Study plan

Name of study plan: TR nav.prez.15/16

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: 50 Elective courses credits: 0 Sum of credits in the plan: 50 Note on the plan:

Name of the block: Semestrální projekt Minimal number of credits of the block: 4 The role of the block: ZP

Code of the group: XN TR 1.-2. 13/14 Name of the group: Projekt 1.-2.sem TR 13/14 Requirement credits in the group: In this group you have to gain 4 credits Requirement courses in the group: In this group you have to complete 2 courses Credits in the group: 4 Note on the group:

<i>.</i>					
Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors, and quarantors (gar)	Completion	Credits	Scope	Semester	Role
Master Project 1	7	2		2 7	70
	2	2			ZP
Master Project 1 Zuzana arská, Dagmar Ko árková, Iva Šturmová, Kristýna Neubergová, Martin Jacura, Jan Kruntorád, Ond ej Trešl, David Vodák, Tomáš Javo ík,	Z	2	0P+2C+4E	B Z	ZP
Master Project 1	Z	2	0P+2C+4E	B Z	ZP
Master Project 1 Michal Frydrýn, Karel Kocián, Luboš Nouzovský, Zden k Svatý, Jakub Nová ek	Z	2	0P+2C+4E	8 Z	ZP
Master Project 1 Jakub Kraus, Andrej Lališ, Slobodan Stoji , Terézia Pilmannová, Jakub Hospodka, Lenka Hanáková, Vladimír Socha, Peter Vittek	z	2	0P+2C+4E	B Z	ZP
Master Project 1	Z	2	0P+2C+4E	B Z	ZP
Master Project 1 Václav Rada	Z	2	0P+2C+4E	8 Z	ZP
Master Project 1 Václav Baroch, Michal Drábek, Alexandra Dvo á ková, Veronika Faifrová, Eliška Glaserová, Rudolf F. Heidu, Tomáš Horák, Vít Janoš, Milan K íž,	Z	2	0P+2C+4E	B Z	ZP
Master Project 1	Z	2	0P+2C+4E	B Z	ZP
Master Project 1	Z	2	0P+2C+4E	Z	ZP
Master Project 1	Z	2	0P+2C+4E	B Z	ZP
Master Project 2	Z	2	0P+2C+8E	B L	ZP
Master Project 2	Z	2	0P+2C+8E	B L	ZP
Master Project 2	Z	2	0P+2C+8E	B L	ZP
Master Project 2 Vladimír Faltus	Z	2	0P+2C+8E	B L	ZP
Master Project 2	Z	2	0P+2C+8E	B L	ZP
Master Project 2	Z	2	0P+2C+8E	B L	ZP
Master Project 2	Z	2	0P+2C+8E	B L	ZP
Master Project 2	Z	2	0P+2C+8E	B L	ZP
Master Project 2	Z	2	0P+2C+8E	B L	ZP
Master Project 2	Z	2	0P+2C+8E	B L	ZP
	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.) Master Project 1 Master Project 1 Zuzana arská, Dagmar Ko árková, Iva Šturmová, Kristýna Neubergová, Martín Jacura, Jan Kruntorád, Ond ej Trešl, David Vodák, Tomáš Javo Ik, Master Project 1 Michal Frydrýn, Karel Kocián, Luboš Nouzovský, Zden k Svatý, Jakub Nová ek Master Project 1 Michal Frydrýn, Karel Kocián, Luboš Nouzovský, Zden k Svatý, Jakub Nová ek Master Project 1 Jakub Kraus, Andrej Lališ, Slobodan Stoji , Terézia Pilmannová, Jakub Hospodka, Lenka Hanáková, Vladimír Socha, Peter Vittek Master Project 1 Václav Rada Master Project 1 Václav Baroch, Michal Drábek, Alexandra Dvo á ková, Veronika Faifrová, Eliška Glaserová, Rudolf F. Heidu, Tomáš Horák, Vit Janoš, Milan K íž, Master Project 1 Master Project 1 Master Project 2 Master Project 1 Master Project 1 Václav Baroch, Michal Drábek, Alexandra Dvo á ková, Veronika Faifrová, Eliška Glaserová, Rudolf F. Heidu, Tomáš Horák, Vit Janoš, Milan K íž, Master Project 1 Master Project 2 Master Project 2 Master Project 2 Master Proj	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.)CompletionMaster Project 1ZMaster Project 1ZZuzana arská, Dagmar Ko árková, Iva Šturmová, Kristýna Neubergová, Martin Jacura, Jan Kruntorád, Ond ej Trešl, David Vodák, Tomáš Javo Ik,ZMaster Project 1ZMaster Project 1ZVáclav Baroch, Michal Drábek, Alexandra Dvo á ková, Veronika Faifrová, Eliška Glaserová, Rudolf F. Heidu, Tomáš Horák, Vit Janoš, Milan K íž,Master Project 1ZVáclav Baroch, Michal Drábek, Alexandra Dvo á ková, Veronika Faifrová, Eliška Glaserová, Rudolf F. Heidu, Tomáš Horák, Vit Janoš, Milan K íž,Master Project 1ZMaster Project 2ZMaster Project 2Z <t< td=""><td>Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members)CompletionCreditsTutors, authors and guarantors (gar.)Z2Master Project 1Z2Master Project 1Z2Václav Baroh, Michal Drábek, Alexandra Dvo á ková, Veronika Failrová, EliškaZ2Master Project 1Z2Václav Baroh, Michal Drábek, Alexandra Dvo á ková, Veronika Failrová, EliškaZ2Master Project 1Z22Master Project 1Z22Master Project 1Z22Master Project 2Z22Master Project 1Z22Master Project 1Z22Master Project 1Z22Master Project 2Z22Master Project 2Z22Master Project 2Z22<</td><td>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.)CompletionCreditsScopeMaster Project 1ZQQ+2C+4EMaster Project 1Slobodan Stoji , Terézia Pilmannová, JakubZQMaster Project 1ZQQ+2C+4EMaster Project 2ZQQ+2C+4EMaster Projec</td><td>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.)CompletionCreditsScopeSemesterMaster Project 1Z20P+2C+48ZMaster Project 2Z20P+2C+48Z<td< td=""></td<></td></t<>	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members)CompletionCreditsTutors, authors and guarantors (gar.)Z2Master Project 1Z2Master Project 1Z2Václav Baroh, Michal Drábek, Alexandra Dvo á ková, Veronika Failrová, EliškaZ2Master Project 1Z2Václav Baroh, Michal Drábek, Alexandra Dvo á ková, Veronika Failrová, EliškaZ2Master Project 1Z22Master Project 1Z22Master Project 1Z22Master Project 2Z22Master Project 1Z22Master Project 1Z22Master Project 1Z22Master Project 2Z22Master Project 2Z22Master Project 2Z22<	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.)CompletionCreditsScopeMaster Project 1ZQQ+2C+4EMaster Project 1Slobodan Stoji , Terézia Pilmannová, JakubZQMaster Project 1ZQQ+2C+4EMaster Project 2ZQQ+2C+4EMaster Projec	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.)CompletionCreditsScopeSemesterMaster Project 1Z20P+2C+48ZMaster Project 2Z20P+2C+48Z <td< td=""></td<>

17XN2 Master Project 2	Z	2	0P+2C+8B	L	ZP

Characteristics of the courses of this group of Study Plan: Code=XN TR 1.-2. 13/14 Name=Projekt 1.-2.sem TR 13/14 Ζ 2 11XN1 Master Project 1 12XN1 Master Project 1 Ζ 2 23XN1 Master Project 1 2 Ζ 22XN1 Master Project 1 2 Ζ Master Project 1 2 21XN1 Ζ 20XN1 Master Project 1 Ζ 2 Master Project 1 Ζ 2 18XN1 17XN1 Master Project 1 Ζ 2 7 2 16XN1 Master Project 1 Ζ 15XN1 Master Project 1 2 Master Project 1 Ζ 2 14XN1 11XN2 Master Project 2 Ζ 2 Master Project 2 Ζ 2 22XN2 21XN2 Master Project 2 Ζ 2 Master Project 2 Ζ 2 20XN2 Ζ 18XN2 Master Project 2 2 Ζ 2 23XN2 Master Project 2 Ζ 2 16XN2 Master Project 2 15XN2 Master Project 2 Ζ 2 14XN2 Master Project 2 Ζ 2 12XN2 Master Project 2 Ζ 2 Master Project 2 Ζ 2 17XN2

Name of the block: Compulsory courses in the program Minimal number of credits of the block: 42 The role of the block: P

Code of the group: 1.S.NPTR 11/12 Name of the group: 1.sem.nav.prez.TR od 11/12 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 8 courses Credits in the group: 23 Note on the group:

Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their Code Completion Credits Scope Semester Role members) Tutors, authors and guarantors (gar.) Traffic Flow Theory 12TDP Z,ZK 3 2P+1C Ζ Р Vladimír Faltus 17ILO Z.ZK 2+2 Ζ 4 Information Technology in Logistics Р 17LGY Z,ZK 6 Ζ 3+2 Р **Logistics Systems** 17PJM ΖK 2 2+0 Ζ Р **Project Management** 7 11MME K7 2 1+1 Р **Mathematical Models in Economics** 12DZP Ζ Ζ 2 2P+0C Transport and Environment Ρ Language - English 1 Barbora Horá ková, Jitka He manová, Dana Boušová, Lenka Monková, Peter Morpuss, Markéta Vojanová, Marie Michlová, Marek Tome ek, Markéta Ζ 15J2A1 2 0P+2C+10B Ζ Р Musilová. Language - Spanish 1 15J2S1 Ζ 2 0P+2C+10B Ζ Р Eva Rezlerová, Nina Hricsina Puškinová

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

12TDP	Traffic Flow Theory	Z,ZK	3		
Mobility and associated human problems. Basic traffic parameters and their measurement. Estimation of quality of services. Theoretical fundamentals and application					
models. Macroscopic, statistical and microscopic models. Theory of shock waves, queuing theory and special theory of traffic phenomena. Relation between traffic models and traffi					
flow management.					
v					
17ILO	Information Technology in Logistics	Z,ZK	4		
17ILO Basics of bar code tech	Information Technology in Logistics nology. Basics of radiofrequency identification. Product numbering systems for intensive distribution. Packaging hierarchy an	Z,ZK d identification mo	4 odels in supply		
17ILO Basics of bar code tech chain. Identification of tr	Information Technology in Logistics nology. Basics of radiofrequency identification. Product numbering systems for intensive distribution. Packaging hierarchy an ading partners in the supply chain. Basics of data communication in logistics. National and global multidisciplinary standards	Z,ZK d identification mo for electronic dat	4 odels in supply a interchange.		

17LGY Logistics Systems	Z,ZK	6	
Transport in logistics, intermodal transport, electronic toll systems in road transport, supply chain management, logistics partnership and alliances, log	istic service of te	ritory, dangerous	
goods in logistics, management and marketing in logistics, identification systems in logistics, IT in logistic systems and transportation.			
17PJM Project Management	ZK	2	
Project and planning, project content, management and project task organization. Technical and economical assessment criterions. Criterion function	and its componer	nts. Organization	
and management of the project run.			
11MME Mathematical Models in Economics	KZ	2	
Stochastic prosesses and their classification, Poisson process, birth and death process, queueing models and their classification, graph and related	erminology, cycle	s in a graph and	
their detection, the shortest and longest way through a graph, critical parth through a graph, extreme of a function of many arguments, free and const	strained extremun	n, Lagrange	
multipliers, numerical methods in optimization, linear programming and its application.			
12DZP Transport and Environment	Z	2	
This course aims the impact of transport on environment. The accent is put mainly on noise and vibration, emission, barrier effect and energy deman	ds. The noise me	asury is part and	
parcel of this course.			
15J2A1 Language - English 1	Z	2	
Presentation Skills - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work engagement.			
15J2S1 Language - Spanish 1	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, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and technical registers and their use,			
language of management.			

Code of the group: 2.S.NPTR 11/12 Name of the group: 2.sem.nav.prez.TR od 11/12 Requirement credits in the group: In this group you have to gain 19 credits Requirement courses in the group: In this group you have to complete 6 courses Credits in the group: 19 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
17INV	Investments and Financing in Transport	Z,ZK	4	3+1	L	Р
17TTH	Transport Theory	Z,ZK	5	2+2	L	Р
20STL	Satellite Technologies and Logistics	Z,ZK	4	2+2	L	Р
16TAJ	Technological Aspects of Quality	Z	2	2P+0C	L	Р
15JBA2	Language - English 2	Z	2	0P+2C+10B	L	Р
15JBS2	Language - Spanish 2	Z	2	0P+2C+10B	L	Р

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

17INV	Investments and Financing in Transport	Z,ZK	4		
Projects and project pla	nning, project financing, financing models, PPP financing, selection procedure, EIA study, project assessment and its criterio	ns, NPV, IRR. Op	otimal variant		
selection. Zone planning	g and decision making.				
17TTH	Transport Theory	Z,ZK	5		
Elements of theory of gra	aphs. Minimum spanning tree, trees in graphs. Paths and cycles. Arc routing problems. Vehicle routing problems. Network flows.	Location problem	s. Transportation		
elements. Transportation	n flows. Theory of displacement quality. Multicriterial decision making in transport processes.				
20STL	Satellite Technologies and Logistics	Z,ZK	4		
Basic topics: GPS and C	Salileo navigation systems and their use for positioning the rail, air, sea, road and urban transport; GIS technology as a powe	rful tool for solvir	ig problems in		
logistics, appropriate tel	ecommunication technologies and technologies for the identification and monitoring of goods; life cycle of satellite systems, s	atellite as the ca	rrier of satellite		
systems functionalities a	and its technology.				
16TAJ	Technological Aspects of Quality	Z	2		
Certification and accred	itation, quality management, standards of quality management and its application, quality system creation, tools and methods o	of quality improve	ment, conformity		
assurance, environment	al certification, workplace certification, QMS integration, classification, certification of products and producers.				
15JBA2	Language - English 2	Z	2		
Presentation Skills - exp	pert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work engagement.		•		
15JBS2	Language - Spanish 2	Z	2		
Grammatical Structures	and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative ski	lls, feedback skill	s, summarising		
technical text content, s	technical text content, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and technical registers and their use,				
language of manageme	nt.				

Name of the block: Compulsory elective courses Minimal number of credits of the block: 4 The role of the block: PV

Code of the group: Y2-NPTR 15/16 Name of the group: PVP nav.prez.TR 15/6 Requirement credits in the group: In this group you have to gain 4 credits

Requirement courses in the group: In this group you have to complete at least 2 courses (at most 4) Credits in the group: 4 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
14Y2C1	CATIA I	KZ	2	2P+0C	L	PV
14Y2CS	Sensitivity of Systems	KZ	2	2P+0C	L	PV
12Y2DVUP	Transport and Land - Use Planning	KZ	2	1+1	L	PV
15Y2DN	Transportation Psychology in German Speaking Countries	KZ	2	2P+0C	L	PV
18Y2DC	Dynamics of Transport Routes and Vehicles	KZ	2	2P+0C	Z	PV
18Y2D2	Dynamics of Transport Routes and Vehicles 2	KZ	2	2+0	L	PV
15Y2HS	Road Transport History	KZ	2	2P+0C	L	PV
16Y2HP	Vehicle Hygiene	KZ	2	2P+0C	L	PV
17Y2KI	Capital Investment in Transportation and Telecommunications	KZ	2	2+0	L	PV
16Y2KV	Car Body Design	KZ	2	2P+0C	L	PV
21Y2LS	Air Traffic Services	KZ	2	2P+0C+8B	L	PV
11Y2LG	Logics of Engineer's Judgement	KZ	2	2P+0C	L	PV
21Y2MK	Marketing of Air Transport Peter Vittek Peter Vittek	KZ	2	2P+0C+8B	Z	PV
12Y2MH	Measurement and Modeling of Traffic Noise	KZ	2	2P+0C	L	PV
18Y2MP	Finite Element Method And Its Application	KZ	2	2P+0C	L	PV
16Y2MK	Quality Methods for Vehicles	KZ	2	2P+0C	L	PV
12Y2MD	Methods of Traffic Regulation and Prediction	KZ	2	2P+0C	L	PV
17Y2MM	Mobility of Small Towns	KZ	2	2+0	L	PV
12Y2MZ	Modernization of Railway Lines and Stations	KZ	2	2P+0C	L	PV
14Y2OP	Object Oriented Programming in Transport	KZ	2	2P+0C	L	PV
22Y2PS	Traffic Accidents Computer Simulation and Analysis	KZ	2	2P+0C	L	PV
15Y2PT	Food in Transportation	KZ	2	2P+0C	L	PV
21Y2PP	Law and Operation in Air Transport	KZ	2	2P+0C+8B	L	PV
20Y2PR	Prediction of time series	KZ	2	2P+0C	L	PV
14Y2PJ	C++ Programming Language	KZ	2	2P+0C	L	PV
14Y2PH	CAD Interface Programming	KZ	2	2P+0C	L	PV
11Y2PM	Programming in MATLAB	KZ	2	2P+0C	L	PV
12Y2RD	Realization of Transport Buildings	KZ	2	2P+0C	L	PV
17Y2SJ	Network Timetabling on the Railway	KZ	2	2P+0C	L	PV
16Y2ST	Special Technologies in Transport and Telecommunications	KZ	2	2P+0C	L	PV
17Y2SK	Urban and Regional Rail Transport System	KZ	2	2P+0C	L	PV
15Y2TS	Technician and Contemporary Society	KZ	2	2P+0C	L	PV
12Y2UD	Sustainable Transportation	KZ	2	2P+0C	L	PV
18Y2UB	Accident Biomechanics and Safety	KZ	2	2P+0C	L	PV
23Y2VZ	Leadership and Human Resource Development	KZ	2	2P+0C	L	PV
18Y2VC	Computational Mechanics in Transportation	KZ	2	2P+0C	L	PV
23Y2VR	Cope with Risks in Engineering Branches Danuše Procházková	KZ	2	2P+0C		PV

Characteristics of the courses of this group of Study Plan: Code=Y2-NPTR 15/16 Name=PVP nav.prez.TR 15/6

14Y2C1	CATIA I	KZ	2			
Fundaments of working with CATIA, making basic parts and bodies. Making 2D sketches, geometric stucture, parametric linking, making adaptive models from 2D sketches. Import						
and export of made parts and bodies. Making assemble and visualization.						
14Y2CS	Sensitivity of Systems	KZ	2			
Design of systems with defined reliability. The impact of changing parameters and subsystems within a system. System sensitivity computing, definition of sensitivity functions and						
matrices and their usabi	matrices and their usability in system design.					
12Y2DVUP	Transport and Land - Use Planning	KZ	2			
Explanation of fundame	ntal relation and connection between transport and territory, fundamentals of traffic layout. Land - use planning. Influence of t	raffic on area and	d shape of town,			
solving principles of diffe	erent transport modes including pedestrian traffic and cycling transport. Traffic calming, parking, Complex transport study.					

1312DN Tansportation i sychology in German Speaking Countries	KZ	2
Introduction into broader view of traffic problems with regard to the work with texts (Physics for drivers, abusing alcohol during driving, exhaustion, getting of	of driving lice	ence, children
in traffic, traffic accident, traffic psychology in the internet etc.)		
18Y2DC Dynamics of Transport Routes and Vehicles	KZ	2
Basic theory and calculations of more mass systems. Analysis of the forces acting between the vehicle and transport route. Creation of dynamic models of vehicles of evidence of dynamic models of the forces acting between the vehicle and transport route. Creation of dynamic models of vehicles of evidence of evidence of dynamic models of vehicles of evidence of evid	hicles and tr	ansport routes.
of oscillation. Experimental methods in dynamics	Criteria ior ti	ne admissibility
18Y2D2 Dynamics of Transport Routes and Vehicles 2	K7	2
Analysis of forces in the vehicle and transport routes and their influence on the stress and strain components of the vehicle structure or behavior of traffic ro	outes. Creati	ion of dvnamic
models of vehicles and transport routes. Vibration of systems with a finite number of degrees of freedom. Methods of constant stiffness and constant complia	ance. Dynan	nic calculations
of structural systems. Criteria for the admissibility of oscillation.		
15Y2HS Road Transport History	KZ	2
Roads and road traffic in the Ancient Age, corridors of main mediveal pathways. Development of road traffic in the modern period, acceleration of road trans	sport develo	pment during
1st part of 20th century. Development of road layout, geometric and construction layers. Beginning of modern road civil engineering. Development of road tri-	ravelling in n	nodern period.
Asive the second s	V 7	2
Firstions and erronomy of vehicles and the influence on man and nature. National and international law related to the bygiene. Noise and vibrations - sources and second s	NZ	∠ n propagation
physical values, ways of measuring, prevention, elimination, Exhausts - creation, measurement, reduction, non-regular fuels and drives, Ergonomy - sitting, sta	anding. cont	rol. operational
reach. Condition - heating, ventilation, air-conditioning, filtration, tiredom.	5,	
17Y2KI Capital Investment in Transportation and Telecommunications	KZ	2
Financial market, investment desicion making - long term goals and investment strategies, long temr financing.	I	
16Y2KV Car Body Design	KZ	2
Personal cars body, high-load car body, bus car body, and motorcycle as a construction set. Principles of design, production, testing and operation. Material	Is used for c	ar body
construction. Active and passive safety parts. Ergonomics, HMI, view out of the vehicle, operational extent, view behind the car. Conditioning tools, signaling	g function. A	erodynamics
or the car body. Design and artistic design principles. Practical training.	1/7	
21YZLS AIF IFATTIC SETVICES Airspace structure in Crack Republic Practical examples of TWR APP a A		Z History of ATS
at USA and Czechoslovakia. ATS - Model of financing. Training Systém of Air Traffic Controllers. Future development of ATS.		Thistory of ATS
11Y2LG Logics of Engineer's Judgement	K7	2
Logical structure of engineer's judgement, its propositional and predicative logical base. Solutions of logical tasks through the methods of truthfulness and s	semantic an	alysis charts.
Venn's diagram method. Logical basis for network design for the solution of technical tasks.		-
21Y2MK Marketing of Air Transport	KZ	2
The content of the course "Marketing in air transport" is the management of activities and processes using available marketing tools and processes for analy	lysis, strateg	y development
and implementation of sales of goods and services in the aviation industry. In addition to the theoretical foundations of marketing, the lectures present syste	ems of mark	et, competition
and product analysis, creation of marketing strategies and planning.	1/7	0
Theoretical introduction to poise from traffic. Noise from rail transport. Noise from road traffic. Measurement and calculation of poise from rail traffic. Measurement and calculation of poise from rail traffic.	rement and	∠ calculation of
Those from foad traffic. Modeling of traffic hoise in the CADINA A.		
18Y2MP Finite Element Method And Its Application	KZ	2
18Y2MP Finite Element Method And Its Application Basic mathematical formulation of the Finite Element Method. Direct Stiffness Method used in structural mechanics. Evaluation of stiffness matrices for the line of the finite Element Method.	KZ basic eleme	2 ents using
18Y2MP Finite Element Method And Its Application Basic mathematical formulation of the Finite Element Method. Direct Stiffness Method used in structural mechanics. Evaluation of stiffness matrices for the l variational principles. Element formulation (bar and beam elements, CST, LST, quadrilateral, tetrahedral and brick elements). Natural coordinates, natural sh	KZ basic eleme hape functio	2 ents using ons and
18Y2MP Finite Element Method And Its Application Basic mathematical formulation of the Finite Element Method. Direct Stiffness Method used in structural mechanics. Evaluation of stiffness matrices for the l variational principles. Element formulation (bar and beam elements, CST, LST, quadrilateral, tetrahedral and brick elements). Natural coordinates, natural sh isoparametric representation. Numerical integration. Introduction to dynamics. FEM programming.	KZ basic eleme	2 ents using ons and
18Y2MP Finite Element Method And Its Application Basic mathematical formulation of the Finite Element Method. Direct Stiffness Method used in structural mechanics. Evaluation of stiffness matrices for the l variational principles. Element formulation (bar and beam elements, CST, LST, quadrilateral, tetrahedral and brick elements). Natural coordinates, natural sh isoparametric representation. Numerical integration. Introduction to dynamics. FEM programming. 16Y2MK Quality Methods for Vehicles Oursility Oursility and the applicities and each size of evaluation of programming.	KZ basic eleme hape functio	2 ents using ons and 2
18Y2MP Finite Element Method And Its Application Basic mathematical formulation of the Finite Element Method. Direct Stiffness Method used in structural mechanics. Evaluation of stiffness matrices for the I variational principles. Element formulation (bar and beam elements, CST, LST, quadrilateral, tetrahedral and brick elements). Natural coordinates, natural sh isoparametric representation. Numerical integration. Introduction to dynamics. FEM programming. 16Y2MK Quality Methods for Vehicles Quality management methods list, customer data acquisition and analysis of customer requirements, QFD, DFM, DFA, DFS. FMEA (Failure mode effect ana (fearm) design	KZ basic eleme hape functio KZ alysis). Elem	2 ents using ons and 2 nents of parallel
18Y2MP Finite Element Method And Its Application Basic mathematical formulation of the Finite Element Method. Direct Stiffness Method used in structural mechanics. Evaluation of stiffness matrices for the l variational principles. Element formulation (bar and beam elements, CST, LST, quadrilateral, tetrahedral and brick elements). Natural coordinates, natural st isoparametric representation. Numerical integration. Introduction to dynamics. FEM programming. 16Y2MK Quality Methods for Vehicles Quality management methods list, customer data acquisition and analysis of customer requirements, QFD, DFM, DFA, DFS. FMEA (Failure mode effect ana (team) design. 12Y2MD Methods of Traffic Regulation and Prediction	KZ basic eleme hape functio KZ alysis). Elem	2 ents using ons and 2 eents of parallel
18Y2MP Finite Element Method And Its Application Basic mathematical formulation of the Finite Element Method. Direct Stiffness Method used in structural mechanics. Evaluation of stiffness matrices for the I variational principles. Element formulation (bar and beam elements, CST, LST, quadrilateral, tetrahedral and brick elements). Natural coordinates, natural sh isoparametric representation. Numerical integration. Introduction to dynamics. FEM programming. 16Y2MK Quality Methods for Vehicles Quality management methods list, customer data acquisition and analysis of customer requirements, QFD, DFM, DFA, DFS. FMEA (Failure mode effect ana (team) design. 12Y2MD Methods of Traffic Regulation and Prediction Basic ways of traffic prognosis, traffic prognosis for large area (calculation of future traffic volumes, calculation of future traffic volumes between areas (analogi	KZ basic eleme hape functio KZ alysis). Elem	2 ents using ons and 2 eents of parallel 2 thetic methods,
18Y2MP Finite Element Method And Its Application Basic mathematical formulation of the Finite Element Method. Direct Stiffness Method used in structural mechanics. Evaluation of stiffness matrices for the I variational principles. Element formulation (bar and beam elements, CST, LST, quadrilateral, tetrahedral and brick elements). Natural coordinates, natural st isoparametric representation. Numerical integration. Introduction to dynamics. FEM programming. 16Y2MK Quality Methods for Vehicles Quality management methods list, customer data acquisition and analysis of customer requirements, QFD, DFM, DFA, DFS. FMEA (Failure mode effect ana (team) design. 12Y2MD Methods of Traffic Regulation and Prediction Basic ways of traffic prognosis, traffic prognosis for large area (calculation of future traffic volumes, calculation of future traffic volumes between areas (analogi modal split, traffic distribution to road network). Shock wave in traffic flow. Service levels and their traffic volumes. Acceleration noise.	KZ basic eleme hape functio KZ kZ ical and synt	2 ents using ons and 2 nents of parallel 2 thetic methods,
18Y2MP Finite Element Method And Its Application Basic mathematical formulation of the Finite Element Method. Direct Stiffness Method used in structural mechanics. Evaluation of stiffness matrices for the I variational principles. Element formulation (bar and beam elements, CST, LST, quadrilateral, tetrahedral and brick elements). Natural coordinates, natural st isoparametric representation. Numerical integration. Introduction to dynamics. FEM programming. 16Y2MK Quality Methods for Vehicles Quality management methods list, customer data acquisition and analysis of customer requirements, QFD, DFM, DFA, DFS. FMEA (Failure mode effect ana (team) design. 12Y2MD Methods of Traffic Regulation and Prediction Basic ways of traffic prognosis, traffic prognosis for large area (calculation of future traffic volumes, calculation of future traffic volumes between areas (analogi modal split, traffic distribution to road network). Shock wave in traffic flow. Service levels and their traffic volumes. Acceleration noise. 17Y2MM Mobility of Small Towns	KZ basic eleme hape functio KZ alysis). Elem KZ ical and synt	2 ents using ons and 2 nents of parallel 2 thetic methods, 2
18Y2MP Finite Element Method And Its Application Basic mathematical formulation of the Finite Element Method. Direct Stiffness Method used in structural mechanics. Evaluation of stiffness matrices for the I variational principles. Element formulation (bar and beam elements, CST, LST, quadrilateral, tetrahedral and brick elements). Natural coordinates, natural sh isoparametric representation. Numerical integration. Introduction to dynamics. FEM programming. 16Y2MK Quality Methods for Vehicles Quality management methods list, customer data acquisition and analysis of customer requirements, QFD, DFM, DFA, DFS. FMEA (Failure mode effect ana (team) design. 12Y2MD Methods of Traffic Regulation and Prediction Basic ways of traffic prognosis, traffic prognosis for large area (calculation of future traffic volumes, calculation of future traffic volumes between areas (analogi modal split, traffic distribution to road network). Shock wave in traffic flow. Service levels and their traffic volumes. Acceleration noise. 17Y2MM Mobility of Small Towns Basic terms, networks of railway and bus lines, alternative forms of regional transport, influence in regional transport in vicinity of big cities, solutions of passed	KZ basic eleme hape functio KZ alysis). Elem KZ ical and synt KZ senger and fin	2 ents using ons and 2 eents of parallel 2 thetic methods, 2 reight transport
18Y2MP Finite Element Method And Its Application Basic mathematical formulation of the Finite Element Method. Direct Stiffness Method used in structural mechanics. Evaluation of stiffness matrices for the I variational principles. Element formulation (bar and beam elements, CST, LST, quadrilateral, tetrahedral and brick elements). Natural coordinates, natural st isoparametric representation. Numerical integration. Introduction to dynamics. FEM programming. 16Y2MK Quality Methods for Vehicles Quality management methods list, customer data acquisition and analysis of customer requirements, QFD, DFM, DFA, DFS. FMEA (Failure mode effect ana (team) design. 12Y2MD Methods of Traffic Regulation and Prediction Basic ways of traffic prognosis, traffic prognosis for large area (calculation of future traffic volumes, calculation of future traffic volumes between areas (analogi modal split, traffic distribution to road network). Shock wave in traffic flow. Service levels and their traffic volumes. Acceleration noise. 17Y2MM Mobility of Small Towns Basic terms, networks of railway and bus lines, alternative forms of regional transport, influence in regional transport in vicinity of big cities, solutions of passed in regions, activities related to regional transport, passenger transport safety in regions.	KZ basic eleme hape functio KZ alysis). Elem KZ ical and synt KZ senger and fi	2 ents using ons and 2 eents of parallel 2 thetic methods, 2 reight transport
10/15/2017 Finite Element Method And Its Application 18Y2MP Finite Element Method And Its Application Basic mathematical formulation of the Finite Element Method. Direct Stiffness Method used in structural mechanics. Evaluation of stiffness matrices for the I variational principles. Element formulation (bar and beam elements, CST, LST, quadrilateral, tetrahedral and brick elements). Natural coordinates, natural st isoparametric representation. Numerical integration. Introduction to dynamics. FEM programming. 16Y2MK Quality Methods for Vehicles Quality management methods list, customer data acquisition and analysis of customer requirements, QFD, DFM, DFA, DFS. FMEA (Failure mode effect ana (team) design. 12Y2MD Methods of Traffic Regulation and Prediction Basic ways of traffic prognosis, traffic prognosis for large area (calculation of future traffic volumes, calculation of future traffic volumes between areas (analogi modal split, traffic distribution to road network). Shock wave in traffic flow. Service levels and their traffic volumes. Acceleration noise. 17Y2MM Mobility of Small Towns Basic terms, networks of railway and bus lines, alternative forms of regional transport, influence in regional transport in vicinity of big cities, solutions of passes in regions, activities related to regional transport, passenger transport safety in regions. 12Y2MZ Modernization of Railway Lines and Stations	KZ basic eleme hape functio KZ alysis). Elem KZ ical and synt KZ senger and fi KZ	2 ents using ons and 2 ents of parallel 2 thetic methods, 2 reight transport 2
10/15/10/10/10/10/10/10/10/10/10/10/10/10/10/	KZ basic eleme hape functio kz kz basic eleme alysis). Eleme basic eleme KZ	2 ents using ons and 2 ents of parallel 2 thetic methods, 2 reight transport 2 dual principles).
Indise from road traine, indocentry of traine noise in the CADNA A. 18Y2MP Finite Element Method And Its Application Basic mathematical formulation of the Finite Element Method. Direct Stiffness Method used in structural mechanics. Evaluation of stiffness matrices for the I variational principles. Element formulation (bar and beam elements, CST, LST, quadrilateral, tetrahedral and brick elements). Natural coordinates, natural sh isoparametric representation. Numerical integration. Introduction to dynamics. FEM programming. 16Y2MK Quality Methods for Vehicles Quality management methods list, customer data acquisition and analysis of customer requirements, QFD, DFM, DFA, DFS. FMEA (Failure mode effect ana (team) design. 12Y2MD Methods of Traffic Regulation and Prediction Basic ways of traffic prognosis, traffic prognosis for large area (calculation of future traffic volumes, calculation of future traffic volumes between areas (analogi modal split, traffic distribution to road network). Shock wave in traffic flow. Service levels and their traffic volumes. Acceleration noise. 17Y2MM Mobility of Small Towns Basic terms, networks of railway and bus lines, alternative forms of regional transport, influence in regional transport in vicinity of big cities, solutions of passe in regions, activities related to regional transport, passenger transport safety in regions. 12Y2MZ Modernization of Railway Lines and Stations Line speed increasing. AGC and AGTC Agreement. AGC and AGTC railway network. Principles of modernization (conceptual papers, definitions of basic conce Track geometrical characteristics on	KZ basic eleme hape functio KZ alysis). Eleme KZ ical and synt KZ senger and fi KZ cepts, indivice nd tunnels. E	2 ents using ons and 2 ents of parallel 2 thetic methods, 2 reight transport 2 dual principles). Development
18Y2MP Finite Element Method And Its Application Basic mathematical formulation of the Finite Element Method. Direct Stiffness Method used in structural mechanics. Evaluation of stiffness matrices for the I variational principles. Element formulation (bar and beam elements, CST, LST, quadrilateral, tetrahedral and brick elements). Natural coordinates, natural strisoparametric representation. Numerical integration. Introduction to dynamics. FEM programming. 16Y2MK Quality Methods for Vehicles Quality management methods list, customer data acquisition and analysis of customer requirements, QFD, DFM, DFA, DFS. FMEA (Failure mode effect ana (team) design. 12Y2MD Methods of Traffic Regulation and Prediction Basic ways of traffic prognosis, traffic prognosis for large area (calculation of future traffic volumes, calculation of future traffic volumes between areas (analogi modal split, traffic distribution to road network). Shock wave in traffic flow. Service levels and their traffic volumes. Acceleration noise. 17Y2MM Mobility of Small Towns Basic terms, networks of railway and bus lines, alternative forms of regional transport, influence in regional transport in vicinity of big cities, solutions of passic in regions, activities related to regional transport, passenger transport safety in regions. 12Y2MZ Modernization of Railway Lines and AGTC railway network. Principles of modernization (conceptual papers, definitions of basic conc 17Y2MZ Modernization of Railway Lines. Superstructure and substructure on upgraded lines. Designing of railway stations. Bridges an and realization of projects. Technic	KZ basic eleme hape functio KZ alysis). Elem KZ jical and synt KZ senger and fi KZ cepts, indivic nd tunnels. D KZ	2 ents using ons and 2 enents of parallel 2 thetic methods, 2 reight transport 2 dual principles). Development 2
INDEX INFORM Trade traine. Notes in the CADRA A. 18Y2MP Finite Element Method And Its Application Basic mathematical formulation of the Finite Element Method. Direct Stiffness Method used in structural mechanics. Evaluation of stiffness matrices for the I variational principles. Element formulation (bar and beam elements, CST, LST, quadrilateral, tetrahedral and brick elements). Natural coordinates, natural st isoparametric representation. Numerical integration. Introduction to dynamics. FEM programming. 16Y2MK Quality Methods for Vehicles Quality management methods list, customer data acquisition and analysis of customer requirements, QFD, DFM, DFA, DFS. FMEA (Failure mode effect ana (team) design. 12Y2MD Methods of Traffic Regulation and Prediction Basic ways of traffic prognosis, traffic prognosis for large area (calculation of future traffic volumes. Acceleration noise. 17Y2MM Mobility of Small Towns Basic terms, networks of railway and bus lines, alternative forms of regional transport, influence in regional transport in vicinity of big cities, solutions of passes in regions, activities related to regional transport, passenger transport safety in regions. 12Y2MZ Modernization of Railway Lines and Stations Line speed increasing. AGC and AGTC Agreement. AGC and AGTC railway network. Principles of modernization (conceptual papers, definitions of basic conc TarXed geometrical characteristics on modernized railway lines. Superstructure and substructure on upgraded lines. Designing of railway stations. Bridges an and realization of projects.	KZ basic eleme hape functio KZ alysis). Elem KZ ical and synt KZ senger and fu KZ cepts, indivic nd tunnels. D KZ olem cases w	2 ents using ons and 2 nents of parallel 2 thetic methods, 2 reight transport 2 dual principles). Development 2 vil be chosen
INDEX INDEXTIGATION Contraction of the finite CADINA A. 18Y2MP Finite Element Method And Its Application Basic mathematical formulation of the Finite Element Method. Direct Stiffness Method used in structural mechanics. Evaluation of stiffness matrices for the I variational principles. Element formulation (bar and beam elements, CST, LST, quadrilateral, tetrahedral and brick elements). Natural coordinates, natural st isoparametric representation. Numerical integration. Introduction to dynamics. FEM programming. 16Y2MK Quality Methods for Vehicles Quality management methods list, customer data acquisition and analysis of customer requirements, QFD, DFM, DFA, DFS. FMEA (Failure mode effect ana (team) design. 12Y2MD Methods of Traffic Regulation and Prediction Basic ways of traffic prognosis, traffic prognosis for large area (calculation of future traffic volumes, calculation of future traffic volumes between areas (analogi modal split, traffic distribution to road network). Shock wave in traffic flow. Service levels and their traffic volumes. Acceleration noise. 17Y2MM Mobility of Small Towns Basic terms, networks of railway and bus lines, alternative forms of regional transport, influence in regional transport in vicinity of big cities, solutions of passe in regions. 12Y2MZ Modernization of Railway Lines and Stations Line speed increasing. AGC and AGTC Agreement. AGC and AGTC railway network. Principles of modernization (conceptual papers, definitions of basic conc Track geometrical characteristics on modernized railway lines. Superstructure	KZ basic eleme hape function KZ alysis). Eleme KZ ical and synth KZ	2 ents using ons and 2 ents of parallel 2 thetic methods, 2 reight transport 2 dual principles). Development 2 vil be chosen
Initial in the finite and indice in the CADIXA A. 18Y2MP Finite Element Method And Its Application Basic mathematical formulation of the Finite Element Method. Direct Stiffness Method used in structural mechanics. Evaluation of stiffness matrices for the I variational principles. Element formulation (bar and beam elements, CST, LST, quadrilateral, tetrahedral and brick elements). Natural coordinates, natural st isoparametric representation. Numerical integration. Introduction to dynamics. FEM programming. 16Y2MK Quality Methods for Vehicles Image: Comparison of the Finite Element Method and Prediction Quality management methods list, customer data acquisition and analysis of customer requirements, QFD, DFM, DFA, DFS. FMEA (Failure mode effect ana (team) design. I2Y2MD 12Y2MD Methods of Traffic Regulation and Prediction Basic ways of traffic prognosis, traffic prognosis for large area (calculation of future traffic volumes, calculation of future traffic volumes between areas (analogi modal split, traffic distribution to road network). Shock wave in traffic flow. Service levels and their traffic volumes. Acceleration noise. 17Y2MM Mobility of Small Towns Basic terms, networks of railway and bus lines, alternative forms of regional transport, influence in regional transport in vicinity of big cities, solutions of passe in regions. AGC and AGTC Agreement. AGC and AGTC railway Lines and Stations I Line speed increasing. AGC and AGTC Agreement. AGC and AGTC railway network. Principles of modernization (conceptual papers, definitions of basic conce Track geometrical characteristics on modernized railway lines. Superstruct	KZ basic eleme hape function KZ alysis). Eleme KZ gical and synth KZ ical and synth KZ	2 ents using ons and 2 ents of parallel 2 thetic methods, 2 reight transport 2 dual principles). Development 2 vil be chosen 2
Initial induct induct induct inducting of faint indice in the CADRA A. 18Y2MP Finite Element Method And Its Application Basic mathematical formulation of the Finite Element Method. Direct Stiffness Method used in structural mechanics. Evaluation of stiffness matrices for the I variational principles. Element formulation (bar and beam elements, CST, LST, quadrilateral, tetrahedral and brick elements). Natural coordinates, natural st isoparametric representation. Numerical integration. Introduction to dynamics. FEM programming. 16Y2MK Quality Methods for Vehicles	KZ basic eleme hape function KZ alysis). Eleme KZ jical and synth KZ senger and fin KZ Cepts, indivice nd tunnels. D KZ idem cases w KZ KZ	2 ents using ons and 2 ents of parallel 2 thetic methods, 2 reight transport 2 dual principles). Development 2 vil be chosen 2 track vehicle,
Index model mile, biodelimite of traine, totale in the CADVA A. 18Y2MP Finite Element Method And Its Application Basic mathematical formulation of the Finite Element Method. Direct Stiffness Method used in structural mechanics. Evaluation of stiffness matrices for the I variational principles. Element formulation (bar and beam elements, CST, LST, quadrilateral, tetrahedral and brick elements). Natural coordinates, natural st isoparametric representation. Numerical integration. Introduction to dynamics. FEM programming. 16Y2MK Quality Methods for Vehicles Quality management methods list, customer data acquisition and analysis of customer requirements, QFD, DFM, DFA, DFS. FMEA (Failure mode effect ana (team) design. 12Y2MD Methods of Traffic Regulation and Prediction Basic ways of traffic prognosis, traffic prognosis for large area (calculation of future traffic volumes, calculation of future traffic volumes between areas (analogi modal split, traffic distribution to road network). Shock wave in traffic flow. Service levels and their traffic volumes. Acceleration noise. 17Y2MM Mobility of Small Towns Basic terms, networks of railway and bus lines, alternative forms of regional transport, influence in regional transport in vicinity of big cities, solutions of passes in regions, activities related to regional transport, passenger transport safety in regions. 12Y2MZ Modernization of Railway Lines and Stations Line speed increasing. AGC and AGTC Agreement. AGC and AGTC railway network. Principles of modernization (conceptual papers, definitions of basic conc <t< td=""><td>KZ basic eleme hape function KZ alysis). Eleme KZ jical and synth KZ senger and fin KZ ical and synth KZ ical and synth</td><td>2 ents using ons and 2 ents of parallel 2 thetic methods, 2 reight transport 2 dual principles). Development 2 vil be chosen 2 track vehicle,</td></t<>	KZ basic eleme hape function KZ alysis). Eleme KZ jical and synth KZ senger and fin KZ ical and synth	2 ents using ons and 2 ents of parallel 2 thetic methods, 2 reight transport 2 dual principles). Development 2 vil be chosen 2 track vehicle,
Integration Integration of the Construction 18Y2MP Finite Element Method And Its Application Basic mathematical formulation of the Finite Element Method. Direct Stiffness Method used in structural mechanics. Evaluation of stiffness matrices for the I variational principles. Element formulation (bar and beam elements, CST, LST, quadrilateral, tetrahedral and brick elements). Natural coordinates, natural st isoparametric representation. Numerical integration. Introduction to dynamics. FEM programming. 16Y2MK Quality Methods for Vehicles Quality management methods list, customer data acquisition and analysis of customer requirements, QFD, DFM, DFA, DFS. FMEA (Failure mode effect ana (team) design. 12Y2MD Methods of Traffic Regulation and Prediction Basic ways of traffic prognosis, traffic prognosis for large area (calculation of future traffic volumes, calculation of future traffic volumes between areas (analogi modal split, traffic distribution to road network). Shock wave in traffic flow. Service levels and their traffic volumes. Acceleration noise. 17Y2MM Mobility of Small Towns Basic terms, networks of railway and bus lines, alternative forms of regional transport, influence in regional transport in vicinity of big cities, solutions of passis in regions, activities related to regional transport, passenger traisport safety in regions. 12Y2MZ Modernization of Railway Lines and Stations Line speed increasing. AGC and AGTC Agreement. AGC and AGTC railway network. Principles of modernization (conceptual papers, definitions of basic conc track geometrical characte	KZ basic eleme hape functio KZ alysis). Elem KZ ical and synt KZ cepts, indivic nd tunnels. E KZ idem cases w KZ KZ idem cases w KZ KZ ition, single-t KZ	2 ents using ons and 2 ents of parallel 2 thetic methods, 2 reight transport 2 dual principles). Development 2 vil be chosen 2 track vehicle, 2
Index model math. Model mild of name hole in the CADNA A. 18Y2MP Finite Element Method And Its Application Basic mathematical formulation of the Finite Element Method. Direct Stiffness Method used in structural mechanics. Evaluation of stiffness matrices for the I variational principles. Element formulation (bar and beam elements, CST, LST, quadrilateral, tetrahedral and brick elements). Natural coordinates, natural st isoparametric representation. Numerical integration. Introduction to dynamics. FEM programming. 16Y2MK Quality Methods for Vehicles Quality management methods list, customer data acquisition and analysis of customer requirements, QFD, DFM, DFA, DFS. FMEA (Failure mode effect ana (team) design. 12Y2MD Methods of Traffic Regulation and Prediction Basic ways of traffic prognosis, traffic prognosis for large area (calculation of future traffic volumes, calculation of future traffic volumes between areas (analogi modal split, traffic distribution to road network). Shock wave in traffic flow. Service levels and their traffic volumes. Acceleration noise. 17Y2MM Mobility of Small Towns Basic terms, networks of railway and bus lines, alternative forms of regional transport, influence in regional transport in vicinity of big cities, solutions of basic conc 12Y2MZ Modernization of Railway Lines and Stations Line speed increasing. AGC and AGTC Agreement. AGC and AGTC railway network. Principles of modernization (conceptual papers, definitions of basic conc Track geometrical characteristics on modernized railway lines. Superstructure and	KZ basic eleme hape functio KZ kz basic eleme alysis). Eleme basic eleme KZ basic eleme ical and synt basic eleme KZ basic eleme KZ basic eleme KZ basic eleme ical and synt basic eleme KZ basic eleme ical and synt basic eleme KZ basic eleme ical and synt basic eleme KZ basic eleme KZ basic eleme KZ basic eleme KZ basic eleme wm the world. basic eleme	2 ents using ons and 2 ents of parallel 2 thetic methods, 2 reight transport 2 dual principles). 2 evelopment 2 vil be chosen 2 track vehicle, 2 . The issues of
Total fails: witching in the forse in the CANY A. 18Y2MP Finite Element Method And Its Application Basic mathematical formulation of the Finite Element Method. Direct Stiffness Method used in structural mechanics. Evaluation of stiffness matrices for the I variational principles. Element formulation (bar and beam elements, CST, LST, quadrilateral, tetrahedral and brick elements). Natural coordinates, natural st isoparametric representation. Numerical integration. Introduction to dynamics. FEM programming. 16Y2MK Quality Methods for Vehicles Quality management methods list, customer data acquisition and analysis of customer requirements, QFD, DFM, DFA, DFS. FMEA (Failure mode effect ana (team) design. 12Y2MD Methods of Traffic Regulation and Prediction Basic ways of traffic prognosis, traffic prognosis for large area (calculation of future traffic volumes, calculation of future traffic volumes between areas (analogi modal split, traffic distribution to road network). Shock wave in traffic flow. Service levels and their traffic volumes. Acceleration noise. 17Y2MM Mobility of Small Towns Basic terms, networks of railway and bus lines, alternative forms of regional transport, influence in regional transport in vicinity of big cities, solutions of passic in regions, activities related to regional transport, asety in regions. 12Y2MZ Modernization of Railway Lines and Stations Line speed increasing. AGC and AGTC Agreement. AGC anal AGTC railway network. Principles of modernization (conceptual papers, definitions of basic conc 12Y2MZ <td< td=""><td>KZ basic elemention hape function KZ alysis). Elemention KZ KZ incal and synth KZ incal and synth</td><td>2 ents using ons and 2 enents of parallel 2 thetic methods, 2 reight transport 2 dual principles). Development 2 vil be chosen 2 track vehicle, 2 . The issues of</td></td<>	KZ basic elemention hape function KZ alysis). Elemention KZ KZ incal and synth	2 ents using ons and 2 enents of parallel 2 thetic methods, 2 reight transport 2 dual principles). Development 2 vil be chosen 2 track vehicle, 2 . The issues of
Total trainic. Modelling of trainic Totals in the CADMA A. 18Y2MP Finite Element Method And Its Application Basic mathematical formulation of the Finite Element Method. Direct Stiffness Method used in structural mechanics. Evaluation of stiffness matrices for the I variational principles. Element formulation (bar and beam elements, CST, LST, quadrilateral, tetrahedral and brick elements). Natural coordinates, natural st isoparametric representation. Numerical integration. Introduction to dynamics. FEM programming. 16Y2MK Quality Methods for Vehicles Quality management methods list, customer data acquisition and analysis of customer requirements, QFD, DFM, DFA, DFS. FMEA (Failure mode effect ana (team) design. 12Y2MD Methods of Traffic Regulation and Prediction Basic ways of traffic prognosis, traffic prognosis for large area (calculation of future traffic volumes, calculation of future traffic volumes between areas (analogi modal split, traffic distribution to road network). Shock wave in traffic flow. Service levels and their traffic volumes. Acceleration noise. 17Y2MM Mobility of Small Towns Basic terms, networks of railway and bus lines, alternative forms of regional transport, influence in regional transport in vicinity of big cities, solutions of passis in regions. 12Y2MZ Modernization of Railway Lines and Stations Line speed increasing, AGC and AGTC Agreement. AGC and AGTC railway network. Principles of modernization (conceptual papers, definitions of basic conc Track geometrical characteristics on modernized railway lines. Superstruc	KZ basic eleme hape function KZ alysis). Eleme KZ jical and synth KZ ical and synth KZ in the world. KZ in the world.	2 ents using ons and 2 ents of parallel 2 thetic methods, 2 reight transport 2 dual principles). Development 2 vil be chosen 2 track vehicle, 2 . The issues of 2 slation and civil
Total trainic, Modelling of Maine, Ma	KZ basic eleme hape function KZ alysis). Eleme basic eleme KZ basic eleme me the world. kZ kZ basic eleme	2 ents using ons and 2 ents of parallel 2 thetic methods, 2 reight transport 2 dual principles). Development 2 vil be chosen 2 track vehicle, 2 . The issues of 2 slation and civil arriers for
Total trainer, index trainer, index in the CADIXA A. [BY2MP] Finite Element Method And Its Application Basic mathematical formulation of the Finite Element Method. Direct Stiffness Method used in structural mechanics. Evaluation of stiffness matrices for the I variational principles. Element formulation (bar and beam elements, CST, LST, quadrilateral, tetrahedral and brick elements). Natural coordinates, natural st isoparametric representation. Numerical integration. Introduction to dynamics. FEM programming. 16Y2MK Quality Methods for Vehicles Quality Methods of Traffic Regulation and analysis of customer requirements, QFD, DFM, DFA, DFS. FMEA (Failure mode effect ana (team) design. 12Y2MD Methods of Traffic Regulation and Prediction Basic ways of traffic prognosis, traffic prognosis for large area (calculation of future traffic volumes, calculation of future traffic volumes between areas (analogi modal split, traffic distribution to road network). Shock wave in traffic flow. Service levels and their traffic volumes. Acceleration noise. 17Y2MM Mobility of Small Towns Basic terms, networks of railway and bus lines, alternative forms of regional transport, influence in regional transport in vicinity of big cities, solutions of passin regions, activities related to regional transport, passenger transport safety in regions. 12Y2MZ Modernization of Railway Lines and Stations Line speed increasing. AGC and AGTC Agreement. AGC and AGTC railway network. Principles of modernization (conceptual papers, definitions of basic conc 12Y2VIZ Modernization of the trazit corridor	KZ basic eleme hape function KZ alysis). Eleme basic eleme KZ basic eleme ical and synth kZ KZ basic eleme basic eleme basic eleme basic eleme <td>2 ents using ons and 2 ents of parallel 2 thetic methods, 2 reight transport 2 dual principles). Development 2 vil be chosen 2 vil be chosen 2 track vehicle, 2 . The issues of 2 slation and civil arriers for</td>	2 ents using ons and 2 ents of parallel 2 thetic methods, 2 reight transport 2 dual principles). Development 2 vil be chosen 2 vil be chosen 2 track vehicle, 2 . The issues of 2 slation and civil arriers for
Total trainer, wide line to the finite Element Method And Its Application Basic mathematical formulation of the Finite Element Method And Its Application Basic mathematical formulation (bar and beam elements, CST, LST, quadrilateral, tetrahedral and brick elements). Natural coordinates, natural sf isoparametric representation. Numerical integration. Introduction to dynamics. FEM programming. 16Y2MK Quality Methods for Vehicles Quality management methods list, customer data acquisition and analysis of customer requirements, QFD, DFM, DFA, DFS. FMEA (Failure mode effect and team) design. 12Y2MD Methods of Traffic Regulation and Prediction Basic ways of traffic prognosis, traffic prognosis for large area (calculation of future traffic volumes, calculation of future traffic volumes between areas (analogi modal split, traffic distribution to road network). Shock wave in traffic flow. Service levels and their traffic volumes. Acceleration noise. 17Y2MM Mobility of Small Towns Basic terms, networks of railway and bus lines, alternative forms of regional transport, influence in regional transport in vicinity of big cities, solutions of basic conc Track geometrical characteristics on modernized railway lines. Superstructure and substructure on upgraded lines. Designing of railway stations. Bridges an and realization of projects. Technical description of the transt corrifors. 14Y2OP Object Oriented Programming in Transport 1ave speed increasing. AGC and AGTC Agreement. AGC and AGTC railway network. Principles of modernization (conceptual papers, definitions of basic conc Track geometrical character	KZ basic eleme hape function KZ alysis). Eleme KZ jical and synth KZ senger and fin KZ ical and synth KZ ind tunnels. D KZ idem cases w KZ in the world. KZ in the world. KZ ins. EU legiss lities of air c KZ	2 ents using ons and 2 ents of parallel 2 thetic methods, 2 reight transport 2 dual principles). Development 2 vil be chosen 2 track vehicle, 2 . The issues of 2 slation and civil arriers for 2
Total value, inducting of nation (Note Internet Method And Its Application Basic mathematical formulation of the Finite Element Method. Direct Stiffness Method used in structural mechanics. Evaluation of stiffness matrices for the i variational principles. Element formulation (bar and beam elements, CST, LST, quadrilateral, tetrahedral and brick elements). Natural coordinates, natural st isoparametric representation. Numerical integration. Introduction to dynamics. FEM programming. 16Y2MK Quality Methods for Vehicles Quality management methods list, customer data acquisition and analysis of customer requirements, QFD, DFM, DFA, DFS. FMEA (Failure mode effect ana (team) design. 12Y2MD Methods of Traffic Regulation and Prediction Basic ways of traffic prognosis, traffic prognosis for large area (calculation of future traffic volumes, calculation of future traffic volumes between areas (analogi modal spit); traffic distributions to read network). Shock wave in traffic file. Image: Structure and substructure on upgraded lines. Designing of railway and bus lines, alternative forms of regional transport, influence in regional transport in vicinity of big cities, solutions of passe in regions, activities related to regional transport, passenger transport safety in regions. 12Y2MZ Modernization of Railway Lines and AGC and AGTC railway network. Principles of modernization (conceptual papers, definitions of basic conc Track geometrical characteristics on modernized arilway lines. Superstructure and substructure on upgraded lines. Designing of railway stations. Bridges an and realization of projects. Technical description of the tranzit corridors. 14Y2D	KZ basic eleme hape function KZ alysis). Eleme kz kZ jical and synth KZ kz kz kz k	2 ents using ons and 2 ents of parallel 2 thetic methods, 2 reight transport 2 dual principles). Development 2 vil be chosen 2 track vehicle, 2 track vehicle, 2 station and civil arriers for 2 E, RMSE, naive

14Y2PJ C++ Programming Language	KZ	2
OOP philosophy and basics of C++ programming language. Class, object, constructor, destructor, inheritance, abstract class, virtual methods, exception	ons, streams, meth	nod and operator
overloading, abstract data type implementation in C++.		
14Y2PH CAD Interface Programming	ΚZ	2
Introduction to CAD interface programming techniques with the help of LIST and VBA programming languages. Possibilities of proper objects (comm	hands), dialogues,	, interfaces, and
applications creation in CAD systems. Programming of cooperation with other applications (databases, spread-sheets).		
11Y2PM Programming in MATLAB	KZ	2
To explain the principle of modelling and simulation, description of Matlab environment and its settings, optimization and program code debugging, of	lata fitting and de	sianina GUI in
Matlab.		
12V2RD Realization of Transport Buildings	K7	2
Transport Building Process Building Code Land Permission and Building Permission Process Building Process Project		Ct Management
Transport buildings types. Florer boundershall be and the Decimentation and building remission rocess. Building rocess roject		
1772SJ Network Timetabling on the Rallway	KZ	2
I imetable samples. Capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds and the samples.	nd supplements. F	Rolling stock
circulation planning. Rules of train-diagramm creating. I imetables for more service-levels on the line. Construction slot conflicts between passenger-	and freight transp	ort. Network line
relations and waiting times, timetables for lines under construction.		
16Y2ST Special Technologies in Transport and Telecommunications	KZ	2
Micro, nano and special technologies, electric arc and its applications, plasma technologies, dipping, beam technologies, electron beams technology	/ in roduction and	mending of
vehicles, laser and laser technologies, soldering, gluing, ultrasound, diffusion, friction and explosion technologies, micro stoves, gas.		
17Y2SK Urban and Regional Rail Transport System	KZ	2
Factors influencing transport demand, modal-split, traffic flows distribution on public transit network. Line network optimization and configuration. Tim	netable designing	and evaluation
accenting integrated periodic timetable. Rolling stock circulation, staff and crew services optimization and their order to rosters. Framework legislation,	non-barrier effects	s and preference
of public transport. Marketing.		
15Y2TS Technician and Contemporary Society	ΚZ	2
Why to take off a hat in a room and open a door for a lady, are there simple solutions, science vs belief, do we need to know or is it enough to turn or	n a PC, it must be	true - it's on the
Internet and in newspapers, what are the sights for, interest in public affairs - a hangover from the past?		
12Y2UD Sustainable Transportation	KZ	2
Sustainable development, definition, history, legal framework. Sustainable development indicators, Sustainable transportation, definition, history, lega	al framework. Prac	ctical application
of sustainable development theory, case study.		
18Y2LIB Accident Biomechanics and Safety	K7	2
Anotomy of man Methode of Medical Diagnostics - RTG, CT MRLUS, Dynamics of traumatic events, Eactors influencing the severity of an accident	and the extent of a	traffic accident
Anatomy of main wethous of wethous Diagnositics - (C), With 00. Dynamics of namble events, ractions interference and the sevents of an account of the sevents of an account of the sevents of an account of the sevents of a sevent of the sevents of	ional modeling. P	rinciples of
Ingenes in reaction and interview of the second state and second states and second states and the second states and the second states and the second states and the second states and second sta	ional modeling. I	
Total for the second se	1/7	2
2312VZ Leadership and Human Resource Development	r.z	
Introduction to the study of numan resources, numan resources management, corporate goals, strategies, cultural and emical aspects. Team management, corporate goals, strategies, cultural and emical aspects. Team management, corporate goals, strategies, cultural and emical aspects.	jement, communio	cation in teams,
strategy and planning in human resources, etnics and corporate culture, cross-cultural differences. The labor code, introduction into protocols.		
18Y2VC Computational Mechanics in Transportation	KZ	2
Principle of virtual work and variational principles in FEM. Bar shaped, planar and three - dimensional structures in FEM. FEM in statics and in dyna	mics of transporta	ational systems.
Elastic, elastoplastic and viscoelastic material. FEM in problems of biomechanics. Numerical analysis of structural parts with programme ANSYS on	instances.	
23Y2VR Cope with Risks in Engineering Branches	KZ	2
Types of engineering branches directed to risks, procedures used in risk engineering, ensuring the secured systems, ensuring the safe systems, ensuring	uring the safe syst	ems of systems.

List of courses of this pass:

Code	Name of the course	Completion	Credits
11MME	Mathematical Models in Economics	KZ	2
Stochastic prosess	es and their classification, Poisson process, birth and death process, queueing models and their classification, graph and related term	hinology, cycles in	a graph and
their detection, th	e shortest and longest way through a graph, critical parth through a graph, extreme of a function of many arguments, free and const	rained extremum,	Lagrange
	multipliers, numerical methods in optimization, linear programming and its application.		
11XN1	Master Project 1	Z	2
11XN2	Master Project 2	Z	2
11Y2LG	Logics of Engineer's Judgement	KZ	2
Logical structure of	f engineer's judgement, its propositional and predicative logical base. Solutions of logical tasks through the methods of truthfulness a	and semantic anal	sis charts.
	Venn's diagram method. Logical basis for network design for the solution of technical tasks.		
11Y2PM	Programming in MATLAB	KZ	2
To explain the prin	ciple of modelling and simulation, description of Matlab environment and its settings, optimization and program code debugging, dat	a fitting and desigr	ning GUI in
	Matlab.		
12DZP	Transport and Environment	Z	2
This course aims th	e impact of transport on environment. The accent is put mainly on noise and vibration, emission, barrier effect and energy demands.	The noise measur	y is part and
	parcel of this course.		
12TDP	Traffic Flow Theory	Z,ZK	3
Mobility and associ	ated human problems. Basic traffic parameters and their measurement. Estimation of quality of services. Theoretical fundamentals an	d applications of m	athematical
models. Macrosco	pic, statistical and microscopic models. Theory of shock waves, queuing theory and special theory of traffic phenomena. Relation bethe	ween traffic model	s and traffic
	flow management.		
12XN1	Master Project 1	Z	2
12XN2	Master Project 2	Z	2

	Transport and Land Lice Planning	K 7	2
	Inalisport and Land Long to See Fraining		
	tamenta relation and connection between transport and territory, functamentals of transcriptory. Land - use planning, introduce of trans- solving priorities of different transport modes including pedestrian traffic and cycling transport. Traffic cale has no set in a construction of the transport modes include transport	ic on area and sha	ape or town,
	sowing principles of dimeteric transport modes including pedestrant raine and cycling transport. Trans canning, parking, complex trans		0
	Methods of Traffic Regulation and Prediction	KZ	Z
Basic ways of traffic	prognosis, trainic prognosis for large area (calculation of tuture trainic volumes, calculation of tuture trainic volumes between areas (and	logical and synthe	tic methods,
	modal split, traffic distribution to road network). Snock wave in traffic forwards used their traffic volumes. Acceleration r		
12Y2MH	Measurement and Modeling of Traffic Noise	KZ	2
Theoretical introdu	action to noise from traffic. Noise from rail transport. Noise from road traffic. Measurement and calculation of noise from rail traffic. Me	asurement and ca	alculation of
	noise from road traffic. Modelling of traffic noise in the CADNA A.		
12Y2MZ	Modernization of Railway Lines and Stations	KZ	2
Line speed increasi	ing. AGC and AGTC Agreement. AGC and AGTC railway network. Principles of modernization (conceptual papers, definitions of basic c	oncepts, individua	Il principles).
Track geometrical	characteristics on modernized railway lines. Superstructure and substructure on upgraded lines. Designing of railway stations. Bridge	es and tunnels. De	evelopment
	and realization of projects. Technical description of the tranzit corridors.		
12Y2RD	Realization of Transport Buildings	KZ	2
Transport Buildings	Types. Project Documentation Types. Building Code. Land Permission and Building Permission Process. Building Process. Project Ecc	onomics. Project M	lanagement.
12Y2UD	Sustainable Transportation	KZ	2
Sustainable develo	pment, definition, history, legal framework. Sustainable development indicators. Sustainable transportation, definition, history, legal fra	amework. Practica	application
	of sustainable development theory, case study.		
14XN1	Master Project 1	Z	2
14XN2	Master Project 2	7	2
14//001			2
	CATIA I Device with CATIA making basis parts and badias Making Calebbas according to study a comparis linking making adapting and	NZ	
Fundaments of wo	Jining with CATIA, making basic parts and bodies. Making 2D sketches, geometin succure, parametine initiang, making adaptive mod	els nom 20 skelci	nes. import
4.0/000	and export of made parts and bolies, whating assemble and visualization.	1/7	0
14Y2CS	Sensitivity of Systems	KZ	2
Design of system	s with defined reliability. The impact of changing parameters and subsystems within a system. System sensitivity computing, definition	n of sensitivity fun	ctions and
	matrices and their usability in system design.		
14Y2OP	Object Oriented Programming in Transport	KZ	2
Class, object, enc	apsulation, inheritance, polymorphism, templates, retyping, stream, exceptions, repository, collections, virtual methods and classes.	Problem cases wil	be chosen
	from microscopic simulation system, discrete event simulation, celular automata simulation and virtual life area.		1
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 (command	ds), dialogues, inte	erfaces, and
	applications creation in CAD systems. Programming of cooperation with other applications (databases, spread-sheets).		
14Y2PJ	C++ Programming Language	KZ	2
OOP philosophy an	d basics of C++ programming language. Class, object, constructor, destructor, inheritance, abstract class, virtual methods, exceptions,	streams, method a	and operator
	overloading, abstract data type implementation in C++.		
15J2A1	Language - English 1	Z	2
P	resentation Skills - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work	engagement.	1
15J2S1	Language - Spanish 1	7	2
Grammatical Struc	tures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills.	feedback skills. s	ummarising
technical text conte	ent, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and tec	hnical registers ar	nd their use,
	language of management.	0	
15.IBA2	Language - English 2	7	2
P	Europease and their production. Preparation for overseas work		1 -
15 1892	contailor of the operation of the operat	7	2
Grammatical Struc	Language - Spanish 2	foodback skills s	
tochnical toxt conto	tates and Style. Selection of conversation optics relating to transportation sciences. Developing perceptive and communicative skills,	beical registors ar	ad their use
	ant, structuring presentations and meeting minutes, elementary metorics of oreign ranguage and practical application, formal and tect language of management	nnical registers al	iu then use,
15VN1	Managango Drajast 1	7	2
	Master Floet	<u> </u>	2
15XN2	Master Project 2	Z	2
15Y2DN	Transportation Psychology in German Speaking Countries	l KZ	2
Introduction into b	roader view of traffic problems with regard to the work with texts (Physics for drivers, abusing alcohol during driving, exhaustion, getti	ng of driving licent	ce, children
	in traffic, traffic accident, traffic psychology in the internet etc.)		
15Y2HS	Road Transport History	KZ	2
Roads and road tra	affic in the Ancient Age, corridors of main mediveal pathways. Development of road traffic in the modern period, acceleration of road	transport developr	ment during
1st part of 20th cer	ntury. Development of road layout, geometric and construction layers. Beginning of modern road civil engineering. Development of roa	ad travelling in more	dern period.
	History of road intercections, bridges and traffic control, development of road signs.		
15Y2PT	Food in Transportation	KZ	2
The nutrition policy	Interaction transportation and foodstuffs. The health risks. Hygienic safeguard. The practical examples from the Czech Republic and	from the world. Th	he issues of
	dining cars, work trains and other railroad equipment. Legislation.		
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
_	Internet and in newspapers, what are the sights for, interest in public affairs - a hangover from the past?		
16TA.I	Technological Aspects of Quality	7	2
Certification and ac	creditation, quality management, standards of quality management and its application. guality system creation. tools and methods of g	uality improvemen	t, conformitv
	assurance, environmental certification, workplace certification, QMS integration, classification, certification of products and prod	ucers.	
16XN1	Master Project 1	7	2
16YN2	Mastar Project 2	7	2
IUVING		۷	

	Vehicle Hygiene	KZ	2
Emissions and ergo	onomy of vehicles and the influence on man and nature. National and international law related to the hygiene. Noise and vibrations - s	sources, creation, p	propagation,
physical values, wa	ys of measuring, prevention, elimination. Exhausts - creation, measurement, reduction, non-regular fuels and drives. Ergonomy - sitting reach. Condition - heating, ventilation, air-conditioning, filtration, tiredom,	g, standing, control,	operational
16Y2KV	Car Body Design	KZ	2
Personal cars b	ody, high-load car body, bus car body, and motorcycle as a construction set. Principles of design, production, testing and operation. I	Materials used for a	car body
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
	of the car body. Design and artistic design principles. Practical training.		-
16Y2MK	Quality Methods for Vehicles	KZ	2
Quality manageme	nt methods list, customer data acquisition and analysis of customer requirements, QFD, DFM, DFA, DFS. FMEA (Failure mode effect (team) design	analysis). Element	is of parallel
16Y2ST	Special Technologies in Transport and Telecommunications	K7	2
Micro. nano and	special technologies, electric arc and its applications, plasma technologies, dipping, beam technologies, electron beams technology	in roduction and m	ending of
,	vehicles, laser and laser technologies, soldering, gluing, ultrasound, diffusion, friction and explosion technologies, micro stoves	s, gas.	J -
17ILO	Information Technology in Logistics	Z,ZK	4
Basics of bar code	e technology. Basics of radiofrequency identification. Product numbering systems for intensive distribution. Packaging hierarchy and in	dentification model	s in supply
chain. Identificatio	n of trading partners in the supply chain. Basics of data communication in logistics. National and global multidisciplinary standards fo	or electronic data in	terchange.
	ERP Systems used in retail and fast moving consumer goods.		
17INV	Investments and Financing in Transport	Z,ZK	4
Projects and proj	ect planning, project financing, financing models, PPP financing, selection procedure, EIA study, project assessment and its criterion	is, NPV, IRR. Optim	nal variant
471.01/	selection. Zone planning and decision making.	7 71/	0
1/LGY	LOGISTICS Systems	C,ZK	6 dongorouo
Transport in logistic	s, intermodal italisport, electionic ton systems in road italisport, supply chain management, logistics partiers inpland alliances, logistic goods in logistics, management and marketing in logistics, identification systems in logistics. IT in logistic systems and transport	tation	, uangerous
17P IM	goods in logislics, management and manouling in logislics, identification systems in logislics, minogislics, management	7K	2
Project and plannin	a, project content, management and project task organization. Technical and economical assessment criterions. Criterion function and	d its components. C	Z Drganization
	and management of the project run.		. 3
17TTH	Transport Theory	Z.ZK	5
Elements of theory	of graphs. Minimum spanning tree, trees in graphs. Paths and cycles. Arc routing problems. Vehicle routing problems. Network flows. Loc	cation problems. Tra	ansportation
	elements. Transportation flows. Theory of displacement quality. Multicriterial decision making in transport processes.		
17XN1	Master Project 1	Z	2
17XN2	Master Project 2	Z	2
17Y2KI	Capital Investment in Transportation and Telecommunications	KZ	2
	Financial market, investment desicion making - long term goals and investment strategies, long temr financing.		
17Y2MM	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 p	bassenger and freig	ht transport
47)(001	In regions, activities related to regional transport, passenger transport sarety in regions.		
		1/7	<u> </u>
1/YZOJ Timotokla somol	Network - Interaction Realized interaction Pulse and association of the interaction of the second se	KZ	2
Timetable sample	es. Capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds and Rules of train-diagramm creating. Timetables for more service-levels on the line. Construction slot conflicts between passenger-	KZ d supplements. Rol	2 lling stock
Timetable sample circulation planning	es. Capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds and Rules of train-diagramm creating. Timetables for more service-levels on the line. Construction slot conflicts between passenger- and relations and waiting times, timetables for lines under construction.	KZ d supplements. Rol d freight transport. N	2 ling stock Network line
17Y2SJ Timetable sample circulation planning 17Y2SK	es. Capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds and Rules of train-diagramm creating. Timetables for more service-levels on the line. Construction slot conflicts between passenger- and relations and waiting times, timetables for lines under construction. Urban and Regional Rail Transport System	KZ d supplements. Rol d freight transport. N KZ	2 Iling stock Network line 2
Timetable sample circulation planning 17Y2SK Factors influencing	es. Capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds and Rules of train-diagramm creating. Timetables for more service-levels on the line. Construction slot conflicts between passenger- and relations and waiting times, timetables for lines under construction. Urban and Regional Rail Transport System g transport demand, modal-split, traffic flows distribution on public transit network. Line network optimization and configuration. Timetables	KZ d supplements. Rol d freight transport. N KZ able designing and	2 ling stock Network line 2 evaluation
TYY2SJ Timetable sample circulation planning 17Y2SK Factors influencing accenting integrate	es. Capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds and Rules of train-diagramm creating. Timetables for more service-levels on the line. Construction slot conflicts between passenger- and relations and waiting times, timetables for lines under construction. Urban and Regional Rail Transport System g transport demand, modal-split, traffic flows distribution on public transit network. Line network optimization and configuration. Timetable d periodic timetable. Rolling stock circulation, staff and crew services optimization and their order to rosters. Framework legislation, nor	KZ d supplements. Rol d freight transport. t KZ able designing and n-barrier effects and	2 ling stock Network line 2 evaluation preference
TYY2SJ Timetable sample circulation planning 17Y2SK Factors influencing accenting integrate	es. Capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds and Rules of train-diagramm creating. Timetables for more service-levels on the line. Construction slot conflicts between passenger- and relations and waiting times, timetables for lines under construction. Urban and Regional Rail Transport System g transport demand, modal-split, traffic flows distribution on public transit network. Line network optimization and configuration. Timeta d periodic timetable. Rolling stock circulation, staff and crew services optimization and their order to rosters. Framework legislation, nor of public transport. Marketing.	KZ d supplements. Rol d freight transport. N KZ able designing and n-barrier effects and	2 lling stock Network line 2 evaluation d preference
17Y2SJ Timetable sample circulation planning 17Y2SK Factors influencing accenting integrate 18XN1	es. Capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds and Rules of train-diagramm creating. Timetables for more service-levels on the line. Construction slot conflicts between passenger- and relations and waiting times, timetables for lines under construction. Urban and Regional Rail Transport System g transport demand, modal-split, traffic flows distribution on public transit network. Line network optimization and configuration. Timeta d periodic timetable. Rolling stock circulation, staff and crew services optimization and their order to rosters. Framework legislation, nor of public transport. Marketing. Master Project 1	KZ d supplements. Rol d freight transport. N KZ able designing and n-barrier effects and Z	2 ling stock Network line 2 evaluation d preference 2
17Y2SJ Timetable sample circulation planning 17Y2SK Factors influencing accenting integrate 18XN1 18XN2	es. Capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds and Rules of train-diagramm creating. Timetables for more service-levels on the line. Construction slot conflicts between passenger- and relations and waiting times, timetables for lines under construction. Urban and Regional Rail Transport System g transport demand, modal-split, traffic flows distribution on public transit network. Line network optimization and configuration. Timet d periodic timetable. Rolling stock circulation, staff and crew services optimization and their order to rosters. Framework legislation, nor of public transport. Marketing. Master Project 1 Master Project 2	KZ d supplements. Rol d freight transport. N KZ able designing and n-barrier effects and Z Z	2 ling stock Network line 2 evaluation 4 preference 2 2
17Y2SJ Timetable sample circulation planning 17Y2SK Factors influencing accenting integrate 18XN1 18XN2 18Y2D2	es. Capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds and Rules of train-diagramm creating. Timetables for more service-levels on the line. Construction slot conflicts between passenger- and relations and waiting times, timetables for lines under construction. Urban and Regional Rail Transport System g transport demand, modal-split, traffic flows distribution on public transit network. Line network optimization and configuration. Timet d periodic timetable. Rolling stock circulation, staff and crew services optimization and their order to rosters. Framework legislation, nor of public transport. Marketing. Master Project 1 Master Project 2 Dynamics of Transport Routes and Vehicles 2	KZ d supplements. Rol d freight transport. N KZ able designing and n-barrier effects and Z Z KZ	2 ling stock Network line 2 evaluation d preference 2 2 2 2
17Y2SJ Timetable sample circulation planning 17Y2SK Factors influencing accenting integrate 18XN1 18XN2 18Y2D2 Analysis of forces i	es. Capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds and Rules of train-diagramm creating. Timetables for more service-levels on the line. Construction slot conflicts between passenger- and relations and waiting times, timetables for lines under construction. Urban and Regional Rail Transport System g transport demand, modal-split, traffic flows distribution on public transit network. Line network optimization and configuration. Timeta d periodic timetable. Rolling stock circulation, staff and crew services optimization and their order to rosters. Framework legislation, nor of public transport. Marketing. Master Project 1 Master Project 2 Dynamics of Transport Routes and Vehicles 2 n the vehicle and transport routes and their influence on the stress and strain components of the vehicle structure or behavior of traff	KZ d supplements. Rol d freight transport. N KZ able designing and h-barrier effects and Z Z KZ fic routes. Creation	2 ling stock Network line 2 evaluation d preference 2 2 2 0 d dynamic
17Y2SJ Timetable sample circulation planning 17Y2SK Factors influencing accenting integrate 18XN1 18XN2 18Y2D2 Analysis of forces i models of vehicles	es. Capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds and Rules of train-diagramm creating. Timetables for more service-levels on the line. Construction slot conflicts between passenger- and relations and waiting times, timetables for lines under construction. Urban and Regional Rail Transport System g transport demand, modal-split, traffic flows distribution on public transit network. Line network optimization and configuration. Timeta d periodic timetable. Rolling stock circulation, staff and crew services optimization and their order to rosters. Framework legislation, nor of public transport. Marketing. Master Project 1 Master Project 2 Dynamics of Transport Routes and Vehicles 2 n the vehicle and transport routes and their influence on the stress and strain components of the vehicle structure or behavior of traff and transport routes. Vibration of systems with a finite number of degrees of freedom. Methods of constant stiffness and constant con- ter of degrees of freedom. Methods of constant stiffness and constant con- ter of degrees of freedom. Methods of constant stiffness and constant con- ter of degrees of freedom. Methods of constant stiffness and constant con- ter of degrees of freedom. Methods of constant stiffness and constant con- ter of degrees of freedom. Methods of constant stiffness and constant con- ter of degrees of freedom. Methods of constant stiffness and constant con- ter of degrees of freedom. Methods of constant stiffness and constant con- ter of degrees of freedom. Methods of constant stiffness and constant con- ter of degrees of freedom. Methods of constant stiffness and constant con- ter of degrees of freedom. Methods of constant stiffness and constant con- ter of degrees of freedom. Methods of constant stiffness and constant con- ter of degrees of freedom. Methods of constant stiffness and constant con- ter of degrees of freedom. Methods of constant stiffness and constant con- te	KZ d supplements. Rol freight transport. N KZ able designing and barrier effects and C Z KZ fic routes. Creation npliance. Dynamic	2 ling stock Network line 2 evaluation d preference 2 2 of dynamic calculations
17Y2SJ Timetable sample circulation planning 17Y2SK Factors influencing accenting integrate 18XN1 18XN2 18Y2D2 Analysis of forces i models of vehicles	es. Capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds and Rules of train-diagramm creating. Timetables for more service-levels on the line. Construction slot conflicts between passenger- and relations and waiting times, timetables for lines under construction. Urban and Regional Rail Transport System g transport demand, modal-split, traffic flows distribution on public transit network. Line network optimization and configuration. Timeta d periodic timetable. Rolling stock circulation, staff and crew services optimization and their order to rosters. Framework legislation, nor of public transport. Marketing. Master Project 1 Master Project 2 Dynamics of Transport Routes and Vehicles 2 n the vehicle and transport routes and their influence on the stress and strain components of the vehicle structure or behavior of traff and transport routes. Vibration of systems with a finite number of degrees of freedom. Methods of constant stiffness and constant con of structural systems. Criteria for the admissibility of oscillation.	KZ d supplements. Rol d freight transport. N KZ able designing and h-barrier effects and Z KZ fic routes. Creation npliance. Dynamic	2 ling stock Network line 2 evaluation d preference 2 2 of dynamic calculations
17Y2SJ Timetable sample circulation planning 17Y2SK Factors influencing accenting integrate 18XN1 18XN2 18Y2D2 Analysis of forces i models of vehicles 18Y2DC Basic theory, and co	es. Capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds and a Rules of train-diagramm creating. Timetables for more service-levels on the line. Construction slot conflicts between passenger- and relations and waiting times, timetables for lines under construction. Urban and Regional Rail Transport System g transport demand, modal-split, traffic flows distribution on public transit network. Line network optimization and configuration. Timeta d periodic timetable. Rolling stock circulation, staff and crew services optimization and their order to rosters. Framework legislation, nor of public transport. Marketing. Master Project 1 Master Project 2 Dynamics of Transport Routes and Vehicles 2 n the vehicle and transport routes and their influence on the stress and strain components of the vehicle structure or behavior of traff and transport routes. Vibration of systems with a finite number of degrees of freedom. Methods of constant stiffness and constant con of structural systems. Criteria for the admissibility of oscillation. Dynamics of Transport Routes and Vehicles Dynamics of Transport Routes and Vehicles and vehicles for constant stiffness and constant con of structural systems. Criteria for the admissibility of oscillation.	KZ d supplements. Rol d freight transport. N KZ able designing and h-barrier effects and Z KZ fic routes. Creation npliance. Dynamic KZ fuebicles and trans	2 ling stock Network line 2 evaluation d preference 2 2 of dynamic calculations 2 poot routes
17Y2SJ Timetable sample circulation planning 17Y2SK Factors influencing accenting integrate 18XN1 18XN2 18Y2D2 Analysis of forces i models of vehicles 18Y2DC Basic theory and ca Vibration of system	es. Capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds and a Rules of train-diagramm creating. Timetables for more service-levels on the line. Construction slot conflicts between passenger- and relations and waiting times, timetables for lines under construction. Urban and Regional Rail Transport System g transport demand, modal-split, traffic flows distribution on public transit network. Line network optimization and configuration. Timeta d periodic timetable. Rolling stock circulation, staff and crew services optimization and their order to rosters. Framework legislation, nor of public transport. Marketing. Master Project 1 Master Project 2 Dynamics of Transport Routes and Vehicles 2 n the vehicle and transport routes and their influence on the stress and strain components of the vehicle structure or behavior of traff and transport routes. Vibration of systems with a finite number of degrees of freedom. Methods of constant stiffness and constant con of structural systems. Criteria for the admissibility of oscillation. Dynamics of Transport Routes and Vehicles alculations of more mass systems. Analysis of the forces acting between the vehicle and transport route. Creation of dynamic models of s with a finite number of degrees of freedom. Methods of stiffness constants and Diability constants. Fundamentals of vibration of bridge s with a finite number of degrees of structure and transport route. Creation of dynamic models of s with a finite number of degrees of freedom. Methods of stiffness constants and Diability constants. Fundamentals of vibration of bridge	KZ d supplements. Rol d freight transport. N KZ able designing and n-barrier effects and Z KZ fic routes. Creation npliance. Dynamic KZ f vehicles and trans ies. Criteria for the a	2 ling stock Network line 2 evaluation d preference 2 2 of dynamic calculations 2 sport routes. admissibility
17Y2SJ Timetable sample circulation planning 17Y2SK Factors influencing accenting integrate 18XN1 18XN2 18Y2D2 Analysis of forces i models of vehicles 18Y2DC Basic theory and ca Vibration of system	es. Capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds and a Rules of train-diagramm creating. Timetables for more service-levels on the line. Construction slot conflicts between passenger- and relations and waiting times, timetables for lines under construction. Urban and Regional Rail Transport System g transport demand, modal-split, traffic flows distribution on public transit network. Line network optimization and configuration. Timet d periodic timetable. Rolling stock circulation, staff and crew services optimization and their order to rosters. Framework legislation, nor of public transport. Marketing. Master Project 1 Master Project 2 Dynamics of Transport Routes and Vehicles 2 n the vehicle and transport routes and their influence on the stress and strain components of the vehicle structure or behavior of traff and transport routes. Vibration of systems with a finite number of degrees of freedom. Methods of constant stiffness and constant con of structural systems. Criteria for the admissibility of oscillation. Dynamics of Transport Routes and Vehicles alculations of more mass systems. Analysis of the forces acting between the vehicle and transport route. Creation of dynamic models o s with a finite number of degrees of freedom. Methods of stiffness constants and pliability constants. Fundamentals of vibration of bridg of oscillation. Experimental methods in dynamics.	KZ d supplements. Rol d freight transport. N KZ able designing and h-barrier effects and Z KZ fic routes. Creation npliance. Dynamic KZ f vehicles and trans tes. Criteria for the a	2 ling stock Network line 2 evaluation d preference 2 2 of dynamic calculations 2 sport routes. admissibility
17Y2SJ Timetable sample circulation planning 17Y2SK Factors influencing accenting integrate 18XN1 18XN2 18Y2D2 Analysis of forces i models of vehicles 18Y2DC Basic theory and ca Vibration of system 18Y2MP	es. Capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds and a Rules of train-diagramm creating. Timetables for more service-levels on the line. Construction slot conflicts between passenger- and relations and waiting times, timetables for lines under construction. Urban and Regional Rail Transport System g transport demand, modal-split, traffic flows distribution on public transit network. Line network optimization and configuration. Timeta d periodic timetable. Rolling stock circulation, staff and crew services optimization and their order to rosters. Framework legislation, nor of public transport. Marketing. Master Project 1 Master Project 2 Dynamics of Transport Routes and Vehicles 2 n the vehicle and transport routes and their influence on the stress and strain components of the vehicle structure or behavior of traff and transport routes. Vibration of systems with a finite number of degrees of freedom. Methods of constant stiffness and constant con of structural systems. Criteria for the admissibility of oscillation. Dynamics of Transport Routes and Vehicles alculations of more mass systems. Analysis of the forces acting between the vehicle and transport route. Creation of dynamic models o s with a finite number of degrees of freedom. Methods of stiffness constants and pliability constants. Fundamentals of vibration of bridg of oscillation. Experimental methods in dynamics. Finite Element Method And Its Apolication	KZ d supplements. Rol d freight transport. I KZ able designing and n-barrier effects and Z KZ fic routes. Creation npliance. Dynamic KZ f vehicles and trans ges. Criteria for the a KZ	2 ling stock Network line 2 evaluation 4 preference 2 2 of dynamic calculations 2 sport routes. admissibility 2
TYY2SJ Timetable sample circulation planning 17Y2SK Factors influencing accenting integrate 18XN1 18XN2 18Y2D2 Analysis of forces i models of vehicles 18Y2DC Basic theory and ca Vibration of system 18Y2MP Basic mathemat	es. Capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds and a Rules of train-diagramm creating. Timetables for more service-levels on the line. Construction slot conflicts between passenger- and relations and waiting times, timetables for lines under construction. Urban and Regional Rail Transport System of transport demand, modal-split, traffic flows distribution on public transit network. Line network optimization and configuration. Timeta d periodic timetable. Rolling stock circulation, staff and crew services optimization and their order to rosters. Framework legislation, nor of public transport. Marketing. Master Project 1 Master Project 2 Dynamics of Transport Routes and Vehicles 2 n the vehicle and transport routes and their influence on the stress and strain components of the vehicle structure or behavior of traffic and transport routes. Vibration of systems with a finite number of degrees of freedom. Methods of constant stiffness and constant con of structural systems. Criteria for the admissibility of oscillation. Dynamics of Transport Routes and Vehicles and vehicles salculations of systems with a finite number of degrees of freedom. Methods of constant stiffness and constant con of structural systems. Criteria for the admissibility of oscillation. Dynamics of Transport Routes and Vehicles and vehicles alculations of more mass systems. Analysis of the forces acting between the vehicle and transport route. Creation of dynamic models o s with a finite number of degrees of freedom. Methods of stiffness constants and pliability constants. Fundamentals of vibration of bridg of oscillation. Experimental methods in dynamics. Finite Element Method And Its Application ical formulation of the Finite Element Method. Direct Stiffness Method used in structural mechanics. Evaluation of stiffness matrices formulation of the Finite Element Method. Direct Stiffness Method used in structural mechanics.	KZ d supplements. Rol freight transport. N KZ able designing and barrier effects and C Z KZ fic routes. Creation npliance. Dynamic KZ f vehicles and trans ges. Criteria for the a KZ for the basic eleme	2 ling stock Network line 2 evaluation d preference 2 of dynamic calculations 2 sport routes. admissibility 2 nts using
TYY2SJ Timetable sample circulation planning 17Y2SK Factors influencing accenting integrate 18XN1 18XN2 18Y2D2 Analysis of forces i models of vehicles 18Y2DC Basic theory and ca Vibration of system 18Y2MP Basic mathemati variational princ	es. Capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds and a Rules of train-diagramm creating. Timetables for more service-levels on the line. Construction slot conflicts between passenger- and relations and waiting times, timetables for lines under construction. Urban and Regional Rail Transport System g transport demand, modal-split, traffic flows distribution on public transit network. Line network optimization and configuration. Timeton d periodic timetable. Rolling stock circulation, staff and crew services optimization and their order to rosters. Framework legislation, nor of public transport. Marketing. Master Project 1 Master Project 2 Dynamics of Transport Routes and Vehicles 2 n the vehicle and transport routes and their influence on the stress and strain components of the vehicle structure or behavior of traff and transport routes. Vibration of systems with a finite number of degrees of freedom. Methods of constant stiffness and constant con of structural systems. Criteria for the admissibility of oscillation. Dynamics of Transport Routes and Vehicles and Vehicles alculations of more mass systems. Analysis of the forces acting between the vehicle and transport route. Creation of dynamic models o s with a finite number of degrees of freedom. Methods of constants. Fundamentals of vibration of bridg of oscillation. Experimental methods in dynamics. Finite Element Method And Its Application ical formulation of the Finite Element Method. Direct Stiffness Method used in structural mechanics. Evaluation of stiffness matrices for ciples. Element formulation (bar and beam elements, CST, LST, quadrilateral, tetrahedral and brick elements). Natural coordinates, n	KZ d supplements. Rol d freight transport. I KZ able designing and h-barrier effects and C Z KZ fic routes. Creation npliance. Dynamic KZ f vehicles and trans tes. Criteria for the a for the basic eleme atural shape function	2 ling stock Network line 2 evaluation d preference 2 2 of dynamic calculations 2 sport routes. admissibility 2 nts using ons and
TYY2SJ Timetable sample circulation planning 17Y2SK Factors influencing accenting integrate 18XN1 18XN2 18Y2D2 Analysis of forces i models of vehicles 18Y2DC Basic theory and ca Vibration of system 18Y2MP Basic mathemati variational princ	es. Capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds and Rules of train-diagramm creating. Timetables for more service-levels on the line. Construction slot conflicts between passenger- and relations and waiting times, timetables for lines under construction. Urban and Regional Rail Transport System g transport demand, modal-split, traffic flows distribution on public transit network. Line network optimization and configuration. Timet d periodic timetable. Rolling stock circulation, staff and crew services optimization and their order to rosters. Framework legislation, nor of public transport. Marketing. Master Project 1 Master Project 2 Dynamics of Transport Routes and Vehicles 2 n the vehicle and transport routes and their influence on the stress and strain components of the vehicle structure or behavior of traff and transport routes. Vibration of systems with a finite number of degrees of freedom. Methods of constant stiffness and constant con of structural systems. Criteria for the admissibility of oscillation. Dynamics of Transport Routes and Vehicles and Vehicles of swith a finite number of degrees of freedom. Methods of constant stiffness and constant con of scillation. Experimental methods in dynamics. Finite Element Method And Its Application ical formulation of the Finite Element Method. Direct Stiffness Method used in structural mechanics. Evaluation of stiffness matrices for isoparametric representation. Numerical integration. Introduction to dynamics. FEM programming.	KZ d supplements. Rol d freight transport. N KZ able designing and h-barrier effects and C KZ fic routes. Creation npliance. Dynamic KZ f vehicles and trans ges. Criteria for the a tural shape function	2 ling stock Network line 2 evaluation d preference 2 2 of dynamic calculations 2 sport routes. admissibility 2 nts using ons and
17Y2SJ Timetable sample circulation planning 17Y2SK Factors influencing accenting integrate 18XN1 18XN2 18Y2D2 Analysis of forces i models of vehicles 18Y2DC Basic theory and ca Vibration of system 18Y2MP Basic mathemat variational prince	A detwork Timerability of the Kaliway as. Capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds and be as. Capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds and be as a capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds and be as a capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds and be a service-levels on the line. Construction slot conflicts between passenger- and relations and waiting times, timetables for lines under construction. Urban and Regional Rail Transport System g transport demand, modal-split, traffic flows distribution on public transit network. Line network optimization and configuration. Timeta d periodic timetable. Rolling stock circulation, staff and crew services optimization and their order to rosters. Framework legislation, nor of public transport. Marketing. Master Project 1 Master Project 2 Dynamics of Transport Routes and Vehicles 2 n the vehicle and transport routes and their influence on the stress and strain components of the vehicle structure or behavior of traff and transport routes. Vibration of systems with a finite number of degrees of freedom. Methods of constant stiffness and constant con of structural systems. Criteria for the admissibility of oscillation. Dynamics of Transport Routes and Vehicles alculations of more mass systems. Analysis of the forces acting between the vehicle and transport route. Creation of dynamic models o s with a finite number of degrees of freedom. Methods of stiffness constants and pliability constants. Fundamentals of vibration of bridg of oscillation. Experimental methods in dynamics. Finite Element Method. Direct Stiffness Method used in structural mechanics. Evaluation of stiffness matrices f ciples. Element formulation (bar and beam e	KZ d supplements. Rold d freight transport. No KZ able designing and n-barrier effects and Z KZ fic routes. Creation npliance. Dynamic KZ f vehicles and transition pes. Criteria for the addition KZ for the basic eleme atural shape function KZ	2 ling stock Network line 2 evaluation d preference 2 2 of dynamic calculations 2 sport routes. admissibility 2 nts using ons and 2
17Y2SJ Timetable sample circulation planning 17Y2SK Factors influencing accenting integrate 18XN1 18XN2 18Y2D2 Analysis of forces i models of vehicles 18Y2DC Basic theory and ca Vibration of system 18Y2MP Basic mathemativariational print 18Y2UB Anatomy of man. M	Active of train-diagramm creating. Timetables for more service-levels on the line. Construction slot conflicts between passenger- and relations and waiting times, timetables for lines under construction. Urban and Regional Rail Transport System g transport demand, modal-split, traffic flows distribution on public transit network. Line network optimization and configuration. Timetables for lines under construction and configuration. Timetables for lines under construction and configuration. Timeta dependence to rosters. Framework legislation, nor of public transport. Marketing. Master Project 1 Master Project 2 Dynamics of Transport Routes and Vehicles 2 n the vehicle and transport routes and their influence on the stress and strain components of the vehicle structure or behavior of traff and transport routes. Vibration of systems with a finite number of degrees of freedom. Methods of constant stiffness and constant con of structural systems. Criteria for the admissibility of oscillation. Dynamics of Transport Routes and Vehicles alculations of more mass systems. Analysis of the forces acting between the vehicle and transport route. Creation of dynamic models of s with a finite number of degrees of structural methods in dynamics. Finite Element Methods of stiffness constants and plaibility constants. Fundamentals of vibration of bridg of oscillation. Experimental methods in dynamics. Finite Element Method And Its Application ical formulation (bar and beam elements, CST, LST, quadrilateral, tetrahedral and brick elements). Natural coordinates, n isoparametric representation. Numerical integration. Introduction to dynamics. FEM programming. Accident Biomechanics and Safety ethods of Medical Diagnostics - RTG, CT, MRI, US. Dynamics of traumatic events. Factors influencing the severity of an accident and profine Dedeption invites integret action in the finite relief to the integret	KZ d supplements. Rold d freight transport. No KZ able designing and n-barrier effects and Z KZ fic routes. Creation npliance. Dynamic KZ f vehicles and transition pes. Criteria for the absic eleme atural shape function KZ for the basic eleme atural shape function KZ for the basic eleme atural shape function KZ f the extent of a traff	2 ling stock Network line 2 evaluation d preference 2 2 of dynamic calculations 2 sport routes. admissibility 2 nts using ons and 2 fic accident. fic accident.
17Y2SJ Timetable sample circulation planning 17Y2SK Factors influencing accenting integrate 18XN1 18XN2 18Y2D2 Analysis of forces i models of vehicles 18Y2DC Basic theory and ca Vibration of system 18Y2MP Basic mathemative variational prino 18Y2UB Anatomy of man. M Injuries in road t	Network Timetabiling of the Railway es. Capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds and Rules of train-diagramm creating. Timetables for more service-levels on the line. Construction slot conflicts between passenger- and relations and waiting times, timetables for lines under construction. Urban and Regional Rail Transport System transport demand, modal-split, traffic flows distribution on public transit network. Line network optimization and configuration. Timet d periodic timetable. Rolling stock circulation, staff and crew services optimization and their order to rosters. Framework legislation, nor of public transport. Marketing. Master Project 1 Master Project 2 Dynamics of Transport Routes and Vehicles 2 n the vehicle and transport routes and their influence on the stress and strain components of the vehicle structure or behavior of traff and transport routes. Vibration of systems with a finite number of degrees of freedom. Methods of constant stiffness and constant con of structural systems. Criteria for the admissibility of oscillation. Dynamics of Transport Routes and Vehicles laculations of more mass systems. Analysis of the forces acting between the vehicle and transport route. Creation of dynamic models o s with a finite number of degrees of freedom. Methods in dynamics. Finite Element Method And Its Application ical formulation (bar and beam elements, CST, LST, quadrilateral, tetrahedral and brick elements). Natural coordinates, n isoparametric representation. Numerical integration. Introduction to dynamics. Accident Biomechanics and Safety ethods of Medical Diagnostics - RTG, CT, MRI, US. Dynamics of tramatic events. Factors influencing the severity of an accident and faffic. Pedestrian injuries. Injury in railway and air traffic accidents. Analysis of biomechanica events in accidents and their computati trastment and transport tractice.	KZ d supplements. Rold d freight transport. No KZ able designing and n-barrier effects and Z KZ fic routes. Creation npliance. Dynamic KZ f vehicles and transition ges. Criteria for the action for the basic eleme atural shape function KZ the extent of a traffornal modeling. Prir	2 ling stock Network line 2 evaluation d preference 2 2 of dynamic calculations 2 sport routes. admissibility 2 nts using ons and 2 fic accident. nciples of
17Y2SJ Timetable sample circulation planning 17Y2SK Factors influencing accenting integrate 18XN1 18XN2 18Y2D2 Analysis of forces i models of vehicles 18Y2DC Basic theory and ca Vibration of system 18Y2MP Basic mathemat variational princ 18Y2UB Anatomy of man. M Injuries in road t 18Y2VC	Network Interacting of the Railway es. Capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds and Rules of train-diagramm creating. Timetables for more service-levels on the line. Construction slot conflicts between passenger- and relations and waiting times, timetables for lines under construction. Urban and Regional Rail Transport System transport demand, modal-split, traffic flows distribution on public transit network. Line network optimization and configuration. Timet d periodic timetable. Rolling stock circulation, staff and crew services optimization and their order to rosters. Framework legislation, nor of public transport. Marketing. Master Project 1 Master Project 2 Dynamics of Transport Routes and Vehicles 2 n the vehicle and transport routes and their influence on the stress and strain components of the vehicle structure or behavior of traff and transport routes. Vibration of systems with a finite number of degrees of freedom. Methods of constant stiffness and constant con of structural systems. Criteria for the admissibility of oscillation. Dynamics of Transport Routes and Vehicles laculations of more mass systems. Analysis of the forces acting between the vehicle and transport route. Creation of dynamic models o s with a finite number of degrees of freedom. Methods of nore mass systems. Analysis of the forces acting between the vehicle and transport route. Creation of bridg of oscillation. Experimental methods in dynamics. Finite Element Method And Its Application ical formulation of the Finite Element Method. Direct Stiffness Method used in structural mechanics. Fell programming. Accident Biomechanics and Safety ethods of Medical Diagnostics - RTG, CT, MRI, US. Dynamics of traumatic events. Factors influencing the severity of an accident and raffic. Pedestrian injuries. Injury in railway and air traffic accidents. Analysis of biomechanical events in accidents and their computati treatment and rehabilitation. Protective ele	KZ d supplements. Rold d freight transport. It KZ able designing and n-barrier effects and Z KZ fic routes. Creation npliance. Dynamic KZ f vehicles and transfers. Criteria for the action the basic eleme atural shape function KZ for the basic eleme atural shape function KZ the extent of a traff onal modeling. Prir	2 ling stock Network line 2 evaluation d preference 2 2 of dynamic calculations 2 sport routes. admissibility 2 nts using ons and 2 fic accident. nciples of
17Y2SJ Timetable sample circulation planning 17Y2SK Factors influencing accenting integrate 18XN1 18XN2 18Y2D2 Analysis of forces i models of vehicles 18Y2DC Basic theory and ca Vibration of system 18Y2MP Basic mathemati variational print 18Y2UB Anatomy of man. M Injuries in road t 18Y2VC Principle of virtual	Network Timerability of the Railway es. Capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds and relations and waiting times, timetables for lines under construction. Urban and Regional Rail Transport System g transport demand, modal-split, traffic flows distribution on public transit network. Line network optimization and configuration. Timet d periodic timetable. Rolling stock circulation, staff and crew services optimization and their order to rosters. Framework legislation, nor of public transport. Marketing. Master Project 1 Master Project 2 Dynamics of Transport Routes and Vehicles 2 n the vehicle and transport routes and their influence on the stress and strain components of the vehicle structure or behavior of traff and transport routes. Vibration of systems with a finite number of degrees of freedom. Methods of constant stiffness and constant con of structural systems. Criteria for the admissibility of oscillation. Dynamics of Transport Routes and Vehicles laculations of more mass systems. Analysis of the forces acting between the vehicle and transport route. Creation of dynamic models o s with a finite number of degrees of freedom. Methods of onstants. Fundamentals of vibration of bridg of oscillation. Experimental methods in dynamics. Finite Element Method And Its Application isoparametric representation. Numerical integration. Introduction of stiffness matrices f ciples. Element formulation (bar and beam elements, CST, LST, quadrilateral, tetrahedral and brick elements). Natural coordinates, n isoparametric representation. Numerical integration. Introduction to dynamics. FEM programming. Accident Biomechanics of transport. Computational Mechanics in Transportation work and variational principiles in FEM. Bar shaped. Janar and there - dimensional structures in FEM in statics and in dynamic	KZ d supplements. Rol d freight transport. It KZ able designing and able designing and able designing and able designing and barrier effects and Z KZ fic routes. Creation npliance. Dynamic KZ f vehicles and transpes. Criteria for the asis for the basic eleme atural shape function KZ the extent of a traft onal modeling. Prir KZ s of transportation	2 ling stock Network line 2 evaluation d preference 2 2 of dynamic calculations 2 sport routes. admissibility 2 nts using ons and 2 fic accident. nciples of 2 al systems
17Y2SJ Timetable sample circulation planning 17Y2SK Factors influencing accenting integrate 18XN1 18XN2 18Y2D2 Analysis of forces i models of vehicles 18Y2DC Basic theory and ca Vibration of system 18Y2MP Basic mathemati variational princ 18Y2UB Anatomy of man. M Injuries in road t 18Y2VC Principle of virtual Elastic,	Network Timerability of the Railway is of train-diagramm creating. Timetables for more service-levels on the line. Construction slot conflicts between passenger- and relations and waiting times, timetables for lines under construction. Urban and Regional Rail Transport System transport demand, modal-split, traffic flows distribution on public transit network. Line network optimization and configuration. Timet d periodic timetable. Rolling stock circulation, staff and crew services optimization and their order to rosters. Framework legislation, nor of public transport. Marketing. Master Project 1 Master Project 2 Dynamics of Transport Routes and Vehicles 2 n the vehicle and transport routes and their influence on the stress and strain components of the vehicle structure or behavior of traff and transport routes. Vibration of systems with a finite number of degrees of freedom. Methods of constant stiffness and constant con of structural systems. Criteria for the admissibility of oscillation. Dynamics of Transport Routes and Vehicles laculations of more mass systems. Analysis of the forces acting between the vehicle and transport creation of dynamic models o s with a finite number of degrees on the vehicle and transport of dynamic models o s with a finite number of stiffness constants and pliability constants. Fundamentals of vibration of bridg of oscillation. Experimental methods in dynamics. Finite Element Method And Its Application ical formulation (bar and beam elements, CST, LST, quadrilateral, tetrahedral and brick elements). Natural coordinates, n isoparametric representation. Numerical integration. Introduction to dynamics. FEM programming. Accident Biomechanics of Transport and Safety ethods of Medical Diagnostics - RTG, CT, MRI, US. Dynamics of transmics and Safety ethods of Medical Diagnostics - RTG, CT, MRI, US. Dynamics of transports in Transportation work and variational principles in FEM. Bar shaped, planar and three - dimensional structureal prats with programme A	KZ d supplements. Rol d freight transport. It KZ able designing and abler designing and abler designing and abler designing and barrier effects and Z KZ fic routes. Creation npliance. Dynamic KZ for the basic eleme atural shape function KZ the extent of a traff conal modeling. Prir KZ so of transportation ISYS on instances.	2 ling stock Network line 2 evaluation d preference 2 2 of dynamic calculations 2 sport routes. admissibility 2 nts using ons and 2 fic accident. nciples of 2 al systems.
17Y2SJ Timetable sample circulation planning 17Y2SK Factors influencing accenting integrate 18XN1 18XN2 18Y2D2 Analysis of forces i models of vehicles 18Y2DC Basic theory and ca Vibration of system 18Y2MP Basic mathemati variational prind 18Y2UB Anatomy of man. M Injuries in road t 18Y2VC Principle of virtual Elastic, 20STL	Retwork Timetabiling of the Kaliway retraining on the Kaliway retraining the results in allway operation. Rules and regulations of train paths, running times, time adds and relations and waiting times, timetables for lines under construction. Urban and Regional Rail Transport System or training of the results in allway relations and waiting times, timetables for lines under construction. Urban and Regional Rail Transport System or public transport demand, modal-split, traffic flows distribution on public transit network. Line network optimization and configuration. Timet deriodic timetable. Rolling stock circulation, staff and crew services optimization and their order to rosters. Framework legislation, nor of public transport. Marketing. Master Project 1 Master Project 2 Dynamics of Transport Routes and Vehicles 2 n the vehicle and transport routes and their influence on the stress and strain components of the vehicle structure or behavior of traff and transport routes. Vibration of systems with a finite number of degrees of freedom. Methods of constant stiffness and constant con of structural systems. Criteria for the admissibility of oscillation. Dynamics of Transport Routes and Vehicles alculations of more mass systems. Analysis of the forces acting between the vehicle and transport route. Creation of dynamic models o s with a finite number of degrees of freedom. Methods of ndynamics. Finite Element Method And Its Application isoparametric representation. Numerical integration. Introduction to dynamics. FEM programming. Accident Biomechanics and Safety ethods of Medical Diagnostics - RTG, CT, MRI, US. Dynamics of trammatic events. Factors influencing the severity of an accident and raffic. Pedestrian injuries. Injury in railway and air traffic accidents. Analysis of biomechanical events in accidents and their computati treatment and rehabilitation. Protective elements and safety measures in trans	KZ d supplements. Rol d freight transport. It KZ able designing and abler designing and abler designing and barrier effects and Z KZ fic routes. Creation npliance. Dynamic KZ for the basic eleme atural shape function KZ the extent of a traff conal modeling. Priring KZ so of transportation ISYS on instances. Z,ZK	2 ling stock Network line 2 evaluation d preference 2 2 of dynamic calculations 2 sport routes. admissibility 2 nts using ons and 2 fic accident. nciples of 2 al systems. 4
17Y2SJ Timetable sample circulation planning 17Y2SK Factors influencing accenting integrate 18XN1 18XN2 18Y2D2 Analysis of forces i models of vehicles 18Y2DC Basic theory and ca Vibration of system 18Y2MP Basic mathemat variational prind 18Y2UB Anatomy of man. M Injuries in road t 18Y2VC Principle of virtual Elastic, 20STL Basic topics: GPS	Be: Capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds and Rules of train-diagramm creating. Timetables for more service-levels on the line. Construction slot conflicts between passenger- and relations and waiting times, timetables for lines under construction. Urban and Regional Rail Transport System transport demand, modal-split, traffic flows distribution on public transit network. Line network optimization and configuration. Timet depriodic timetable. Rolling stock circulation, staff and crew services optimization and their order to rosters. Framework legislation, nor of public transport. Marketing. Master Project 1 Master Project 2 Dynamics of Transport Routes and Vehicles 2 n the vehicle and transport routes and their influence on the stress and strain components of the vehicle structure or behavior of traff and transport routes. Vibration of systems with a finite number of degrees of freedom. Methods of constant stiffness and constant con of structural systems. Criteria for the admissibility of oscillation. Dynamics of Transport Routes and Vehicles alculations of more mass systems. Analysis of the forces acting between the vehicle and transport route. Creation of dynamic models o s with a finite number of degrees of freedom. Methods of stiffness constants and pliability constants. Fundamentals of vibration of bridg of oscillation. Experimental methods in dynamics. Finite Element Method. Direct Stiffness Method used in structural mechanics. Evaluation of stiffness matrices f ipples. Element formulation (bar and beam elements, CST, LST, quadrilateral, tetrahedral and brick elements). Natural coordinates, n isoparametric representation. Numerical integration. Introduction to dynamics. FEM programming. Accident Biomechanics and Safety tethods of Medical Diagnostics - RTG, CT, MRI, US. Dynamics of traumatic events. Fact	KZ d supplements. Rol d freight transport. No KZ able designing and abler designing and abler designing and abler designing and barrier effects and Z KZ fic routes. Creation npliance. Dynamic KZ for the basic eleme atural shape function KZ the extent of a traff onal modeling. Prir KZ cs of transportation ISYS on instances. Z,ZK ul tool for solving p	2 ling stock Network line 2 evaluation d preference 2 2 of dynamic calculations 2 of dynamic calculations 2 sport routes. admissibility 2 nts using ons and 2 fic accident. nciples of 2 al systems. 4 roblems in
17Y2SJ Timetable sample circulation planning 17Y2SK Factors influencing accenting integrate 18XN1 18XN2 18Y2D2 Analysis of forces i models of vehicles 18Y2DC Basic theory and ca Vibration of system 18Y2MP Basic mathemati variational prind 18Y2UB Anatomy of man. M Injuries in road t 18Y2VC Principle of virtual Elastic, 20STL Basic topics: GPS logistics, appropria	Be: Capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds and Rules of train-diagramm creating. Timetables for more service-levels on the line. Construction slot conflicts between passenger- and relations and waiting times, timetables for lines under construction. Urban and Regional Rail Transport System transport demand, modal-split, traffic flows distribution on public transport. Marketing. Master Project 1 Master Project 1 Master Project 2 Dynamics of Transport Routes and Vehicles 2 n the vehicle and transport routes and their influence on the stress and strain components of the vehicle structure or behavior of traffic and transport Routes and Vehicles 2 Dynamics of Transport Routes and Vehicles and constant con of structural systems. Criteria for the admissibility of oscillation. Dynamics of structural systems. Criteria for the vehicle and transport route. Vibration of systems with a finite number of degrees of freedom. Methods of constant stiffness and constant con of oscillation. Experimental methods in dynamics. Finite Element Method. Direct Stiffness matrices I dynamics. Finite Element Method. And Its Application isoparametric representation. Numerical integration. Introduction to dynamics. FEM programming. Accident Biomechanics and Safety ethods of Medical Diagnostics - RTG, CT, MRI, US. Dynamics of transport transport and Safety ethods of Medical Diagnostics - RTG, CT, MRI, US. Dynamics of transport and Safety ethods of Medical Diagnostics - RTG, CT, MRI, US. Dynamics of transport and Safety ethods of viscolastic material. FEM in problems of biomechanics and Safety additional principles in FEM. Bar shaped, planar and three - dimensional structures in FEM. FEM in statics and in dynamic leastoplastic and viscoleastic material. FEM in problems of biomechanics and Logistics and Galileo navigation systems and their use fo	KZ d supplements. Rold d freight transport. No KZ able designing and n-barrier effects and Description KZ fic routes. Creation npliance. Dynamic KZ f vehicles and transition pes. Criteria for the astic eleme atural shape function KZ the extent of a trafforal modeling. Print KZ cs of transportation ISYS on instances Z,ZK ul tool for solving p tellite as the carrier	2 ling stock Network line 2 evaluation d preference 2 2 of dynamic calculations 2 of dynamic calculations 1 of dynamic calculations 1 of dynamic calculation 2 of dynamic calculation 1 of dynamic calculation 1 of dynamic calculation 1 of dynamic calculation 1 of dynamic 1 of dyn
17Y2SJ Timetable sample circulation planning 17Y2SK Factors influencing accenting integrate 18XN1 18XN2 18Y2D2 Analysis of forces i models of vehicles 18Y2DC Basic theory and ca Vibration of system 18Y2MP Basic mathemati variational prind 18Y2UB Anatomy of man. M Injuries in road t 18Y2VC Principle of virtual Elastic, 20STL Basic topics: GPS logistics, appropria	Bes Capacity allocation, technological intervals in railway operation. Rules and regulations of train paths, running times, time adds and a rules and regulations of train paths, running times, time adds and relations and waiting times, timetables for lines under construction. Urban and Regional Rail Transport System transport demand, modal-split, traffic flows distribution on public transit network. Line network optimization and configuration. Timet depriodic timetable. Rolling stock circulation, staff and crew services optimization and their order to rosters. Framework legislation, nor of public transport. Marketing. Master Project 1 Master Project 1 Master Project 2 Dynamics of Transport Routes and Vehicles 2 n the vehicle and transport routes and their influence on the stress and strain components of the vehicle structure or behavior of traff and transport routes. Vibration of systems with a finite number of degrees of freedom. Methods of constant stiffness and constant con of structural systems. Criteria for the admissibility of oscillation. Dynamics of Transport Routes and Vehicles aculation of structural systems. Criteria for the admissibility of oscillation. Dynamics of Transport Routes and Vehicles aculation. Experimental methods in dynamics. Finite Element Method And Its Application isoparametric representation. Numerical integration. Introduction to dynamics. Accident Biomechanics and Safety ethods of Medical Diagnostics - RTG, CT, MRI, US. Dynamics of transport factors and safety measures in rainsport. Computational Methods of transport. Biomechanics endersion computational methods in framsport. Computational Methods of transport and safety measures in transport. Computational Methods of transport and safety measures in transport. Computational Methods of transport and safety measures in transport. Computational Metchanics in Transportation work and variational principles in FEM. Bar s	KZ d supplements. Rold d freight transport. It KZ able designing and n-barrier effects and Z KZ fic routes. Creation npliance. Dynamic KZ f vehicles and transition pes. Criteria for the astic eleme atural shape function KZ the extent of a trafforal modeling. Print KZ so of transportation ISYS on instances. Z,ZK ul tool for solving p tellite as the carrier	2 ling stock Network line 2 evaluation d preference 2 2 of dynamic calculations 2 sport routes. admissibility 2 nts using ons and 2 fic accident. nciples of 2 al systems. 4 roblems in of satellite

00//NO	Master Droiset 2	7	2		
20XN2	Master Project 2	Ζ	2		
20Y2PR	Prediction of time series	KZ	2		
Introduction to time	series prediction, meaning of prediction, basics of quantitative prediction. Methods for predictive quality evaluation, descriptive statist	ics, MAE, MAPE, F	RMSE, naive		
prediction, predict	tion for general formula of loss function. Calculation and programming environment R. Regression models, basics of linear regressio	n, simple regressio	on. Multiple		
	regression, statistical tests of linear dependence, selection of input variables.				
21XN1	Master Project 1	Z	2		
21XN2	Master Project 2	Z	2		
21Y2LS	Air Traffic Services	KZ	2		
Airspace structure	n Czech Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, APF	a ACC control. Hi	istory of ATS		
	at USA and Czechoslovakia. ATS - Model of financing. Training Systém of Air Traffic Controllers. Future development of AT	S.			
21Y2MK	Marketing of Air Transport	KZ	2		
The content of the	course "Marketing in air transport" is the management of activities and processes using available marketing tools and processes for	analysis, strategy o	development		
and implementation	n of sales of goods and services in the aviation industry. In addition to the theoretical foundations of marketing, the lectures present s	systems of market,	, competition		
	and product analysis, creation of marketing strategies and planning.				
21Y2PP	Law and Operation in Air Transport	KZ	2		
Development of av	ation law. International conventions on civil aviation. International organisations and including of the Czech Republic in these organis	sations. EU legisla	tion and civil		
aviation. Executi	on of state administration and state supervision in matters of civil aviation, in accordance with Act No. 49/1997 Col. Facilitation. Resp	onsibilities of air c	arriers for		
	passengers, luggage and cargo. The safe transport of dangerous goods.				
22XN1	Master Project 1	Z	2		
22XN2	Master Project 2	Z	2		
22Y2PS	Traffic Accidents Computer Simulation and Analysis	KZ	2		
Vehicle dynamics	simulation, multi body systems and vehicle active safety systems, vehicle slipping, external influence on virtual model, crash tests ev	valuation, single-tra	ack vehicle,		
	vehicle passangers, pedestrian, traffic accident simulation and analysis.				
23XN1	Master Project 1	Z	2		
23XN2	Master Project 2	Z	2		
23Y2VR	Cope with Risks in Engineering Branches	KZ	2		
Types of engineerin	ig branches directed to risks, procedures used in risk engineering, ensuring the secured systems, ensuring the safe systems, ensurin	g the safe systems	s of systems.		
23Y2VZ	Leadership and Human Resource Development	KZ	2		
Introduction to the study of human resources, human resources management, corporate goals, strategies, cultural and ethical aspects. Team management, communication in teams,					
	strategy and planning in human resources, ethics and corporate culture, cross-cultural differences. The labor code. Introduction into	protocols.			

For updated information see <u>http://bilakniha.cvut.cz/en/FF.html</u> Generated: day 2023-12-08, time 18:10.