

Study plan

Name of study plan: ME nav.komb.11/12

Faculty/Institute/Others:

Department:

Branch of study guaranteed by the department: Welcome page

Garantor of the study branch: prof. Ing. Tomáš Zelinka, CSc.

Program of study: Technology in Transportation and Telecommunications

Type of study: Follow-up master combined

Required credits: 120

Elective courses credits: 0

Sum of credits in the plan: 120

Note on the plan:

Name of the block: Compulsory courses

Minimal number of credits of the block: 103

The role of the block: Z

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

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

Requirement credits in the group: In this group you have to gain 28 credits

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

Credits in the group: 28

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
12DZP	Transport and Environment Kristýna Neubergová	Z	2	2P+0C	Z	z
13EVS	Economics of the Public Sector	KZ	2	2+0	Z	z
13IEK	Engineering Economics	Z,ZK	7	12		z
15J2A1	Language - English 1 Eva Řezlerová, Dana Boušová, Jitka He manová, Marie Michlová, Lenka Monková, Markéta Olehlová, Markéta Vojanová, Peter Morpuss, Barbora Horáková	Z	2	0P+2C+10B	Z	z
17LOGK	Logistics Chains	Z,ZK	7	12		z
17PREP	Carrying Processes	KZ	2	2+0	Z	z
17TSI	Technology of Road Transport Vít Janoš, Zdeněk k Michl, Michal Drábek	KZ	2	2P+0C+8B	Z	z
17TZE	Technology of Railway Transport Vít Janoš, Zdeněk k Michl, Petr Fridrišek, Rudolf Vávra	ZK	2	2P+0C	Z	z
11TER	Game Theory and Optimal Decision-Making Magdalena Hykšová Magdalena Hykšová (Gar.)	ZK	2	2P+0C+8B	Z	z

Characteristics of the courses of this group of Study Plan: Code=1.S.NKME 11/12 Name=1.sem.nav.komb.ME od 11/12

12DZP	Transport and Environment	Z	2	This course aims the impact of transport on environment. The accent is put mainly on noise and vibration, emission, barrier effect and energy demands. The noise measury is part and parcel of this course.		
13EVS	Economics of the Public Sector	KZ	2	Economic and financial theory of public sector, public choice theory, externalities, decisions about public finance allocation, economic assesment of public projects (CBA, MCA), tax system of the R (direct and indirect taxes, Laffer curve), state budget, management of public projects a their economic efficiency assesment, way of elaboration of PPP projects, funding from EU funds.		
13IEK	Engineering Economics	Z,ZK	7	Wear and tear, lifetime and their calculation, depretiation methods. Inventory and its optimization. Cost analysis and costing, problems of revenue and profit of business activities. Financial sources and financial management, diagnostics of economic activity. Structure of business plan, mathematical tools for assesment of projects and risks of an engineering work, choice of optimal solution.		
15J2A1	Language - English 1	Z	2	Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, feedback skills, summarising technical text content, structuring presentations and meeting minutes, elementary rhetorics of English and practical application, formal and technical registers and their use, language of management.		
17LOGK	Logistics Chains	Z,ZK	7			

17PREP	Carrying Processes	KZ	2
Carrying traffic in transport. European right of access and transit in terms of commercial liability of operator. Ordering and contracting of carrying services. Intergovernmental conventions on international carriage. Passenger carriage. Freight carriage. Forwarding. Rights, duties and liabilities based on carriage contract. Intermodal carriage.			
17TSI	Technology of Road Transport	KZ	2
Legislative, operational, technical, logistic and safety conditions of road transport, basic transport technologies, special transport, international agreements, requirements on the parameters and specialization of transport, handling and loading/unloading means, maintenance, service and repairs of road vehicles, safety of road transport and choice of optimal transport unit.			
17TZE	Technology of Railway Transport	ZK	2
Track line capacity assesment, model operational situation with a system running time between IPT-nodes, calculation of traction energy savings compared with infrastructure costs for designing of fleeting crossing station, solving of capacity problem and blocking time in relation to train protection system, robustness of timetable, system concept of freight train paths, guidelines for centralised operational traffic control and management.			
11TER	Game Theory and Optimal Decision-Making	ZK	2
Decision-making theory, utility theory. Explicit form games, backward induction. Normal form games. Antagonistic conflict, matrix games. Repeated games, evolutionary game theory. Cooperative games without transferable payoffs. Cooperative games with transferable payoffs (imputation, core, Shapley value, nucleolus). Applications of game theory above all in economics and transportation.			

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

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

Requirement credits in the group: In this group you have to gain 22 credits

Requirement courses in the group: In this group you have to complete 8 courses

Credits in the group: 22

Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
15JBA2	Language - English 2	Z	2	0P+2C+10B	L	Z
17KMD	Quantitative Methods in Transport	Z,ZK	6	2P+2C	L	Z
13MGD	Management of Transportation Systems	Z,ZK	3	2+1	L	Z
14MTSY	Telecommunications Systems Management	KZ	2	2+0	L	Z
13SMK	Strategic Marketing	Z	2	2+0	L	Z
20SYDO	System Transport Strategy	KZ	3	2+1	L	Z
18TAM	Theoretical and Applied Mechanics	ZK	2	2P+0C	L	Z
11THRO	Queuing Theory	ZK	2	2P+0C+8B	L	Z

Characteristics of the courses of this group of Study Plan: Code=2.S.NKME 11/12 Name=2.sem.nav.komb.ME od 11/12

15JBA2	Language - English 2	Z	2
Grammatical structures and style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, feedback skills, summarising technical text content, structuring presentations and meeting minutes, elementary rhetorics of English and practical application, formal and technical registers and their use, language of management.			
17KMD	Quantitative Methods in Transport	Z,ZK	6
The course focuses on the issue of the use of undirected graphs tree type, planar graphs and their coloring. Further distribution problems, facility location problems are formulated and solved such as models of integer linear programming. Besides the use of exact methods there are described simple and also more sophisticated heuristics (metaheuristics) methods.			
13MGD	Management of Transportation Systems	Z,ZK	3
Manager and his team, choice of team members, teamwork, leadership, training of communication and presentation skills of modern, operative and strategic planning and decision making, conflicts, motivation, decision support methods, organizing, organization structures, organization welfare, control, project management (focused on PPP), decision support systems in transportation (Highway Development and Management Tools).			
14MTSY	Telecommunications Systems Management	KZ	2
New trends in the area of e-communication services and relevant ecommunications networks, conditions and tools to provide optional set of services of required parameters based on hierarchal architecture of service management system (TMN). Positioning of broadband services, convergence trends leading to NGN. Financial criteria and tools as an integral part of providing service.			
13SMK	Strategic Marketing	Z	2
Marketing strategy, marketing mix tools, marketing consumer research, quantitative and qualitative research, information analysis, marketing communication, communication strategy, segmentation, placement, marketingového plan elaboration.			
20SYDO	System Transport Strategy	KZ	3
Compleat overview of system sciences, system approach to information engineering, definition of system strategy, connections with scientific methodological base pf transportation; porccesses of strategical thinkig, system of strategical management, application space of strategies with link to sustainable development, tools for mastering of strategies with support of geoinformatical enegineer technologies.			
18TAM	Theoretical and Applied Mechanics	ZK	2
Fundamentals of theory of plasticity. Plasticity conditions. Elastoplastic and plastic state of body. Reliability and durability of structures. The stress and strain state around the notch. Stress intensity factor. Fracture toughness. Energy methods of linear fracture mechanics. Crack driving force. Opening the crack. Fatigue properties of the material. Fatigue process. Dimensioning of fatigue.			
11THRO	Queuing Theory	ZK	2
Discrete event process, definition, random distribution, and probability. Basic processes, process of revitalisation. Markov process, Markov models, Kendall classification, model M/M/1, models M/M/n. Non-markovian models, model M/C/n, models G/G/n. Models with continuous flow. Service net, examples of Petri net. Computer simulation.			

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

Name of the group: 3.sem.nav.komb.ME 12/13

Requirement credits in the group: In this group you have to gain 25 credits

Requirement courses in the group: In this group you have to complete 7 courses

Credits in the group: 25

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
15DPS	Transportation Psychology	Z	2	2+0	Z	z
13EEG	Economic of Transportation Energetic	KZ	3	2+0	Z	z
13EDO	Economics of Transport	Z,ZK	6	2+2	Z	z
15JBA3	Language - English 3 Eva Rezlerová, Dana Boušová, Jitka He manová, Marie Michlová, Lenka Monková, Markéta Olehlová, Markéta Vojanová, Peter Morpuss, Barbora Horáková	Z	2	0P+2C+10B	Z	z
14PPRP	Computer Aided Project Management Marek Kalika	KZ	2	0P+2C	L	z
17PMD	Project Management in Transportation	Z,ZK	6	3+1	Z	z
11STS	Stochastic Systems Šárka Jozová, Ivan Nagy, Evžen Uglíckich, Pavla Pecherková Evžen Uglíckich (Gar.)	Z,ZK	4	2P+2C+14B	Z	z

Characteristics of the courses of this group of Study Plan: Code=3.S.NKME 12/13 Name=3.sem.nav.komb.ME 12/13

15DPS	Transportation Psychology	Z	2	Subject of psychology and its basic concepts. Information intake, decision-making and behaviour. Performance. Engineering psychology and vehicle construction. Psychological aspects of travel route and traffic conditions, accidents and traffic incidents. Selection and training of the staff. Work and leisure. Age as a factor in transport operation.		
13EEG	Economic of Transportation Energetic	KZ	3	Propulsion, energetic and storage systems of vehicles, energy sources, traction-energetic properties, laws of vehicle motion, determination of energy consumption in given conditions, assessment of energetic requirements, traction-energetic concepts, technical, economic and social aspects, energetic rationalization, complex assessment of traction energetic conceptions. Energetics of high speed railways.		
13EDO	Economics of Transport	Z,ZK	6	Transport in the CR in the European and world context, transport funding in the CR, specifics of costing, legislation, functional efficiency of transport system, technical - economic characteristics of transport modes - forwarding ability, forwarding speed, economics of transport enterprise (microeconomics) - indicators according to modes of transport, economic approach.		
15JBA3	Language - English 3	Z	2	Grammatical structures and style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, feedback skills, summarising technical text content, structuring presentations and meeting minutes, elementary rhetorics of English and practical application, formal and technical registers and their use, language of management.		
14PPRP	Computer Aided Project Management	KZ	2	What is the project? The basic terms a concepts of project management. Life cycle of the project and its phased approach. Analysis and specification of the assignment, activity definition, stages, objectives and measurability. Risk events and risk planning. Project change management during implementation. Preparation of the project outline (activities, restrictions, assignments, calendars etc.) Project planning and optimization - time, resources.		
17PMD	Project Management in Transportation	Z,ZK	6	Projects and project management, content and project leading, project process organization. Assessment criteria decision, technical and economical criteria. Criteria function and fulfillment of its components. Spatial development and decision making, building act. Financial instruments in project management, funding models, payment instruments. Spatial plans, EIA, selection proces, public commision.		
11STS	Stochastic Systems	Z,ZK	4	The subject deals with the problems of mathematical modelling of dynamical systems, estimation od these models and their utilization for prediction. The results are illustrated on practical transportation tasks. Mathematical theory roots from probability and mathematical statistics and they use the methods of the Bayesian probabilistic approach.		

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

Name of the group: 4.sem.nav.komb. ME 12/13

Requirement credits in the group: In this group you have to gain 2 credits

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

Credits in the group: 2

Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
15JBA4	Language - English 4 Markéta Olehlová, Barbora Horáková	ZK	2	0P+2C+10B	L	z

Characteristics of the courses of this group of Study Plan: Code=4.S.NKME 12/13 Name=4.sem.nav.komb. ME 12/13

15JBA4	Language - English 4	ZK	2	Grammatical structures and style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, feedback skills, summarising technical text content, structuring presentations and meeting minutes, elementary rhetorics of English and practical application, formal and technical registers and their use, language of management.		
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Code of the group: XNDPMEK 12/13

Name of the group: Diplomová práce nav.komb.ME 12/13

Requirement credits in the group: In this group you have to gain 18 credits

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

Credits in the group: 18

Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) <i>Tutors, authors and guarantors (gar.)</i>	Completion	Credits	Scope	Semester	Role
11XNDP	Master Thesis	KZ	18	0+20	L	Z
12XNDP	Master Thesis	KZ	18	0+20	L	Z
13XNDP	Master Thesis	KZ	18	0+20	L	Z
14XNDP	Master Thesis	KZ	18	0+20	L	Z
15XNDP	Master Thesis	KZ	18	0+20	L	Z
23XNDP	Master Thesis	KZ	18	0+20	L	Z
17XNDP	Master Thesis	KZ	18	0+20	L	Z
18XNDP	Master Thesis	KZ	18	0+20	L	Z
20XNDP	Master Thesis	KZ	18	0+20	L	Z
21XNDP	Master Thesis	KZ	18	0+20	L	Z
22XNDP	Master Thesis	KZ	18	0+20	L	Z
16XNDP	Master Thesis	KZ	18	0+20	L	Z

Characteristics of the courses of this group of Study Plan: Code=XNDPMEK 12/13 Name=Diplomová práce nav.komb.ME 12/13

11XNDP	Master Thesis	KZ	18
12XNDP	Master Thesis	KZ	18
13XNDP	Master Thesis	KZ	18
14XNDP	Master Thesis	KZ	18
15XNDP	Master Thesis	KZ	18
23XNDP	Master Thesis	KZ	18
17XNDP	Master Thesis	KZ	18
18XNDP	Master Thesis	KZ	18
20XNDP	Master Thesis	KZ	18
21XNDP	Master Thesis	KZ	18
22XNDP	Master Thesis	KZ	18
16XNDP	Master Thesis	KZ	18

Code of the group: XNSK 12/13

Name of the group: Seminář k DP 4.sem nav. komb. 12/13

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

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

Credits in the group: 8

Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) <i>Tutors, authors and guarantors (gar.)</i>	Completion	Credits	Scope	Semester	Role
11XN4K	Seminar for Diploma Thesis	Z	8	8B	L	Z
12XN4K	Seminar for Diploma Thesis	Z	8	8B	L	Z
13XN4K	Seminar for Diploma Thesis	Z	8	8	L	Z
14XN4K	Seminar for Diploma Thesis	Z	8	8B	L	Z
16XN4K	Seminar for Diploma Thesis	Z	8	8B	L	Z
23XN4K	Seminar for Diploma Thesis	Z	8	8B	L	Z
17XN4K	Seminar for Diploma Thesis	Z	8	8B	L	Z
18XN4K	Seminar for Diploma Thesis	Z	8	8B	L	Z
20XN4K	Seminar for Diploma Thesis	Z	8	8B	L	Z

21XN4K	Seminar for Diploma Thesis	Z	8	8B	L	Z
22XN4K	Seminar for Diploma Thesis	Z	8	8B	L	Z
15XN4K	Seminar for Diploma Thesis	Z	8	8B	L	Z

Characteristics of the courses of this group of Study Plan: Code=XNSK 12/13 Name=Seminá k DP 4.sem nav. komb. 12/13

11XN4K	Seminar for Diploma Thesis	Z	8
12XN4K	Seminar for Diploma Thesis	Z	8
13XN4K	Seminar for Diploma Thesis	Z	8
14XN4K	Seminar for Diploma Thesis	Z	8
16XN4K	Seminar for Diploma Thesis	Z	8
23XN4K	Seminar for Diploma Thesis	Z	8
17XN4K	Seminar for Diploma Thesis	Z	8
18XN4K	Seminar for Diploma Thesis	Z	8
20XN4K	Seminar for Diploma Thesis	Z	8
21XN4K	Seminar for Diploma Thesis	Z	8
22XN4K	Seminar for Diploma Thesis	Z	8
15XN4K	Seminar for Diploma Thesis	Z	8

Name of the block: Compulsory elective courses

Minimal number of credits of the block: 9

The role of the block: PV

Code of the group: W2-N 11/12

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

Requirement credits in the group: In this group you have to gain 9 credits

Requirement courses in the group: In this group you have to complete 3 courses

Credits in the group: 9

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) <i>Tutors, authors and guarantors (gar.)</i>	Completion	Credits	Scope	Semester	Role
17W2BU	Stock Market and Investment Companies	KZ	3	8	L	PV
17W2DT	Taxes and Fees in Transport and Telecommunications	KZ	3	8	L	PV
13W2DT	Taxes and Fees in Transport and Telecommunications	KZ	3	8	L	PV
17W2FM	Financing in Urban Mass Transportation	KZ	3	8B	Z	PV
15W2HS	Road Transport History <i>Zuzana arská</i>	KZ	3	8B	L	PV
13W2IM	Investment and Insurance Mathematics	KZ	3	8	L	PV
17W2KI	Capital Investment in Transportation and Telecommunications	KZ	3	8	L	PV
13W2MC	Management of Travel Services Transportation	KZ	3	8	Z	PV
13W2MV	Management of Transportation Quality	KZ	3	8	L	PV
13W2MZ	Environmental Management	KZ	3	8	Z	PV
15W2MS	Sociology for Managers	KZ	3	8B	Z	PV
13W2NU	Cost and Benefits of Transport Systems	KZ	3	8	L	PV
15W2OZ	Health Protection in Transportation and EU <i>Eva Rezlerová, Petr Musil</i>	KZ	3	8B	Z	PV
17W2P	Insurance Bussiness	KZ	3	8	L	PV
15W2PT	Food in Transportation <i>Petr Musil</i>	KZ	3	8B	L	PV
17W2PR	Carriage Processes	KZ	3	8	Z	PV
13W2PS	Case Studies in Transportation	KZ	3	8	Z	PV
17W2PS	Case Studies in Transportation	KZ	3	8B	Z	PV
17W2RS	Regional Transport - Mobility of Small Towns	KZ	3	8	Z	PV
15W2SR	Stylistics and Rhetorics	KZ	3	8B	Z	PV
17W2SK	Urban and Regional Rail Transit Systems <i>Ji í Pospíšil</i>	KZ	3	8B	L	PV
15W2TS	Technician and Contemporary Society <i>Jan Feit</i>	KZ	3	8B	L	PV

17W2RZ	Control of Transport Processes	KZ	3	8B	Z	PV
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Characteristics of the courses of this group of Study Plan: Code=W2-N 11/12 Name=PVP nav.komb. od 11/12

17W2BU	Stock Market and Investment Companies	KZ	3			
The course will teach the students to understand the financial and capital markets, especially the financial system, market determination of discount rates, money-market analysis and valuation of securities. Investor liquidity. Investment companies, its types, management and performance measuring of a portfolio, agiotage and arbitrage. The investment instruments, volatility and risks.						
17W2DT	Taxes and Fees in Transport and Telecommunications	KZ	3			
System of taxes and fees of the Czech Republic, comparison with customs in the EU. Purpose and kinds of taxes, fundamental terms and tax categories. National budget, duties, state, local and court fees. Historic development of rates of taxation of natural individual, legal entity, VAT, consumption tax.						
13W2DT	Taxes and Fees in Transport and Telecommunications	KZ	3			
System of taxes and fees of the Czech Republic, comparison with customs in the EU. Purpose and kinds of taxes, fundamental terms and tax categories. National budget, duties, state, local and court fees. Historic development of rates of taxation of natural individual, legal entity, VAT, consumption tax.						
17W2FM	Financing in Urban Mass Transportation	KZ	3			
UMT history and development in Prague and other cities in the world. Building and operation of public tram, bus, and trolleybus networks. Underground building and operation. Other UMT types. UMT development in small towns. Particularities of investment and operation financing of individual UMT types. Historic and present models of UMT financing. Transport inspection and blind passengers. Tourism & UMT. UMT typology & choice of optimum financing.						
15W2HS	Road Transport History	KZ	3			
Roads and road traffic in the Ancient Age, corridors of main medieval pathways. Development of road traffic in the modern period, acceleration of road transport development during 1st part of 20th century. Development of road layout, geometric and construction layers. Beginning of modern road civil engineering. Development of road travelling in modern period. History of road intercections, bridges and traffic control, development of road signs.						
13W2IM	Investment and Insurance Mathematics	KZ	3			
Interest rata nominal, efficient and real. Annuity, cash flow, present and future value. Debt amortization. Investment assessment. Security pricing. Basic notions and principles of insurance. Casualty insurance - risks, tariff groups, drivers, premium. Basics of demography, life tables, commutation functions. Capital life insurance, endowment, whole life. Annuity insurance. Current premium, gross premium, premium reserves.						
17W2KI	Capital Investment in Transportation and Telecommunications	KZ	3			
Financial market, investment desicion making - long term goals and investment strategies, long temr financing.						
13W2MC	Management of Travel Services Transportation	KZ	3			
Global importance of the tourist trade, transport services, accomodation services, catering services, guide sevice, spa services, organization and services of travel agencies, marketing and specifics of services in the tourist trade.						
13W2MV	Management of Transportation Quality	KZ	3			
Quality management, standards and quality standardization, quality management systems, quality managementin transport and logistics, marketing and transport quality, quality costs, quality measurement and monitoring, statistics in quality management, improving, focus on the customer.						
13W2MZ	Environmental Management	KZ	3			
Delimitation of basic concepts (difference between the environment and ecology, ecosystems, sustatinable development). Main ways of environment deterioration with local, regional and global impact. Ways of environment protection, the development of the environmental policy, its strategy and instruments. Voluntary instruments, their importance and classification. Application of the most important voluntary instruments in the practice.						
15W2MS	Sociology for Managers	KZ	3			
Sociological approach to a corporation. Corporation and its organization. Corporation and its running - human role and communication. Corporation, its culture and social system. Human's work position in free market economy. Corporate directorship, work groups, adaptation, strife, different roles and positions in corporation.						
13W2NU	Cost and Benefits of Transport Systems	KZ	3			
Transport systems and their history, externalities and their internalization, public goods, transport funding, assessment of transport constructions and systems by the methods CBA, MCA, CA, transport taxation, influence of transport constructions on public budgets, relation of transport and economic growth, importance of transport in area, spatial economy.						
15W2OZ	Health Protection in Transportation and EU	KZ	3			
Health protection in transportation in CR in the past and present. Conditions before 1989 and after, current legislature, future prospects. Harmonisation of legislation with other EU members. Fundamental principles of health protection and support in selected EU countries.						
17W2P	Insurance Bussiness	KZ	3			
Insurance bussiness - history and progress. Insurance company, insurance - sorts. Risks and damages. Reinsurance company, principle of reinsurance.						
15W2PT	Food in Transportation	KZ	3			
The nutrition policy. Interaction transportation and foodstuffs. The health risks. Hygienic safeguard. The practical examples from the Czech Republic and from the world. The issues of dining cars, work trains and other railroad equipment. Legislation.						
17W2PR	Carriage Processes	KZ	3			
Carrier's commercial liability. Ordering and contracting of carriage. Intergovernmental conventions on international carriage. Contract on passenger carriage. Contract on freight carriage. Forwarding contract. Liability and rights based on carrying contract. Contractual carrying conditions. Guarantee of carrying contract by more operators. Internationally accepted commercial terms (INCOTERMS). Tariff and calculation of prices.						
13W2PS	Case Studies in Transportation	KZ	3			
Definition of basic concepts in transport, traffic impacts on the environment and national economy, problems of energy and transport sustainability from an energy standpoint, the relationship of transport and macroeconomic development, investments in transport, the individual chapters will be presented to students through case studies and subsequent discussions, the lectures using practitioners.						
17W2PS	Case Studies in Transportation	KZ	3			
Simulation expert discussions on the topics - the impact of transport on the environment and the economy, energy, construction of transport infrastructure etc. The students will each lesson presented one current and the real issue, which solutions will have to think of each other. Each of them will be represent another role (public authorities, investors, carrier representative interest groups, residents, etc.).						
17W2RS	Regional Transport - Mobility of Small Towns	KZ	3			
Basic terms, networks of railway and bus lines, alternative forms of regional transport, influence in regional transport in vicinity of big cities, solutions of passenger and freight transport in regions, activities related to regional transport, passenger transport safety in regions.						
15W2SR	Stylistics and Rhetorics	KZ	3			
Basic skills of oral and written expression as a means of human communication. Basic information about speech, articulation, oral and written language. Teaching to speak well-vocal organs, voice training. Language semantics, language syntactic and the pragmatic aspect. Creative thought and its oral and written expression. Practice - cultivating the skills of speech.						

17W2SK	Urban and Regional Rail Transit Systems	KZ	3
Factors influencing transport demand, modal-split, traffic flows distribution on public transit network. Line network optimization and configuration. Timetable 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 and preference of public transport. Marketing.			
15W2TS	Technician and Contemporary Society	KZ	3
Why to take off a hat in a room and open a door for a lady? Are there simple solutions? Science vs belief. Do we need to know or is it enough to turn on a PC? It must be true - it's on the Internet and in newspapers! What are the sights for? Interest in public affairs - a hangover from the past?			
17W2RZ	Control of Transport Processes	KZ	3
Theoretical bases, transport system, decomposition, factors influencing control, quality diagnosis, methods of control, systems for decision making support, risk of decision making, telematics.			

Name of the block: Jazyky

Minimal number of credits of the block: 8

The role of the block: J

Code of the group: JZ-N-11/12

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

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

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

Credits in the group: 8

Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) <i>Tutors, authors and guarantors (gar.)</i>	Completion	Credits	Scope	Semester	Role
15J2F1	Language - French 1 <i>Eva Rezlerová, Irena Veselková</i>	Z	2	CP+2C+10B	Z	J
15JBF2	Language - French 2	Z	2	CP+2C+10B	L	J
15JBF3	Language - French 3 <i>Eva Rezlerová, Irena Veselková</i>	Z	2	CP+2C+10B	Z	J
15JBF4	Language - French 4 <i>Irena Veselková</i>	ZK	2	CP+2C+10B	L	J
15J2N1	Language - German 1 <i>Eva Rezlerová, Jana Štikarová</i>	Z	2	CP+2C+10B	Z	J
15JBN2	Language - German 2	Z	2	CP+2C+10B	L	J
15JBN3	Language - German 3 <i>Eva Rezlerová, Jana Štikarová</i>	Z	2	CP+2C+10B	Z	J
15JBN4	Language - German 4 <i>Eva Rezlerová, Jana Štikarová</i>	ZK	2	CP+2C+10B	L	J
15J2R1	Language - Russian 1 <i>Eva Rezlerová, Marie Michlová</i>	Z	2	CP+2C+10B	Z	J
15JBR2	Language - Russian 2	Z	2	CP+2C+10B	L	J
15JBR3	Language - Russian 3 <i>Eva Rezlerová, Marie Michlová</i>	Z	2	CP+2C+10B	Z	J
15JBR4	Language - Russian 4 <i>Marie Michlová</i>	ZK	2	CP+2C+10B	L	J
15J2S1	Language - Spanish 1 <i>Eva Rezlerová, Nina Hricsina Puškinová</i>	Z	2	CP+2C+10B	Z	J
15JBS2	Language - Spanish 2	Z	2	CP+2C+10B	L	J
15JBS3	Language - Spanish 3 <i>Eva Rezlerová, Nina Hricsina Puškinová</i>	Z	2	CP+2C+10B	Z	J
15JBS4	Language - Spanish 4 <i>Nina Hricsina Puškinová</i>	ZK	2	CP+2C+10B	L	J

Characteristics of the courses of this group of Study Plan: Code=JZ-N-11/12 Name=Jazyk nav.1.- 4.sem. 11/12

15J2F1	Language - French 1	Z	2
Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, feedback skills, summarising technical text content, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and technical registers and their use, language of management.			
15JBF2	Language - French 2	Z	2
Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, feedback skills, summarising technical text content, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and technical registers and their use, language of management.			
15JBF3	Language - French 3	Z	2
Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation.			

15JBF4	Language - French 4	ZK	2
Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation.			
15J2N1	Language - German 1	Z	2
Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, feedback skills, summarising technical text content, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and technical registers and their use, language of management.			
15JBN2	Language - German 2	Z	2
Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, feedback skills, summarising technical text content, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and technical registers and their use, language of management.			
15JBN3	Language - German 3	Z	2
Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation.			
15JBN4	Language - German 4	ZK	2
Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation.			
15J2R1	Language - Russian 1	Z	2
Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, feedback skills, summarising technical text content, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and technical registers and their use, language of management.			
15JBR2	Language - Russian 2	Z	2
Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, feedback skills, summarising technical text content, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and technical registers and their use, language of management.			
15JBR3	Language - Russian 3	Z	2
Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation.			
15JBR4	Language - Russian 4	ZK	2
Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation.			
15J2S1	Language - Spanish 1	Z	2
Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, feedback skills, summarising technical text content, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and technical registers and their use, language of management.			
15JBS2	Language - Spanish 2	Z	2
Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, feedback skills, summarising technical text content, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and technical registers and their use, language of management.			
15JBS3	Language - Spanish 3	Z	2
Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation.			
15JBS4	Language - Spanish 4	ZK	2
Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation.			

List of courses of this pass:

Code	Name of the course	Completion	Credits
11STS	Stochastic Systems	Z,ZK	4
The subject deals with the problems of mathematical modelling of dynamical systems, estimation of these models and their utilization for prediction. The results are illustrated on practical transportation tasks. Mathematical theory roots from probability and mathematical statistics and they use the methods of the Bayesian probabilistic approach.			
11TER	Game Theory and Optimal Decision-Making	ZK	2
Decision-making theory, utility theory. Explicit form games, backward induction. Normal form games. Antagonistic conflict, matrix games. Repeated games, evolutionary game theory. Cooperative games without transferable payoffs. Cooperative games with transferable payoffs (imputation, core, Shapley value, nucleolus). Applications of game theory above all in economics and transportation.			
11THRO	Queuing Theory	ZK	2
Discrete event process, definition, random distribution, and probability. Basic processes, process of revitalisation. Markov process, Markov models, Kendall classification, model M/M/1, models M/M/n. Non-markovian models, model M/C/n, models G/G/n. Models with continuous flow. Service net, examples of Petri net. Computer simulation.			
11XN4K	Seminar for Diploma Thesis	Z	8

11XNDP	Master Thesis	KZ	18
12DZP	Transport and Environment	Z	2
This course aims the impact of transport on environment. The accent is put mainly on noise and vibration, emission, barrier effect and energy demands. The noise measury is part and parcel of this course.			
12XN4K	Seminar for Diploma Thesis	Z	8
12XNDP	Master Thesis	KZ	18
13EDO	Economics of Transport	Z,ZK	6
Transport in the CR in the European and world context, transport funding in the CR, specifics of costing, legislation, functional efficiency of transport system, technical - economic characteristics of transport modes - forwarding ability, forwarding speed, economics of transport enterprise (microeconomics) - indicators according to modes of transport, economic approach.			
13EEG	Economic of Transportation Energetic	KZ	3
Propulsion, energetic and storage systems of vehicles, energy sources, traction-energetic properties, laws of vehicle motion, determination of energy consumption in given conditions, assessment of energetic requirements, traction-energetic concepts, technical, economic and social aspects, energetic rationalization, komplexní assessment of traction energetic conceptions. Energetics of high speed railways.			
13EVS	Economics of the Public Sector	KZ	2
Economic and financial theory of public sector, public choice theory, externalities, decisions about public finance allocation, economic assesment of public projects (CBA, MCA), tax system of the R (direct and indirect taxes, Laffer curve), state budget, management of public projects a their economic efficiency assessment, way of elaboration of PPP projects, funding from EU funds.			
13IEK	Engineering Economics	Z,ZK	7
Wear and tear, lifetime and their calculation, depreiation methods. Inventory and its optimization. Cost analysis and costing, problems of revenue and profit of business activities. Financial sources and financial management, diagnostics of economic activity. Structure of business plan, mathematical tools for assessment of projects and risks of an engineering work, choice of optimal solution.			
13MGD	Management of Transportation Systems	Z,ZK	3
Manager and his team, choice of team members, teamwork, leadership, training of communication and presentation skills of modern, operative and strategic planning and decision making, conflicts, motivation, decision support methods, organizing, organization structures, organization welfare, control, project management (focused on PPP), decision support systems in transportation (Highway Development and Management Tools).			
13SMK	Strategic Marketing	Z	2
Marketing strategy, marketing mix tools, marketing consumer research, quantitative and qualitative research, information analysis, marketing communication, communication strategy, segmentation, placement, marketingového plan elaboration.			
13W2DT	Taxes and Fees in Transport and Telecommunications	KZ	3
System of taxes and fees of the Czech Republic, comparison with customs in the EU. Purpose and kinds of taxes, fundamental terms and tax categories. National budget, duties, state, local and court fees. Historic development of rates of taxation of natural individual, legal entity, VAT, consumption tax.			
13W2IM	Investment and Insurance Mathematics	KZ	3
Interest rata nominal, efficient and real. Annuity, cash flow, present and future value. Debt amortization. Investment assessment. Security pricing. Basic notions and principles of insurance. Casualty insurance - risks, tariff groups, drivers, premium. Basics of demography, life tables, commutation functions. Capital life insurance, endowment, whole life. Annuity insurance. Current premium, gross premium, premium reserves.			
13W2MC	Management of Travel Services Transportation	KZ	3
Global importance of the tourist trade, transport services, accomodation services, catering services, guide sevice, spa services, organization and services of travel agencies, marketing and specifics of services in the tourist trade.			
13W2MV	Management of Transportation Quality	KZ	3
Quality management, standards and quality standardization, quality management systems, quality managementin transport and logistics, marketing and transport quality, quality costs, quality measurement and monitoring, statistics in quality management, improving, focus on the customer.			
13W2MZ	Environmental Management	KZ	3
Delimitation of basic concepts (difference between the environment and ecology, ecosystems, sustatinable development). Main ways of environment deterioration with local, regional and global impact. Ways of environment protection, the development of the environmental policy, its strategy and instruments. Voluntary instruments, their importance and classification. Application of the most important voluntary instruments in the practice.			
13W2NU	Cost and Benefits of Transport Systems	KZ	3
Transport systems and their history, externalities and their internalization, public goods, transport funding, assesment of transport constructions and systems by the methods CBA, MCA, CA, transport taxation, influence of transport constructions on public budgets, relation of transport and economic growth, importance of transport in area, spatial economy.			
13W2PS	Case Studies in Transportation	KZ	3
Definition of basic concepts in transport, traffic impacts on the environment and national economy, problems of energy and transport sustainability from an energy standpoint, the relationship of transport and macroeconomic development, investments in transport, the individual chapters will be presented to students through case studies and subsequent discussions, the lectures using practitioners.			
13XN4K	Seminar for Diploma Thesis	Z	8
13XNDP	Master Thesis	KZ	18
14MTSY	Telecommunications Systems Management	KZ	2
New trends in the area of e-communication services and relevant ecommunications networks, conditions and tools to provide optional set of services of required parameters based on hierarchal architecture of service management system (TMN). Positioning of broadband services, convergence trends leading to NGN. Financial criteria and tools as an integral part of providing service.			
14PPRP	Computer Aided Project Management	KZ	2
What is the project? The basic terms a concepts of project management. Life cycle of the project and its phased approach. Analysis and specification of the assignment, activity definition, stages, objectives and measurability. Risk events and risk planning. Project change management during implementation. Preparation of the project outline (activities, restrictions, assignments, calendars etc.) Project planning and optimization - time, resources.			
14XN4K	Seminar for Diploma Thesis	Z	8
14XNDP	Master Thesis	KZ	18
15DPS	Transportation Psychology	Z	2
Subject of psychology and its basic concepts. Information intake, decision-making and behaviour. Performance. Engineering psychology and vehicle construction. Psychological aspects of travel route and traffic conditions, accidents and traffic incidents. Selection and training of the staff. Work and leisure. Age as a factor in transport operation.			

15JBS3	Language - Spanish 3	Z	2
Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation.			
15JBS4	Language - Spanish 4	ZK	2
Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation.			
15W2HS	Road Transport History	KZ	3
Roads and road traffic in the Ancient Age, corridors of main medieval pathways. Development of road traffic in the modern period, acceleration of road transport development during 1st part of 20th century. Development of road layout, geometric and construction layers. Beginning of modern road civil engineering. Development of road travelling in modern period. History of road intercections, bridges and traffic control, development of road signs.			
15W2MS	Sociology for Managers	KZ	3
Sociological approach to a corporation. Corporation and its organization. Corporation and its running - human role and communication. Corporation, its culture and social system. Human's work position in free market economy. Corporate directorship, work groups, adaptation, strife, different roles and positions in corporation.			
15W2OZ	Health Protection in Transportation and EU	KZ	3
Health protection in transportation in CR in the past and present. Conditions before 1989 and after, current legislature, future prospects. Harmonisation of legislation with other EU members. Fundamental principles of health protection and support in selected EU countries.			
15W2PT	Food in Transportation	KZ	3
The nutrition policy. Interaction transportation and foodstuffs. The health risks. Hygienic safeguard. The practical examples from the Czech Republic and from the world. The issues of dining cars, work trains and other railroad equipment. Legislation.			
15W2SR	Stylistics and Rhetorics	KZ	3
Basic skills of oral and written expression as a means of human communication. Basic information about speech, articulation, oral and written language. Teaching to speak well-vocal organs, voice training. Language semantics, language syntactic and the pragmatic aspect. Creative thought and its oral and written expression. Practice - cultivating the skills of speech.			
15W2TS	Technician and Contemporary Society	KZ	3
Why to take off a hat in a room and open a door for a lady? Are there simple solutions? Science vs belief. Do we need to know or is it enough to turn on a PC? It must be true - it's on the Internet and in newspapers! What are the sights for? Interest in public affairs - a hangover from the past?			
15XN4K	Seminar for Diploma Thesis	Z	8
15XNDP	Master Thesis	KZ	18
16XN4K	Seminar for Diploma Thesis	Z	8
16XNDP	Master Thesis	KZ	18
17KMD	Quantitative Methods in Transport	Z,ZK	6
The course focuses on the issue of the use of undirected graphs tree type, planar graphs and their coloring. Further distribution problems, facility location problems are formulated and solved such as models of integer linear programming. Besides the use of exact methods there are described simple and also more sofisticated heuristics (metaheuristics) methods.			
17LOGK	Logistics Chains	Z,ZK	7
17PMD	Project Management in Transportation	Z,ZK	6
Projects and project management, content and project leading, project process organization. Assessment criteria decision, technical and economical criteria. Criteria function and fulfillment of its components. Spatial development and decision making, building act. Financial instruments in project management, funding models, payment instruments. Spatial plans, EIA, selection proces, public commision.			
17PREP	Carrying Processes	KZ	2
Carrying traffic in transport. European right of access and transit in terms of commercial liability of operator. Ordering and contracting of carrying services. Intergovernmental conventions on international carriage. Passenger carriage. Freight carriage. Forwarding. Rights, duties and liabilities based on carriage contract. Intermodal carriage.			
17TSI	Technology of Road Transport	KZ	2
Legislative, operational, technical, logistic and safety conditions of road transport, basic transport technologies, special transport, international agreements, requirements on the parameters and specialization of transport, handling and loading/unloading means, maintenance, service and repairs of road vehicles, safety of road transport and choice of optimal transport unit.			
17TZE	Technology of Railway Transport	ZK	2
Track line capacity assesment, model operational situation with a system running time between IPT-nodes, calculation of traction energy savings compared with infrastructure costs for designing of fleeting crossing station, solving of capacity problem and blocking time in relation to train protection system, robustness of timetable, system concept of freight train paths, guidelines for centralised operational traffic control and management.			
17W2BU	Stock Market and Investment Companies	KZ	3
The course will teach the students to understand the financial and capital markets, especially the financial system, market determination of discount rates, money-market analysis and valuation of securities. Investor liquidity. Investment companies, its types, management and performance measuring of a portfolio, agiotage and arbitrage. The investment instruments, volatility and risks.			
17W2DT	Taxes and Fees in Transport and Telecommunications	KZ	3
System of taxes and fees of the Czech Republic, comparison with customs in the EU. Purpose and kinds of taxes, fundamental terms and tax categories. National budget, duties, state, local and court fees. Historic development of rates of taxation of natural individual, legal entity, VAT, consumption tax.			
17W2FM	Financing in Urban Mass Transportation	KZ	3
UMT history and development in Prague and other cities in the world. Building and operation of public tram, bus, and trolleybus networks. Underground building and operation. Other UMT types. UMT development in small towns. Particularities of investment and operation financing of individual UMT types. Historic and present models of UMT financing. Transport inspection and blind passengers. Tourism & UMT. UMT typology & choice of optimum financing.			
17W2KI	Capital Investment in Transportation and Telecommunications	KZ	3
Financial market, investment desicion making - long term goals and investment strategies, long temr financing.			
17W2P	Insurance Bussiness	KZ	3
Insurance bussiness - history and progress. Insurance company, insurance - sorts. Risks and damages. Reinsurance company, principle of reinsurance.			
17W2PR	Carriage Processes	KZ	3
Carrier's commercial liability. Ordering and contracting of carriage. Intergovernmental conventions on international carriage. Contract on passenger carriage. Contract on freight carriage. Forwarding contract. Liability and rights based on carrying contract. Contractual carrying conditions. Guarantee of carrying contract by more operators. Internationally accepted commercial terms (INCOTERMS). Tariff and calculation of prices.			

17W2PS	Case Studies in Transportation	KZ	3
Simulation expert discussions on the topics - the impact of transport on the environment and the economy, energy, construction of transport infrastructure etc. The students will each lesson presented one current and the real issue, which solutions will have to think of each other. Each of them will be represent another role (public authorities, investors, carrier representative interest groups, residents, etc.).			
17W2RS	Regional Transport - Mobility of Small Towns	KZ	3
Basic terms, networks of railway and bus lines, alternative forms of regional transport, influence in regional transport in vicinity of big cities, solutions of passenger and freight transport in regions, activities related to regional transport, passenger transport safety in regions.			
17W2RZ	Control of Transport Processes	KZ	3
Theoretical bases, transport system, decomposition, factors influencing control, quality diagnosis, methods of control, systems for decision making support, risk of decision making, telematics.			
17W2SK	Urban and Regional Rail Transit Systems	KZ	3
Factors influencing transport demand, modal-split, traffic flows distribution on public transit network. Line network optimization and configuration. Timetable 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 and preference of public transport. Marketing.			
17XN4K	Seminar for Diploma Thesis	Z	8
17XNDP	Master Thesis	KZ	18
18TAM	Theoretical and Applied Mechanics	ZK	2
Fundamentals of theory of plasticity. Plasticity conditions. Elastoplastic and plastic state of body. Reliability and durability of structures. The stress and strain state around the notch. Stress intensity factor. Fracture toughness. Energy methods of linear fracture mechanics. Crack driving force. Opening the crack. Fatigue properties of the material. Fatigue process. Dimensioning of fatigue.			
18XN4K	Seminar for Diploma Thesis	Z	8
18XNDP	Master Thesis	KZ	18
20SYDO	System Transport Strategy	KZ	3
Compleat overview of system sciences, system approach to information engineering, definition of system strategy, connections with scientific methodological base pf transportation; porccoesses of strategical thinkig, system of strategical management, application space of strategies with link to sustainable development, tools for mastering of strategies with support of geoinformatical enegineer technologies.			
20XN4K	Seminar for Diploma Thesis	Z	8
20XNDP	Master Thesis	KZ	18
21XN4K	Seminar for Diploma Thesis	Z	8
21XNDP	Master Thesis	KZ	18
22XN4K	Seminar for Diploma Thesis	Z	8
22XNDP	Master Thesis	KZ	18
23XN4K	Seminar for Diploma Thesis"	Z	8
23XNDP	Master Thesis	KZ	18

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