ	2
	of engineer's judgement, its propositional and predicative logical base. Solutions of logical tasks through the methods of truthfulness a		1
3	Venn's diagram method. Logical basis for network design for the solution of technical tasks.		,
12XN1	Master Project 1	Z	2
12XN2	Master Project 2	Z	2
12XN3	Master Project 3	Z	1
12XN4	Master Project 4	Z	8
12XNDP	Master Thesis	KZ	18
12Y2BM	Safety on The Local Roads	KZ	2
	ad accidents rates, social looses. Collision points, diagrams. Tools and methods for safer road transportation. Crossroads from the point of		_
Classification of for	right of way. Roundabouts. Pedestrian transport, cyclists. Traffic lights coordination. Transport control and regulation.	of view of salety. I s	sychologica
12Y2IS	Urban Networks	KZ	2
	d the position of UN as public and technical infrastructure / utillities, metodology of the UN master planning, of UN design, UN coording		1
	operation (basic technical standards of UN, trenchless technologies for UN).	,	
12Y2KE	Landscape Ecology	KZ	2
	gy. Landscape - definition, types, evolution. Landscape systems. Anthropogenic impacts on landscape. Methods using for evaluating l		I
•	and its potential applications in landscape ecology. Landscape planning.	•	
12Y2KS	Rail Transport in Settlements and Regions	KZ	2
	nd development of railway infrastructure in Czech Republic. Arrangement of railway networks and junctions. Suburban railway services	s. Network configu	1
opera	ation of metro systems. Network configuration and operation of tram systems. Special thematic lectures (rail transport in selected coul	ntries / regions).	
12Y2MD	Methods of Traffic Regulation and Prediction	KZ	2
Basic ways of traffic	prognosis, traffic prognosis for large area (calculation of future traffic volumes, calculation of future traffic volumes between areas (ana	logical and synthet	tic methods,
	modal split, traffic distribution to road network). Shock wave in traffic flow. Service levels and their traffic volumes. Acceleration r	noise.	
12Y2MH	Measurement and Modeling of Traffic Noise	KZ	2
Theoretical introdu	uction to noise from traffic. Noise from rail transport. Noise from road traffic. Measurement and calculation of noise from rail traffic. Me	asurement and ca	lculation of
	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 of	•	
Track geometrical	characteristics on modernized railway lines. Superstructure and substructure on upgraded lines. Designing of railway stations. Bridge and realization of projects. Technical description of the tranzit corridors.	es and tunnels. Dev	elopment
12Y2OO	Protection of the Nature and Waste Management	KZ	2
	protection, its evaluating. Protected species, protected zones. Legislation. Landscape planning. Waste management. Production of w	l l	
waste, ii	ndustrial waste, dangerous waste, toxic waste. Solid waste disposal and sorted waste. Composting. Nuclear waste and nuclear waste	dump. Legislation	
12Y2PB	Navigation, Waterway Transport and Facilities	KZ	2
Characterization of	water transport, water transport facilities and principals of their construction. Lock chambers, lifts and ports. Vessels and waterways	navigation. Legal or	rder related
12Y2RD	to inland navigation and its integration to European norms. International relations in inland navigation and waterways.	KZ	2
	Realization of Transport Buildings Types. Project Documentation Types. Building Code. Land Permission and Building Permission Process. Building Process. Project Ecc	· · · —	
12Y2UD	Sustainable Transportation	KZ	2
_	pment, definition, history, legal framework. Sustainable development indicators. Sustainable transportation, definition, history, legal framework.		
	of sustainable development theory, case study.		
12Y2VT	High Speed Railways	KZ	2
	R) transport characteristics and position in transportation system. HSR vehicles types and characteristics and control-command and specific particles are characteristics and control-command and specific particles are characteristics.		- 1
interoperability. No	on-adhesion HSR systems. City traffic service by HSR. HSR operating points. HSR worldwide network. HSR routing and traffic conce construction and geometrical characteristics.	ption. Specifics of r	15K IIACK
12Y2ZK	Traffic Calming	KZ	2
	ic calming. Solution of road network organization. Urban road layouts. Psychological and physical obstacles (measures of traffic calm		
	Traffic calming measures in crossroads. Pedestrian zones. Residential streets and zones.		
13MGD	Management of Transportation Systems	Z,ZK	3
-	team, choice of team members, teamwork, leadership, training of communication and presentation skills of modern, operative and str motivation, decision support methods, organizing, organization structures, organization welfare, control, project management (focuse		
making, conflicts,	motivation, decision support methods, organizing, organization structures, organization wellare, control, project management (focuse systems in transportation (Highway Development and Management Tools).	a on PPP), decisio	on support
13XN1	Master Project 1	Z	2
13XN2	Master Project 2	Z	2
13XN3	Master Project 3	Z	1
13XN4	Master Project 4	Z	8
13XNDP	Master Thesis	KZ	18
13Y2DT	Taxes and Fees in Transport and Telecommunications	KZ	2
	d fees of the Czech Republic, comparison with customs in the EU. Purpose and kinds of taxes, fundamental terms and tax categories.		
	local and court fees. Historic development of rates of taxation of natural individual, legal entity, VAT, consumption tax.		
13Y2IM	Investment and Insurance Mathematics	KZ	2
	ninal, efficient and real. Annuity, cash flow, present and future value. Debt amortization. Investment assessment. Security pricing. Bas	•	•
insurance. Casualt	y insurance - risks, tariff groups, drivers, premium. Basics of demography, life tables, commutation functions. Capital life insurance, el insurance. Current premium, gross premium, premium reserves.	ndowment, whole li	fe. Annuity
13Y2MC	Management of Travel Services Transportation	KZ	2
	of the tourist trade, transport services, accomodation services, catering services, guide sevices, spa services, organization and service		
	and specifics of services in the tourist trade.		,
13Y2MV	Management of Transportation Quality	KZ	2
Quality manageme	nt, standards and quality standardization, quality management systems, quality management in transport and logistics, marketing and	transport quality, q	uality costs,
	quality measurement and monitoring, statistics in quality management, improving, focus on the customer.		
13Y2MZ	Environmental Management	KZ	2
	ic concepts (difference between the environment and ecology, ecosystems, sustatinable development). Main ways of environment de Ways of environment protection, the development of the environmental policy, its strategy and instruments. Voluntary instruments, their		
and global impact.	Application of the most important voluntary instruments in the practice.	importance and cit	assincation.
13Y2NU	Cost and Benefits of Transport Systems	KZ	2
	and their history, externalities and their internalization, public goods, transport funding, assessment of transport constructions and s		
MCA, CA, transp	port taxation, influence of transport constructions on public budgets, relation of transport and economic growth, importance of transport	rt in area, spatial e	conomy.
13Y2PS	Case Studies in Transportation	KZ	2
	c concepts in transport, traffic impacts on the environment and national economy, problems of energy and transport sustainability fro		
relationship of ti	ansport and macroeconomic development, investments in transport, the individual chapters will be presented to students through ca discussions, the lectures using practitioners.	se studies and sub	sequent
13Y2RK	Crisis Management	KZ	2
	is connected with solution of the following problems: \r\n <ul type="disc">crisis situations and crisis of state<!--</td--><td>I I</td><td></td>	I I	
management <td>gt;economic mobilisationsocial psychology aspectsacts and other legislative activitiesacts ac</td> <td>t;subjects of</td> <td>of economic</td>	gt; economic mobilisation social psychology aspects acts and other legislative activitiesacts ac	t; subjects of	of economic
	mobilisation and planning process		
13Y2VZ			2
	Leadership of Human Resources	KZ	. 2
THE WHOLE Dreadth	se is to provide a basic overview of issues in human resources, as an aspect of all kinds of management. This is an introduction to person	nnel management,	embracing
	se is to provide a basic overview of issues in human resources, as an aspect of all kinds of management. This is an introduction to person of HR management and taking into account the aims, strategy and culture of companies. The course deals with basic concepts of H	onnel management, R management and	embracing d directing
working teams; c	se is to provide a basic overview of issues in human resources, as an aspect of all kinds of management. This is an introduction to person	onnel management, R management and s trancultural differe	embracing d directing encies). A
working teams; o	se is to provide a basic overview of issues in human resources, as an aspect of all kinds of management. This is an introduction to person of HR management and taking into account the aims, strategy and culture of companies. The course deals with basic concepts of Hommunication in teams; planning and strategy for HR; and, finally, ethics related to human resources and company culture (as well as	onnel management, R management and s trancultural differe	embracing d directing encies). A
working teams; copresentate 14BSA	se is to provide a basic overview of issues in human resources, as an aspect of all kinds of management. This is an introduction to persor of HR management and taking into account the aims, strategy and culture of companies. The course deals with basic concepts of Hommunication in teams; planning and strategy for HR; and, finally, ethics related to human resources and company culture (as well action of current amendments to the Labour Code. The course includes training exercises and simulation games, oriented toward feedb	onnel management, R management and s trancultural differe ack and experience Z,ZK	embracing d directing encies). A e.
working teams; concentration presentate 14BSA Problems of safety	se is to provide a basic overview of issues in human resources, as an aspect of all kinds of management. This is an introduction to person of HR management and taking into account the aims, strategy and culture of companies. The course deals with basic concepts of Hommunication in teams; planning and strategy for HR; and, finally, ethics related to human resources and company culture (as well asteroid to the Labour Code. The course includes training exercises and simulation games, oriented toward feedb Software Safety - ADA	nnel management, R management and s trancultural differe ack and experience Z,ZK lance, ways of their	embracing d directing encies). A e. 6
working teams; concentration presentate 14BSA Problems of safety	se is to provide a basic overview of issues in human resources, as an aspect of all kinds of management. This is an introduction to person of HR management and taking into account the aims, strategy and culture of companies. The course deals with basic concepts of Hommunication in teams; planning and strategy for HR; and, finally, ethics related to human resources and company culture (as well asterior of current amendments to the Labour Code. The course includes training exercises and simulation games, oriented toward feedb Software Safety - ADA and reliability of software, requirements to its safety and reliability in transportation applications, problems of portability and mainter	nnel management, R management and s trancultural differe ack and experience Z,ZK lance, ways of their	embracing d directing encies). A e. 6

14MOD	Models of Transportation Processes	Z,ZK	5
The subject itrodu	ces students into numerical mathematics and into advanced approaches to modelling of complex systems and on their base explain	s differences in ap	proaches to
	modelling of particular kinds of transportation, human machine interraction and soft systems.		
4.414TCV		1/7	$\overline{}$
14MTSY	Telecommunications Systems Management	KZ	2
	area of e-communication services and relevant ecommunications networks, conditions and tools to provide optional set of services of		
hierarchal archited	cture of service management system (TMN). Positioning of broadband services, convergence trends leading to NGN. Financial criter	ia and tools as an	integral part
	of providing service.		
14PPRP	Computer Aided Project Management	KZ	2
What is the proi	ect? The basic terms a concepts of project management. Life cycle of the project and its phased approach. Analysis and specificatio	n of the assignme	nt. activity
	es, objectives and measurability. Risk events and risk planning. Project change management during implementation. Preparation of the	-	- 1
,	restrictions, assignments, calendars etc.) Project planning and optimization - time, resources.	., .,	(
4.47814		7	T 2
14XN1	Master Project 1	Z	2
14XN2	Master Project 2	Z	2
14XN3	Master Project 3	Z	1
14XN4	Master Project 4	Z	8
	•		
14XNDP	Master Thesis	KZ	18
14Y2C1	CATIA I	KZ	2
Fundaments of w	orking with CATIA, making basic parts and bodies. Making 2D sketches, geometric stucture, parametric linking, making adaptive mo	dels from 2D sketo	ches. Import
	and export of made parts and bodies. Making assemble and visualization.		
14Y2C2	CATIA II	KZ	2
	c course. Modeling compound bodies. Possibility of enumeration, comunications with other systems. Surface x solid bodies. Kinemat	1	1 1
LATERISION OF DASI		ic mechanism. Fro	Ject making
	and project cooperation. Outputs of projects.		
14Y2CS	Sensitivity of Systems	KZ	2
Design of system	ns with defined reliability. The impact of changing parameters and subsystems within a system. System sensitivity computing, definiti	on of sensitivity fur	nctions and
	matrices and their usability in system design.		
14Y2JM	One-Chip Controllers	KZ	2
One-chip cont	trollers architecture, embedded peripherals (counters, timers, converters, ports) and their utilisation. Practical tasks are programmed	1	1 1
14Y2OP		KZ	2
_	Object Oriented Programming in Transport	1	
Class, object, end	capsulation, inheritance, polymorphism, templates, retyping, stream, exceptions, repository, collections, virtual methods and classes.	Problem cases wi	ii be chosen
	from microscopic simulation system, discrete event simulation, celular automata simulation and virtual life area.		
14Y2PH	CAD Interface Programming	KZ	2
Introduction to CAI	D interface programming techniques with the help of LIST and VBA programming languages. Possibilities of proper objects (commar	nds), dialogues, int	terfaces, and
	applications creation in CAD systems. Programming of cooperation with other applications (databases, spread-sheets).		
14Y2PI	Process Information Systems in Transportation	KZ	2
	detailed usage of transport information systems, e.g. EFC, ePurse and transport check-in systems for public transport with focus on a	1	
	riented Architecture). Information systems, e.g. Et o., et dise and transport check-in systems to public transport with locus on a		- 1
14Y2PJ	C++ Programming Language	KZ	2
OOP philosophy ar	nd basics of C++ programming language. Class, object, constructor, destructor, inheritance, abstract class, virtual methods, exceptions	, streams, method	and operator
	overloading, abstract data type implementation in C++.		
14Y2TU	Telecommunications Systems and Multimedia	KZ	2
	ommunications namely applied in transport solutions, identification and quantification of telecommunications networks and services pe		on redundant
	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, ma		
14ZBS	Company Knowledge Bases	Z	2
Basic temrs explan	nation, introduction to knowledge bas, expert systems, approach to shared knowledge and data security. Methodology of general and	d "data-based" kno	wledge base
	creation. Knowledge mining from large databases and Internet, basics of reporting services principles with respect to operativ	e use.	
15DPS	Transportation Psychology	Z	2
	pgy and its basic concepts. Information intake, decision-making and behaviour. Performance. Engineering psychology and vehicle cons	1	1
	el route and traffic conditions, accidents and traffic incidents. Selection and training of the staff. Work and leisure. Age as a factor in t	=	
15J2A1	Language - English 1	Z	2
	resentation Skills - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work		
15J2F1	Language - French 1	Z	2
Grammatical Struc	ctures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills	s, feedback skills, s	summarising
technical text conte	ent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and te	chnical registers a	and their use,
	language of management.		
15J2N1	Language - German 1	Z	2
	tures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills	1	1
	ent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and te		- 1
	language of management.	onoar rogisters a	
45 105 1			
15J2R1	Language - Russian 1	Z	2
	ctures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills		- 1
technical text conte	ent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and te	chnical registers a	and their use,
	language of management.		
15J2S1	Language - Spanish 1	Z	2
	ctures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills	1	1
	ent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and te		- 1
	language of management.		
4E ID 40			+
15JBA2	Language - English 2	Z	2
Р	resentation Skills - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work	engagement.	

Language - English 3 alysis of expert texts and their production; Preparation for overseas work en FCE, CAE. Language - English 4 alysis of expert texts and their production; Preparation for overseas work en FCE, CAE. Language - French 2 opics relating to transportation sciences. Developing perceptive and communinutes, elementary rhetorics of foreign language and practical application, language of management. Language - French 3	ZK gagement.Optional courses for ce	ertificates
alysis of expert texts and their production; Preparation for overseas work en FCE, CAE. Language - French 2 opics relating to transportation sciences. Developing perceptive and communinutes, elementary rhetorics of foreign language and practical application, language of management. Language - French 3	gagement.Optional courses for ce	
alysis of expert texts and their production; Preparation for overseas work en FCE, CAE. Language - French 2 opics relating to transportation sciences. Developing perceptive and communinutes, elementary rhetorics of foreign language and practical application, language of management. Language - French 3	gagement.Optional courses for ce	2
opics relating to transportation sciences. Developing perceptive and communinutes, elementary rhetorics of foreign language and practical application, language of management. Language - French 3		
ninutes, elementary rhetorics of foreign language and practical application, language of management. Language - French 3		2
language of management. Language - French 3	inicative skills, feedback skills, sun	mmarising
	formal and technical registers and	I their use
	Z	2
ional topics based on the language level and study focus at the Faculty. Imp		
ment. Basic stylistic forms. Presentation of own knowledge in oral and writte features. Practice of oral and written presentation.		ext and its
Language - French 4	ZK	2
cional topics based on the language level and study focus at the Faculty. Impent. Basic stylistic forms. Presentation of own knowledge in oral and writte features. Practice of oral and written presentation.		_
Language - German 2	Z	2
opics relating to transportation sciences. Developing perceptive and commu	ınicative skills, feedback skills, sun	mmarising
ninutes, elementary rhetorics of foreign language and practical application, language of management.		
Language - German 3	Z	2
ional topics based on the language level and study focus at the Faculty. Imp	provement of language structure k	nowledge
ment. Basic stylistic forms. Presentation of own knowledge in oral and writte features. Practice of oral and written presentation.	en form. Work with (professional) te	ext and its
Language - German 4	ZK	2
ional topics based on the language level and study focus at the Faculty. Imp	provement of language structure ki	nowledge
ment. Basic stylistic forms. Presentation of own knowledge in oral and writte features. Practice of oral and written presentation.	en form. Work with (professional) te	ext and its
Language - Russian 2	Z	2
opics relating to transportation sciences. Developing perceptive and commu	unicative skills, feedback skills, sun	nmarising
ninutes, elementary rhetorics of foreign language and practical application, language of management.	formal and technical registers and	I their use
Language - Russian 3	7	2
ional topics based on the language level and study focus at the Faculty. Imp	-	_
ment. Basic stylistic forms. Presentation of own knowledge in oral and writte		_
features. Practice of oral and written presentation.	, ,	
Language - Russian 4	ZK	2
ional topics based on the language level and study focus at the Faculty. Imp	provement of language structure k	nowledge
ment. Basic stylistic forms. Presentation of own knowledge in oral and writte features. Practice of oral and written presentation.	en form. Work with (professional) te	ext and its
Language - Spanish 2	Z	2
opics relating to transportation sciences. Developing perceptive and commu	ınicative skills, feedback skills, sun	nmarising
ninutes, elementary rhetorics of foreign language and practical application, language of management.	formal and technical registers and	I their use
Language - Spanish 3	Z	2
ional topics based on the language level and study focus at the Faculty. Imp		
ment. Basic stylistic forms. Presentation of own knowledge in oral and writte features. Practice of oral and written presentation.		_
Language - Spanish 4	ZK	2
ional topics based on the language level and study focus at the Faculty. Imp		
ment. Basic stylistic forms. Presentation of own knowledge in oral and writte features. Practice of oral and written presentation.	en form. Work with (professional) te	ext and its
Master Project 1	Z	2
Master Project 2	Z	2
Master Project 3	Z	1
Master Project 4	Z	8
Master Thesis	KZ	18
tion Psychology in German Speaking Countries	KZ	2
o the work with texts (Physics for drivers, abusing alcohol during driving, extraffic, traffic accident, traffic psychology in the internet etc.)	l l	_
Road Transport History	KZ	2
	l l	
iediveal patriways. Development of road traffic in the modern period, accele	elopment of road travelling in mode	rn period
c and construction layers. Beginning of modern road civil engineering. Deve	KZ	2
c and construction layers. Beginning of modern road civil engineering. Deve ad intercections, bridges and traffic control, development of road signs.		
	mediveal pathways. Development of road traffic in the modern period, accele	mediveal pathways. Development of road traffic in the modern period, acceleration of road transport development of road transport development of road travelling in modern road civil engineering. Development of road travelling in mode on intercections, bridges and traffic control, development of road signs.

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.		
15Y2PS	Practical Spanish for Transportation, Management and Business	KZ	2
Development of	communication skills, training of correct written expression of formal character, basic technical vocabulary, cultural specifics of the S	panish speaking o	ountries.
15Y2PT	Terminology of transport and commerce, business letter. Food in Transportation	KZ	2
	r Interaction transportation and foodstuffs. The health risks. Hygienic safeguard. The practical examples from the Czech Republic and	I	
,	dining cars, work trains and other railroad equipment. Legislation.		
15Y2PU	Publications and Their Creation	KZ	2
Scientific texts type	bes. Footnotes and references. Exploration of facts. Quotations. Formal document layout. Working with information databases. Typogr	aphic principles. Ty	pographic
45)(000	editors - MS Word, Tex/LaTeX. Practical creation of simple scientific documents.	147	
15Y2SP	Seminar on Political Philosophy Interpreting of philosophical texts, view of society, state and their system of government.	KZ	2
15Y2SR	Stylistics and Rhetorics	KZ	2
	and written expression as a means of human communication. Basic information about speech, articulation, oral and written language	l .	
	ng. Language semantics, language syntactic and the pragmatic aspect. Creative thought and its oral and written expression. Practice -		
15Y2TS	Technician and Contemporary Society	KZ	2
Why to take off a ha	at in a room and open a door for a lady, are there simple solutions, science vs belief, do we need to know or is it enough to turn on a	PC, it must be true	- it's on the
40)/14	Internet and in newspapers, what are the sights for, interest in public affairs - a hangover from the past?	_	
16XN1	Master Project 1	Z	2
16XN2	Master Project 2	Z	2
16XN3	Master Project 3	Z	1
16XN4	Master Project 4	Z	8
16XNDP	Master Thesis	KZ	18
16Y2HP	Vehicle Hygiene onomy of vehicles and the influence on man and nature. National and international law related to the hygiene. Noise and vibrations - s	KZ	2
	ys of measuring, prevention, elimination. Exhausts - creation, measurement, reduction, non-regular fuels and drives. Ergonomy - sitting		
	reach. Condition - heating, ventilation, air-conditioning, filtration, tiredom.	, ,	
16Y2KV	Car Body Design	KZ	2
	ody, high-load car body, bus car body, and motorcycle as a construction set. Principles of design, production, testing and operation.		
construction. Activ	e and passive safety parts. Ergonomics, HMI, view out of the vehicle, operational extent, view behind the car. Conditioning tools, sign	naling function. Aer	odynamics
16Y2PG	of the car body. Design and artistic design principles. Practical training.	KZ	2
	Computer Graphics and Virtual Reality on and processing of bitmap and vector 2D graphics, 3D virtual scenes and algorithms used for their computerized processing. Adopting	I	
	eware tools for creation and processing of 2D, 3D and interactive graphics, and basics of programming language VRML and graphic I		
16Y2PU			
101250	Principles of Vehicle Design	KZ	2
16Y2ST	Principles of Vehicle Design Special Technologies in Transport and Telecommunications	KZ KZ	2
16Y2ST		KZ	2
16Y2ST Micro, nano and	Special Technologies in Transport and Telecommunications special technologies, electric arc and its applications, plasma technologies, dipping, beam technologies, electron beams technology vehicles, laser and laser technologies, soldering, gluing, ultrasound, diffusion, friction and explosion technologies, micro stoves	KZ in roduction and m	2 ending of
16Y2ST Micro, nano and	Special Technologies in Transport and Telecommunications special technologies, electric arc and its applications, plasma technologies, dipping, beam technologies, electron beams technology vehicles, laser and laser technologies, soldering, gluing, ultrasound, diffusion, friction and explosion technologies, micro stoves Transportation and Building Technology and Equipment	KZ in roduction and m s, gas.	2 ending of 2
16Y2ST Micro, nano and 16Y2TT Transportation a	Special Technologies in Transport and Telecommunications special technologies, electric arc and its applications, plasma technologies, dipping, beam technologies, electron beams technology vehicles, laser and laser technologies, soldering, gluing, ultrasound, diffusion, friction and explosion technologies, micro stoves Transportation and Building Technology and Equipment and building technology and equipment. Transport of solid and mass material, soil and rock above all. Highway and underground cons	KZ in roduction and m s, gas. KZ tructions. Transpor	2 ending of 2 t surface
16Y2ST Micro, nano and 16Y2TT Transportation a	Special Technologies in Transport and Telecommunications special technologies, electric arc and its applications, plasma technologies, dipping, beam technologies, electron beams technology vehicles, laser and laser technologies, soldering, gluing, ultrasound, diffusion, friction and explosion technologies, micro stoves Transportation and Building Technology and Equipment and building technology and equipment. Transport of solid and mass material, soil and rock above all. Highway and underground const n and construction features, delivered mass calculation, economy of operation. Technics and technology of underground constructions	KZ in roduction and m s, gas. KZ tructions. Transpor	2 ending of 2 t surface
16Y2ST Micro, nano and 16Y2TT Transportation a vehicles, descriptio	Special Technologies in Transport and Telecommunications special technologies, electric arc and its applications, plasma technologies, dipping, beam technologies, electron beams technology vehicles, laser and laser technologies, soldering, gluing, ultrasound, diffusion, friction and explosion technologies, micro stoves Transportation and Building Technology and Equipment and building technology and equipment. Transport of solid and mass material, soil and rock above all. Highway and underground cons n and construction features, delivered mass calculation, economy of operation. Technics and technology of underground constructions management methodology (ultrasound, laser, GPS, total stations).	KZ in roduction and m , gas. KZ tructions. Transpor s. Terrestrial vehicle	2 ending of 2 t surface es operation
16Y2ST Micro, nano and 16Y2TT Transportation a vehicles, descriptio	Special Technologies in Transport and Telecommunications special technologies, electric arc and its applications, plasma technologies, dipping, beam technologies, electron beams technology vehicles, laser and laser technologies, soldering, gluing, ultrasound, diffusion, friction and explosion technologies, micro stoves Transportation and Building Technology and Equipment and building technology and equipment. Transport of solid and mass material, soil and rock above all. Highway and underground const n and construction features, delivered mass calculation, economy of operation. Technics and technology of underground constructions	KZ in roduction and m ;, gas. KZ tructions. Transpor s. Terrestrial vehicle	2 ending of 2 t surface es operation
16Y2ST Micro, nano and 16Y2TT Transportation a vehicles, descriptio 17LOGR Logistics chain. Lo	Special Technologies in Transport and Telecommunications special technologies, electric arc and its applications, plasma technologies, dipping, beam technologies, electron beams technology vehicles, laser and laser technologies, soldering, gluing, ultrasound, diffusion, friction and explosion technologies, micro stoves Transportation and Building Technology and Equipment and building technology and equipment. Transport of solid and mass material, soil and rock above all. Highway and underground cons in and construction features, delivered mass calculation, economy of operation. Technics and technology of underground constructions management methodology (ultrasound, laser, GPS, total stations). Logistics Chains ogistics system. Horizontal and vertical dimensions of logistics integration. The types of logistics chains. Logistics chain with continual lows. Management based on an independent method of planning. Management based on planing in closed circle with information fee	KZ in roduction and m i, gas. KZ tructions. Transpor s. Terrestrial vehicle Z,ZK I flows, with interru	2 t surface es operation 5 pted flows,
16Y2ST Micro, nano and 16Y2TT Transportation a vehicles, descriptio 17LOGR Logistics chain. Lowith synchronous fl	Special Technologies in Transport and Telecommunications special technologies, electric arc and its applications, plasma technologies, dipping, beam technologies, electron beams technology vehicles, laser and laser technologies, soldering, gluing, ultrasound, diffusion, friction and explosion technologies, micro stoves Transportation and Building Technology and Equipment and building technology and equipment. Transport of solid and mass material, soil and rock above all. Highway and underground cons in and construction features, delivered mass calculation, economy of operation. Technics and technology of underground constructions management methodology (ultrasound, laser, GPS, total stations). Logistics Chains signification of the provided and the provided an	KZ in roduction and m i, gas. KZ tructions. Transpor s. Terrestrial vehicle Z,ZK I flows, with interru	2 t surface es operation 5 pted flows, sition of the
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16Y2ST Micro, nano and 16Y2TT Transportation a vehicles, descriptio 17LOGR Logistics chain. Lowith synchronous fless that the s	Special Technologies in Transport and Telecommunications special technologies, electric arc and its applications, plasma technologies, dipping, beam technologies, electron beams technology vehicles, laser and laser technologies, soldering, gluing, ultrasound, diffusion, friction and explosion technologies, micro stoves Transportation and Building Technology and Equipment and building technology and equipment. Transport of solid and mass material, soil and rock above all. Highway and underground cons n and construction features, delivered mass calculation, economy of operation. Technics and technology of underground constructions management methodology (ultrasound, laser, GPS, total stations). Logistics Chains ogistics system. Horizontal and vertical dimensions of logistics integration. The types of logistics chains. Logistics chain with continual lows. Management based on an independent method of planning. Management based on planning in closed circle with information fee decoupling point in a logistics chain. Chain effects. Case studies. Master Project 1 Master Project 2	KZ in roduction and m ;, gas. KZ tructions. Transpor s. Terrestrial vehicle Z,ZK I flows, with interru edback. Possible po	2 t surface es operation 5 pted flows, sition of the 2 2
16Y2ST Micro, nano and 16Y2TT Transportation a vehicles, descriptio 17LOGR Logistics chain. Lowith synchronous flatory and the synchronous f	Special Technologies in Transport and Telecommunications special technologies, electric arc and its applications, plasma technologies, dipping, beam technologies, electron beams technology vehicles, laser and laser technologies, soldering, gluing, ultrasound, diffusion, friction and explosion technologies, micro stoves Transportation and Building Technology and Equipment and building technology and equipment. Transport of solid and mass material, soil and rock above all. Highway and underground cons n and construction features, delivered mass calculation, economy of operation. Technics and technology of underground constructions management methodology (ultrasound, laser, GPS, total stations). Logistics Chains ogistics system. Horizontal and vertical dimensions of logistics integration. The types of logistics chains. Logistics chain with continual lows. Management based on an independent method of planning. Management based on planning in closed circle with information fee decoupling point in a logistics chain. Chain effects. Case studies. Master Project 1 Master Project 2 Master Project 3	KZ in roduction and m s, gas. KZ tructions. Transpor s. Terrestrial vehicle Z,ZK I flows, with interru dback. Possible po	2 t surface es operation 5 pted flows, sition of the 2 1
16Y2ST Micro, nano and 16Y2TT Transportation a vehicles, descriptio 17LOGR Logistics chain. Lowith synchronous fl 17XN1 17XN2 17XN3 17XN4	Special Technologies in Transport and Telecommunications special technologies, electric arc and its applications, plasma technologies, dipping, beam technologies, electron beams technology vehicles, laser and laser technologies, soldering, gluing, ultrasound, diffusion, friction and explosion technologies, micro stoves Transportation and Building Technology and Equipment and building technology and equipment. Transport of solid and mass material, soil and rock above all. Highway and underground cons n and construction features, delivered mass calculation, economy of operation. Technics and technology of underground constructions management methodology (ultrasound, laser, GPS, total stations). Logistics Chains ogistics system. Horizontal and vertical dimensions of logistics integration. The types of logistics chains. Logistics chain with continual ows. Management based on an independent method of planning. Management based on planing in closed circle with information fee decoupling point in a logistics chain. Chain effects. Case studies. Master Project 1 Master Project 2 Master Project 3 Master Project 4	KZ in roduction and m s, gas. KZ tructions. Transpor s. Terrestrial vehicle Z,ZK I flows, with interru dback. Possible po	2 t surface as operation 5 pted flows, sition of the 2 1 8
16Y2ST Micro, nano and 16Y2TT Transportation a vehicles, descriptio 17LOGR Logistics chain. Lowith synchronous flatory 17XN1 17XN2 17XN3 17XN4 17XNDP	Special Technologies in Transport and Telecommunications special technologies, electric arc and its applications, plasma technologies, dipping, beam technologies, electron beams technology vehicles, laser and laser technologies, soldering, gluing, ultrasound, diffusion, friction and explosion technologies, micro stoves Transportation and Building Technology and Equipment and building technology and equipment. Transport of solid and mass material, soil and rock above all. Highway and underground cons n and construction features, delivered mass calculation, economy of operation. Technics and technology of underground constructions management methodology (ultrasound, laser, GPS, total stations). Logistics Chains ogistics system. Horizontal and vertical dimensions of logistics integration. The types of logistics chains. Logistics chain with continual ows. Management based on an independent method of planning. Management based on planing in closed circle with information fee decoupling point in a logistics chain. Chain effects. Case studies. Master Project 1 Master Project 1 Master Project 3 Master Project 4 Master Thesis	KZ in roduction and m i, gas. KZ tructions. Transpor s. Terrestrial vehicle Z,ZK I flows, with interru dback. Possible po	2 t surface as operation 5 pted flows, sition of the 2 1 8 18
16Y2ST Micro, nano and 16Y2TT Transportation a vehicles, descriptio 17LOGR Logistics chain. Lowith synchronous flatory 17XN1 17XN2 17XN3 17XN4 17XNDP 17Y2BU	Special Technologies in Transport and Telecommunications special technologies, electric arc and its applications, plasma technologies, dipping, beam technologies, electron beams technology vehicles, laser and laser technologies, soldering, gluing, ultrasound, diffusion, friction and explosion technologies, micro stoves Transportation and Building Technology and Equipment and building technology and equipment. Transport of solid and mass material, soil and rock above all. Highway and underground const nand construction features, delivered mass calculation, economy of operation. Technics and technology of underground constructions management methodology (ultrasound, laser, GPS, total stations). Logistics Chains spisitics system. Horizontal and vertical dimensions of logistics integration. The types of logistics chains. Logistics chain with continual ows. Management based on an independent method of planning. Management based on planing in closed circle with information fee decoupling point in a logistics chain. Chain effects. Case studies. Master Project 1 Master Project 2 Master Project 3 Master Project 4 Master Thesis Stock Market and Investment Companies	KZ in roduction and m i, gas. KZ tructions. Transpor s. Terrestrial vehicle Z,ZK I flows, with interru dback. Possible po	2 t surface es operation 5 pted flows, sition of the 2 1 8 18 2
16Y2ST Micro, nano and 16Y2TT Transportation a vehicles, descriptio 17LOGR Logistics chain. Lowith synchronous flates and the synchronous flates are synchronous flates are synchronous flates and the synchronous flates are synchronous flates and the synchronous flates are synchronous	Special Technologies in Transport and Telecommunications special technologies, electric arc and its applications, plasma technologies, dipping, beam technologies, electron beams technology vehicles, laser and laser technologies, soldering, gluing, ultrasound, diffusion, friction and explosion technologies, micro stoves Transportation and Building Technology and Equipment and building technology and equipment. Transport of solid and mass material, soil and rock above all. Highway and underground cons n and construction features, delivered mass calculation, economy of operation. Technics and technology of underground constructions management methodology (ultrasound, laser, GPS, total stations). Logistics Chains ogistics system. Horizontal and vertical dimensions of logistics integration. The types of logistics chains. Logistics chain with continual ows. Management based on an independent method of planning. Management based on planing in closed circle with information fee decoupling point in a logistics chain. Chain effects. Case studies. Master Project 1 Master Project 2 Master Project 3 Master Project 4 Master Project 4 Master Thesis Stock Market and Investment Companies ch the students to understand the financial and capital markets, especially the financial system, market determination of discount rate	KZ in roduction and m i, gas. KZ tructions. Transpor s. Terrestrial vehicle Z,ZK I flows, with interru idback. Possible po	2 t surface es operation 5 pted flows, sition of the 2 1 8 18 2 analysis and
16Y2ST Micro, nano and 16Y2TT Transportation a vehicles, descriptio 17LOGR Logistics chain. Lowith synchronous flates and the synchronous flates are synchronous flates are synchronous flates and the synchronous flates are synchronous flates and the synchronous flates are synchronous	Special Technologies in Transport and Telecommunications special technologies, electric arc and its applications, plasma technologies, dipping, beam technologies, electron beams technology vehicles, laser and laser technologies, soldering, gluing, ultrasound, diffusion, friction and explosion technologies, micro stoves Transportation and Building Technology and Equipment and building technology and equipment. Transport of solid and mass material, soil and rock above all. Highway and underground const nand construction features, delivered mass calculation, economy of operation. Technics and technology of underground constructions management methodology (ultrasound, laser, GPS, total stations). Logistics Chains spisitics system. Horizontal and vertical dimensions of logistics integration. The types of logistics chains. Logistics chain with continual ows. Management based on an independent method of planning. Management based on planing in closed circle with information fee decoupling point in a logistics chain. Chain effects. Case studies. Master Project 1 Master Project 2 Master Project 3 Master Project 4 Master Thesis Stock Market and Investment Companies	KZ in roduction and m i, gas. KZ tructions. Transpor s. Terrestrial vehicle Z,ZK I flows, with interru idback. Possible po	2 t surface es operation 5 pted flows, sition of the 2 1 8 18 2 analysis and
16Y2ST Micro, nano and 16Y2TT Transportation a vehicles, descriptio 17LOGR Logistics chain. Lowith synchronous flates and the synchronous flates are synchronous flates are synchronous flates and the synchronous flates are synchronous flates and the synchronous flates are synchronous	Special Technologies in Transport and Telecommunications special technologies, electric arc and its applications, plasma technologies, dipping, beam technologies, electron beams technology vehicles, laser and laser technologies, soldering, gluing, ultrasound, diffusion, friction and explosion technologies, micro stoves Transportation and Building Technology and Equipment and building technology and equipment. Transport of solid and mass material, soil and rock above all. Highway and underground const nand construction features, delivered mass calculation, economy of operation. Technics and technology of underground constructions management methodology (ultrasound, laser, GPS, total stations). Logistics Chains ogistics system. Horizontal and vertical dimensions of logistics integration. The types of logistics chains. Logistics chain with continual ows. Management based on an independent method of planning. Management based on planing in closed circle with information fee decoupling point in a logistics chain. Chain effects. Case studies. Master Project 1 Master Project 2 Master Project 3 Master Project 4 Master Thesis Stock Market and Investment Companies ch the students to understand the financial and capital markets, especially the financial system, market determination of discount rate ies. Investor liquidity. Investment companies, its types, management and performance measuring of a portfolio, agiotage and arbitrage.	KZ in roduction and m i, gas. KZ tructions. Transpor s. Terrestrial vehicle Z,ZK I flows, with interru idback. Possible po	2 t surface es operation 5 pted flows, sition of the 2 1 8 18 2 analysis and
16Y2ST Micro, nano and 16Y2TT Transportation a vehicles, descriptio 17LOGR Logistics chain. Lowith synchronous flate in the synchronous flate in	Special Technologies in Transport and Telecommunications special technologies, electric arc and its applications, plasma technologies, dipping, beam technologies, electron beams technology vehicles, laser and laser technologies, soldering, gluing, ultrasound, diffusion, friction and explosion technologies, micro stoves Transportation and Building Technology and Equipment and building technology and equipment. Transport of solid and mass material, soil and rock above all. Highway and underground cons in and construction features, delivered mass calculation, economy of operation. Technics and technology of underground constructions management methodology (ultrasound, laser, GPS, total stations). Logistics Chains Ungistics system. Horizontal and vertical dimensions of logistics integration. The types of logistics chains. Logistics chain with continual ows. Management based on an independent method of planning. Management based on planing in closed circle with information fee decoupling point in a logistics chain. Chain effects. Case studies. Master Project 1 Master Project 2 Master Project 3 Master Project 4 Master Thesis Stock Market and Investment Companies ch the students to understand the financial and capital markets, especially the financial system, market determination of discount rate ies. Investor liquidity. Investment companies, its types, management and performance measuring of a portfolio, agiotage and arbitragy volatility and risks.	KZ in roduction and m i, gas. KZ tructions. Transpor s. Terrestrial vehicle Z,ZK I flows, with interru edback. Possible po	2 ending of 2 t surface es operation 5 pted flows, esition of the 2 1 8 18 2 analysis and enstruments,
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17Y2LS			
	Logistic Systems	KZ	2
Logistics systems	create a set of specific activities that are interconnected by interactive links. The base of these systems forms: stock control and inven	tory management	, integrated
	transportation systems, management systems and logistics partnership formation and logistic alliances formation.		
17Y2MS	Microsimulation of Railway Operation	KZ	2
Introduction to the	characteristics of simulation tools, creation of a simulation model of railway infrastructure, verification of a specific operational concept	ot on the given infr	astructure,
adaptation of the in	frastructure model and modification to the infrastructure to allow the implementation of the proposed operational concept. Stability tes	ts and evaluations	. Evaluation
	of sensitivity of the operational concept to delays.		
17Y2P	Insurance Bussiness	KZ	2
	rance bussiness - history and progress. Insurance company, insurance - sorts. Risks and damages. Reinsurance company, principle of		_
17Y2PR		KZ	2
	Carriage Processes al liability. Ordering and contracting of carriage. Intergovernmental conventions on international carriage. Contract on passenger carriage.	I	ļ.
	tract. Liability and rights based on carrying contract. Contractual carrying conditions. Guarantee of carrying contract by more operator	_	-
I diwalding con	commercial terms (INCOTERMS). Tariff and calculation of prices.	5. Internationally a	accepted
47\/000		1/7	
17Y2PS	Case Studies in Transportation	KZ	2
· ·	discussions on the topics - the impact of transport on the environment and the economy, energy, construction of transport infrastructu		
lesson presente	d one current and the real issue, which solutions will have to think of each other. Each of them will be represent another role (public at	utnorities, investor	rs, carrier
(=) (= D = D	representative interest groups, residents, etc.).		
17Y2RS	Regional Transport - Mobility of Small Towns	KZ	2
Basic terms, netwo	rks of railway and bus lines, alternative forms of regional transport, influence in regional transport in vicinity of big cities, solutions of particles and the second se	assenger and freig	transport
	in regions, activities related to regional transport, passenger transport safety in regions.		
17Y2RZ	Control of Transport Processes	KZ	2
Theoretical bases	transport system, decomposition, factors influencing control, quality diagnosis, methods of control, systems for decision making supp	port, risk of decision	on making,
	telematics.		
17Y2SG	Systematic Creating of Railway Timetables	KZ	2
	Capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds and s	upplements. Rollin	g 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
	g transport demand, modal-split, traffic flows distribution on public transit network. Line network optimization and configuration. Timeta		l
	d periodic timetable. Rolling stock circulation, staff and crew services optimization and their order to rosters. Framework legislation, non-		
accontaining anticognicate	of public transport. Marketing.	zamer emeete ame	a p. 0.0.0.00
18XN1	Master Project 1	Z	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
	n the vehicle and transport routes and their influence on the stress and strain components of the vehicle structure or behavior of traffi		_
	and transport routes. Vibration of systems with a finite number of degrees of freedom. Methods of constant stiffness and constant com		-
	of structural systems. Criteria for the admissibility of oscillation.		
18Y2FZ			
	Physical foundation of materials' properties	K7	2
	Physical foundation of materials' properties	KZ	2 n materials'
	attice defects influence on properties of materials, stiffness, plasticity, strength, fracture, fatigue, creep, corrosion, effects of environm		
Atomistic models,	attice defects influence on properties of materials, stiffness, plasticity, strength, fracture, fatigue, creep, corrosion, effects of environm behavior are the main discussed topics.	nent and loading or	n materials'
Atomistic models,	attice defects influence on properties of materials, stiffness, plasticity, strength, fracture, fatigue, creep, corrosion, effects of environm behavior are the main discussed topics. Reliability and Diagnostics, Experimental Methods	nent and loading or	n materials'
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	System Transport Strategy	l KZ	3
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porccoesses of stra	ategical thinkig, system of strategical management, application space of strategies with link to sustainable development, tools for master	ering of strategies	with support
	of geoinformatical enegineer technologies.		
20TSS	Telematic Systems and Services	Z,ZK	3
Telematic theory,	telematic architecture, FRAME, cooperative systems - technologies, principles and aplications, European electronic toll service, traffi	c information syste	ems, e-call,
	automated vehicle systems, European railway traffic management system.		_
20XN1	Master Project 1	Z	2
20XN2	Master Project 2	Z	2
20XN3	Master Project 3	Z	1
20XN4	Master Project 4	Z	8
20XNDP	Master Thesis	KZ	18
20Y2AP	Computer Systems Architecture	KZ	2
Description of o	computer architecture principles, e.g. von Neumann's model, pipelining, different coupling of systems, transmission protocols, systolic	systems, parallel	systems
classification, etc. T	he Amdahl's law, effectiveness of parallel systems performance measurement, RISC and CICS architectures, superscalar architecture	es, mass parallel a	rchitectures
	and symmetric multiprocessing explained on many examples.		
20Y2MK	Quality Tools in the Development Phase	KZ	2
Overview of quality	management methods, data acquisition and analysis of customer requirements, methods, QFD, DFM, DFA, DFS. FMEA (Analysis of de	fects and their con	sequences).
	Introduction to concurrent (team) design.		r
20Y2NE	Design of Experiments in the Development Phase	KZ	2
	ment in the development of cars. A detailed overview of their own methods. Applied Statistics. Laboratory tests of durability, performan		
	vibration, corrosion testing, analysis of customer satisfaction, specific expert system for the VDS, the relationship with FMEA (failure		
20Y2PR	Prediction of time series	KZ	2
	series prediction, meaning of prediction, basics of quantitative prediction. Methods for predictive quality evaluation, descriptive statistic		
prediction, predic	tion for general formula of loss function. Calculation and programming environment R. Regression models, basics of linear regression	n, simple regressio	n. Multiple
20) (275	regression, statistical tests of linear dependence, selection of input variables.	147	
20Y2TE	Technology of Electronic Systems	KZ	2
Principle technolog	ies for an effective operation of electronically controlled systems. Maintaining, meassuring, optimization of safety and reliability of con	nplex systems. Sei	miconductor
00)/0114	technologies, printed circuits, assembly operations, interconnection and repairs technologiesusers and operators.	1/7	
20Y2UA	Artificial Neural Networks, Realization and Applications	KZ	2
History of neural ne	stworks. Basic principles. Comparing the structure of a natural and an artificial neuron. Neural classificators, predictors, compresors, ex	-	specialised
04.7.014	functional blocs and systems. Modelling of neurons. Grossberg's equations. Learning principles. Leyered and Hopfield's net		
21XN1	Master Project 1	Z	2
21XN2	Master Project 2	Z	2
21XN3	Master Project 3	Z	1
21XN4	Master Project 4	Z	8
	Master Thesis		
21XNDP	iviasiei Triesis	KZ	18
21XNDP 21Y2LZ	Human Recources and Projects in Aviation	KZ KZ	18 2
21Y2LZ		KZ	2
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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	18
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. Aco	ustic actuators, lou	idspeakers.
Acoustic sensors, r	nicrophones. Fundamentals of acoustic signal processing. Acoustics of closed spaces. Fundamentals of acoustics in solids. Acoustic	problems in transpo	ort and their
	solutions.		
23Y2NE	Design of Electronic Equipments	V7	2
ZSTZINE	Design of Electronic Equipments	KZ	2
	realization of semiconductor electronic components, basic electronic devices division. Sources, input and output elements, process		_
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