

Study plan

Name of study plan: KOMBI navaz. mag. studium v 21-22 programu LA

Faculty/Institute/Others:

Department:

Branch of study guaranteed by the department: Welcome page

Garantor of the study branch:

Program of study: Logistics and Transport Processes Control

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: 1S K LA 21-22 P

Name of the group: 1.sem.navaz.mag. KOMBI programu LA 21-22 povinné předměty

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
611LIP2	Linear Programming 2 Pavla Pecherková, Jozef Nagy Pavla Pecherková (Gar.)	Z,ZK	3	2P+1C+10B	Z	z
611TER	Game Theory and Optimal Decision-Making Magdalena Hykšová Magdalena Hykšová (Gar.)	ZK	2	2P+0C+8B	Z	z
617LSC	Logistics in Smart Cities Eliška Glaserová Tomáš Horák (Gar.)	Z,ZK	6	2P+2C+14B	Z	z
617TZNK	Technology of Railway Transport Michal Drábek Vít Janoš (Gar.)	Z,ZK	5	12B	Z	z
617TZOK	Inventory, Replacement and Scheduling Theory Dušan Teichmann Dušan Teichmann (Gar.)	Z,ZK	4	10B	Z	z
614GISS	Geographical Information Systems Zuzana Purkrábková, František Kekula	KZ	2	0P+2C+8B	Z	z
617MADS	Management of Transport Systems Roman Štěrba Roman Štěrba (Gar.)	KZ	2	2P+0C+8B	Z	z
617TSI	Technology of Road Transport Michal Drábek Michal Drábek (Gar.)	KZ	2	2P+0C+8B	Z	z
615J2A1	Language - English 1 Věra Pastorková	Z	2	0P+2C+10B	Z	z

Characteristics of the courses of this group of Study Plan: Code=1S K LA 21-22 P Name=1.sem.navaz.mag. KOMBI programu LA 21-22 povinné předměty

611LIP2	Linear Programming 2	Z,ZK	3
Formulation of the task of integer programming, branch and bound method of numerical solution, problems about knapsack, travelling salesman, sets, location of stores and post boxes, tasks of scheduling, heuristics, metaheuristics - genetic algorithms, ant colony optimization.			
611TER	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.			
617LSC	Logistics in Smart Cities	Z,ZK	6
Development of cities in time, city and region, mobility of city residents and movement of goods, sustainability as a concept, Smart Cities, city as a system and its components, quality of life, individual quality of life, city "smartness" assessment, legislation in Smart Cities, Smart Cities transformation, last mile logistics, e-commerce, new approaches in last mile logistics, last mile logistics in cities and in regions.			
617TZNK	Technology of Railway Transport	Z,ZK	5
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			

617TZOK	Inventory, Replacement and Scheduling Theory Inventory theory - introduction, static models, deterministic dynamic models, stochastic dynamic models Replacement theory - introduction, models for replacement of items that deteriorate with time, models for replacement of items that fail completely Scheduling theory - introduction, single machine scheduling problems, parallel machine scheduling problems, flow shop scheduling problems and job shop scheduling problems	Z,ZK	4
614GISS	Geographical Information Systems Construction of saving format of space-oriented information land-survey and cartography minimum basic tasks of spatial operations principles of territorial identification	KZ	2
617MADS	Management of Transport Systems Functions, processes and systems of management in transport, organisational structures, strategy, social responsibility, soft skills.	KZ	2
617TSI	Technology of Road Transport 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.	KZ	2
615J2A1	Language - English 1 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.	Z	2

Code of the group: 2S K LA 21-22 P

Name of the group: 2.sem.navaz.mag. KOMBI programu LA 21-22 povinné předměty

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 8 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) <i>Tutors, authors and guarantors (gar.)</i>	Completion	Credits	Scope	Semester	Role
611THRO	Queuing Theory <i>Šárka Voráčková Šárka Voráčková (Gar.)</i>	ZK	2	2P+0C+8B	L	z
617KMDK	Quantitative Methods in Transport <i>Dušan Teichmann, Denisa Mocková Denisa Mocková (Gar.)</i>	Z,ZK	7	14B	L	z
617MID	Managerial Information Systems in Transport <i>Václav Baroch Václav Baroch (Gar.)</i>	Z,ZK	3	2P+1C+10B	L	z
617RKOP	Management of commercial projects in transport <i>Alexandra Dvořáčková</i>	Z,ZK	3	2P+1C+10B	L	z
614BIG	Big Data <i>Ondřej Smíšek</i>	KZ	2	0P+2C+8B	L	z
614TEL	Telecommunications <i>Tomáš Zelinka Tomáš Zelinka (Gar.)</i>	KZ	3	2P+1C+10B	L	z
617DOCH	Travel Behavior <i>Milan Kříž Milan Kříž (Gar.)</i>	KZ	3	3P+0C+10B	L	z
615JBA2	Language - English 2 <i>Věra Pastorková, Jan Feit</i>	Z	2	0P+2C+10B	L	z

Characteristics of the courses of this group of Study Plan: Code=2S K LA 21-22 P Name=2.sem.navaz.mag. KOMBI programu LA 21-22 povinné předměty

611THRO	Queuing Theory 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.	ZK	2
617KMDK	Quantitative Methods in Transport 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.	Z,ZK	7
617MID	Managerial Information Systems in Transport IT and their use in building IS of modern transport company. New EU legislation on cyber security and data protection puts transport organizations in front of new challenges. The course focuses on the security of IS and possible sources of danger. The practical part deals with the process of building a new IS from the idea through the timetable and the financial budget, the basic documents for the possible assignment of the contract.	Z,ZK	3
617RKOP	Management of commercial projects in transport Business project (customer, activities, output - quality, time, money), project surroundings, location of the project (area analysis, traffic flows, authorization procedure), organizational structure of the project, sources of financing, customer-supplier relations, feasibility studies, sensitivity and multi-criteria analysis, financial and value analysis, management of project changes.	Z,ZK	3
614BIG	Big Data Principle of MapReduce, Basic Principles of Big Data Management, Comparison and Classification of NoSQL Databases, Key Database Value Database, Column Databases, Document Databases, Graph Databases-Basic Principles, Graph Databases-Advanced Aspects, Indexing, Interpretation, Advanced Principles Big Data Management, NewSQL Database, Cloud computing, Data warehouses and Big Data, Cloud computing, Data warehouses and Big Data, Other Big Data issues	KZ	2
614TEL	Telecommunications Status quo and new trends in telecommunications systems. economical and legal aspects of telecommunications networks design and telecommunications services provisioning, identification and quantification of hierarchical telecommunications networks and telecommunication services performance based on adopted performance parameters, telecommunication services typically applied within transport and specifically logistic solutions.	KZ	3

617DOCH	Travel Behavior	KZ	3
Investigation of causal effects in travel behavior research (quasi-experimental and experimental approaches). Data collection (theory of measurement; design of research instrument and data collection). Analysis and interpretation of data (advanced regression models; issues of analysis and interpretation of results: effect size, practical vs. statistical significance). Analysis and interpr. of data (surveys, choice exp., panel. data).			
615JBA2	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.			

Code of the group: 3S K LA 22-23 P

Name of the group: 3.sem.navaz.mag. KOMBI programu LA 22-23 povinné předměty

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 6 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) <i>Tutors, authors and guarantors (gar.)</i>	Completion	Credits	Scope	Semester	Role
611STS	Stochastic Systems <i>Pavla Pecherková Evženie Uglickich (Gar.)</i>	Z,ZK	4	2P+2C+14B	Z	z
617DOPM	Transportation Planning and Modeling <i>Milan Kříž</i>	Z,ZK	6	2P+2C+14B	Z	z
617PPC	Carriage Processes <i>Roman Štěřba Roman Štěřba (Gar.)</i>	ZK	3	2P+0C+10B	Z	z
617RVIP	Public project management in transport <i>Alexandra Dvořáčková Olga Mertlová (Gar.)</i>	Z,ZK	5	2P+2C+14B	Z	z
617AMAK	Application of marketing tools in transport industry <i>Alexandra Dvořáčková</i>	KZ	2	10B	Z	z
615JBA3	Language - English 3 <i>Věra Pastorková</i>	Z	2	0P+2C+10B	Z	z

Characteristics of the courses of this group of Study Plan: Code=3S K LA 22-23 P Name=3.sem.navaz.mag. KOMBI programu LA 22-23 povinné předměty

611STS	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.			
617DOPM	Transportation Planning and Modeling	Z,ZK	6
Basic steps and tools used within four step model (trip generation, trip distribution, mode choice and trip distribution). Mobility and availability in urban areas, land use. New trends for transportation planning and modelling.			
617PPC	Carriage Processes	ZK	3
Domestic carriages, international carriages, nomenclature of goods, pricing, contracting, responsibility for damages.			
617RVIP	Public project management in transport	Z,ZK	5
Basic concepts of project management in the public sector, used procedures and standards of project management, organizational structure in project management in the public sector, project and pre-project preparation in transport and transport infrastructure and their specifics, feasibility study and CBA, project evaluation.			
617AMAK	Application of marketing tools in transport industry	KZ	2
Strategic marketing plans, Implementation of marketing campaigns, Branding and brand promotion, Multimedia presentations, Direct marketing and related lead generation campaigns			
615JBA3	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.			

Code of the group: 4S K LA 22-23 P

Name of the group: 4.sem.navaz.mag. KOMBI programu LA 22-23 povinný předmět

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) <i>Tutors, authors and guarantors (gar.)</i>	Completion	Credits	Scope	Semester	Role
615JBA4	Language - English 4 <i>Věra Pastorková, Jan Feit</i>	ZK	2	0P+2C+10B	L	z

Characteristics of the courses of this group of Study Plan: Code=4S K LA 22-23 P Name=4.sem.navaz.mag. KOMBI programu LA 22-23 povinný předmět

615JBA4	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.			

Code of the group: DP N LA K 21-22

Name of the group: Diplomová práce nav.mag.programu LA komb.(od) 21/22

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

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

Credits in the group: 18

Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) <i>Tutors, authors and guarantors (gar.)</i>	Completion	Credits	Scope	Semester	Role
611XNDM	Master Thesis for study programme LA	Z	18	OP+20C+70B	L	z
612XNDM	Master Thesis for study programme LA	Z	18	OP+20C+70B	L	z
614XNDM	Master Thesis for study programme LA	Z	18	OP+20C+70B	L	z
615XNDM	Master Thesis for study programme LA	Z	18	OP+20C+70B	L	z
616XNDM	Master Thesis for study programme LA	Z	18	OP+20C+70B	L	z
617XNDM	Master Thesis for study programme LA <i>Tomáš Horák, Dušan Teichmann, Roman Štěrba, Václav Baroch, Daniel Pilát, Jiří Pospíšil</i>	Z	18	OP+20C+70B	L	z
618XNDM	Master Thesis for study programme LA	Z	18	OP+20C+70B	L	z
620XNDM	Master Thesis for study programme LA	Z	18	OP+20C+70B	L	z
621XNDM	Master Thesis for study programme LA	Z	18	OP+20C+70B	L	z
622XNDM	Master Thesis for study programme LA	Z	18	OP+20C+70B	L	z
623XNDM	Master Thesis for study programme LA	Z	18	OP+20C+70B	L	z

Characteristics of the courses of this group of Study Plan: Code=DP N LA K 21-22 Name=Diplomová práce nav.mag.programu LA komb.(od) 21/22

611XNDM	Master Thesis for study programme LA	Z	18
612XNDM	Master Thesis for study programme LA	Z	18
614XNDM	Master Thesis for study programme LA	Z	18
615XNDM	Master Thesis for study programme LA	Z	18
616XNDM	Master Thesis for study programme LA	Z	18
617XNDM	Master Thesis for study programme LA	Z	18
618XNDM	Master Thesis for study programme LA	Z	18
620XNDM	Master Thesis for study programme LA	Z	18
621XNDM	Master Thesis for study programme LA	Z	18
622XNDM	Master Thesis for study programme LA	Z	18
623XNDM	Master Thesis for study programme LA	Z	18

Code of the group: SDP N LA K 21-22

Name of the group: Seminář k dip.práci nav.mag.programu LA komb.(od) 21/22

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
611XN4K	Seminar for Diploma Thesis	Z	8	8B	L	z
612XN4K	Seminar for Diploma Thesis	Z	8	8B	L	z
614XN4K	Seminar for Diploma Thesis	Z	8	8B	L	z
615XN4K	Seminar for Diploma Thesis	Z	8	8B	L	z
616XN4K	Seminar for Diploma Thesis	Z	8	8B	L	z
617XN4K	Seminar for Diploma Thesis <i>Tomáš Horák, Daniel Pilát</i>	Z	8	8B	L	z

618XN4K	Seminar for Diploma Thesis	Z	8	8B	L	z
620XN4K	Seminar for Diploma Thesis	Z	8	8B	L	z
621XN4K	Seminar for Diploma Thesis	Z	8	8B	L	z
622XN4K	Seminar for Diploma Thesis	Z	8	8B	L	z
623XN4K	Seminar for Diploma Thesis	Z	8	8B	L	z

Characteristics of the courses of this group of Study Plan: Code=SDP N LA K 21-22 Name=Seminář k dip.práci nav.mag.programu LA komb.(od) 21/22

611XN4K	Seminar for Diploma Thesis	Z	8
612XN4K	Seminar for Diploma Thesis	Z	8
614XN4K	Seminar for Diploma Thesis	Z	8
615XN4K	Seminar for Diploma Thesis	Z	8
616XN4K	Seminar for Diploma Thesis	Z	8
617XN4K	Seminar for Diploma Thesis	Z	8
618XN4K	Seminar for Diploma Thesis	Z	8
620XN4K	Seminar for Diploma Thesis	Z	8
621XN4K	Seminar for Diploma Thesis	Z	8
622XN4K	Seminar for Diploma Thesis	Z	8
623XN4K	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: PVP NAV K LA 21-22

Name of the group: PVP nav.komb.LA 21-22 (program LA, nikoliv obor LA)

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
617W2AM	Application of Marketing Tools in Transportation	KZ	3	8B	L	PV
621W2CR	CRM	KZ	3	8B	L	PV
617W2FM	Financing in Urban Mass Transportation	KZ	3	8B	Z	PV
621W2FM	Aviation Company Financial Management <i>Radoslav Zozulák</i>	KZ	3	8B	Z	PV
615W2HS	Road Transport History	KZ	3	8B	L	PV
614W2KI	Capital Investment in Transportation and Telecommunications	KZ	3	8B	L	PV
621W2LS	Air Traffic Services	KZ	3	8B	L	PV
615W2MS	Sociology for Managers	KZ	3	8B	Z	PV
621W2MS	Aerospace Engineering Simulation and Modelling	KZ	3	8B	Z	PV
621W2MC	CNS Systems Modelling <i>Stanislav Pleninger</i>	KZ	3	8B	Z	PV
615W2OZ	Health Protection in Transportation and EU <i>Petr Musil</i>	KZ	3	8B	Z	PV
615W2PT	Food in Transportation <i>Petr Musil</i>	KZ	3	8B	L	PV
621W2PP	Law and Operation in Air Transport	KZ	3	8B	L	PV
621W2PL	Operational Aspects of Aerodromes	KZ	3	8B	Z	PV
617W2RZ	Control of Transport Processes	KZ	3	8B	Z	PV
615W2SR	Stylistics and Rhetorics	KZ	3	8B	Z	PV
617W2SK	Urban and Regional Rail Transit Systems	KZ	3	8B	L	PV
615W2TS	Technician and Contemporary Society	KZ	3	8B	L	PV

Characteristics of the courses of this group of Study Plan: Code=PVP NAV K LA 21-22 Name=PVP nav.komb.LA 21-22 (program LA, nikoliv obor LA)

617W2AM	Application of Marketing Tools in Transportation	KZ	3
Application of marketing principles in transport issues, marketing tools suitable for transport, case studies of the use of marketing in the sphere of public passenger transport.			

621W2CR	CRM	KZ	3
Introduction to CRM. Analysis of air accidents. Human factor. Error. Historical development of CRM. Health and fitness. Stress and its effect on the human body. Fatigue Sleep & Vigilance. Information Processing. Situational Awareness. Workload Management. Decision Making. Communication. Leadership & Team Behaviour. Automation.			
617W2FM	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.			
621W2FM	Aviation Company Financial Management	KZ	3
Theories of corporate finance - financial statements, budget, forecast. Financial policy of the company. Financial resources - long-term financial resources, depreciation, retained earnings, shares, bonds, loans, leasing, capital. Financial and economic analysis of the company - structure and content.			
615W2HS	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 intercessions, bridges and traffic control, development of road signs.			
614W2KI	Capital Investment in Transportation and Telecommunications	KZ	3
Financial market, investment desicion making - long term goals and investment strategies, long term financing			
621W2LS	Air Traffic Services	KZ	3
Airspace structure in Czech Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, APP a ACC control. Procedural and radar control. Incidents caused or partially caused by ATS. History of ATS and Czech airspace.			
615W2MS	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.			
621W2MS	Aerospace Engineering Simulation and Modelling	KZ	3
The course is designed as a set of exemplary tasks and problems based on practical aviation issues. The university degree mathematic skills and software applications usage will be necessary for successful figuring out. Both simple tasks, where students create own model themselves (e.g. in Matlab), and more complicated problems where professional developed tools will be applied.			
621W2MC	CNS Systems Modelling	KZ	3
615W2OZ	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.			
615W2PT	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.			
621W2PP	Law and Operation in Air Transport	KZ	3
Development of aviation law. International conventions on civil aviation. International organisations and including of the Czech Republic in these organisations. EU legislation and civil aviation. Execution of state administration and state supervision in matters of civil aviation, in accordance with Act No. 49/1997 Col. Facilitation. Responsibilities of air carriers for passengers, luggage and cargo. The safe transport of dangerous goods.			
621W2PL	Operational Aspects of Aerodromes	KZ	3
Operational aspects of aerodromes. Location of aerodrome and orientation of runways. Requirements for apron. Capacity of airports runways and terminals. Operation under winter conditions. Firefighting units. Protection against unlawful interference. Local transport connection. Environmental protection.			
617W2RZ	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.			
615W2SR	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.			
617W2SK	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.			
615W2TS	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?			

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-LA K (1.-4.SEM)

Name of the group: Jazyky navaz.mag. KOMBI studia (1.- 4.sem.) programu LA

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
615J2F1	Language - French 1	Z	2	OP+2C+10B	Z	J
615J2I1	Language - Italian 1	Z	2	OP+2C+10B	Z	J
615J2N1	Language - German 1 <i>René Skalický</i>	Z	2	OP+2C+10B	Z	J
615J2R1	Language - Russian 1 <i>Vilma Gottwaldová</i>	Z	2	OP+2C+10B	Z	J
615J2S1	Language - Spanish 1	Z	2	OP+2C+10B	Z	J
615JBF2	Language - French 2	Z	2	OP+2C+10B	L	J
615JBI2	Language - Italian 2	Z	2	OP+2C+10B	L	J
615JBN2	Language - German 2 <i>René Skalický, Světlana Petrová</i>	Z	2	OP+2C+10B	L	J
615JBR2	Language - Russian 2 <i>Vilma Gottwaldová, Marie Michlová</i>	Z	2	OP+2C+10B	L	J
615JBS2	Language - Spanish 2	Z	2	OP+2C+10B	L	J
615JBF3	Language - French 3	Z	2	OP+2C+10B	Z	J
615JBI3	Language - Italian 3	Z	2	OP+2C+10B	Z	J
615JBN3	Language - German 3 <i>René Skalický</i>	Z	2	OP+2C+10B	Z	J
615JBR3	Language - Russian 3 <i>Vilma Gottwaldová</i>	Z	2	OP+2C+10B	Z	J
615JBS3	Language - Spanish 3	Z	2	OP+2C+10B	Z	J
615JBF4	Language - French 4	ZK	2	OP+2C+10B	L	J
615JBI4	Language - Italian 4	ZK	2	OP+2C+10B	L	J
615JBN4	Language - German 4 <i>René Skalický, Světlana Petrová, Eva Rezlerová</i>	ZK	2	OP+2C+10B	L	J
615JBR4	Language - Russian 4 <i>Vilma Gottwaldová, Marie Michlová</i>	ZK	2	OP+2C+10B	L	J
615JBS4	Language - Spanish 4	ZK	2	OP+2C+10B	L	J

Characteristics of the courses of this group of Study Plan: Code=JZ-N-LA K (1.-4.SEM) Name=Jazyky navaz.mag. KOMBI studia (1.-4.sem.) programu LA

615J2F1	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.			
615J2I1	Language - Italian 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.			
615J2N1	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.			
615J2R1	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.			
615J2S1	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.			
615JBF2	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.			
615JBI2	Language - Italian 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.			
615JBN2	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.			

615JBR2	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.			
615JBS2	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.			
615JBF3	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.			
615JBI3	Language - Italian 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.			
615JBN3	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.			
615JBR3	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.			
615JBS3	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.			
615JBF4	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.			
615JBI4	Language - Italian 4	ZK	2
Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language 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.			
615JBN4	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.			
615JBR4	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.			
615JBS4	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
611LIP2	Linear Programming 2	Z,ZK	3
Formulation of the task of integer programming, branch and bound method of numerical solution, problems about knapsack, travelling salesman, sets, location of stores and post boxes, tasks of scheduling, heuristics, metaheuristics - genetic algorithms, ant colony optimization.			
611STS	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.			
611TER	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.			
611THRO	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.			
611XN4K	Seminar for Diploma Thesis	Z	8

611XNDM	Master Thesis for study programme LA	Z	18
612XN4K	Seminar for Diploma Thesis	Z	8
612XNDM	Master Thesis for study programme LA	Z	18
614BIG	Big Data	KZ	2
Principle of MapReduce, Basic Principles of Big Data Management, Comparison and Classification of NoSQL Databases, Key Database Value Database, Column Databases, Document Databases, Graph Databases-Basic Principles, Graph Databases-Advanced Aspects, Indexing, Interpretation, Advanced Principles Big Data Management, NewSQL Database, Cloud computing, Data warehouses and Big Data, Cloud computing, Data warehouses and Big Data, Other Big Data issues			
614GISS	Geographical Information Systems	KZ	2
Construction of saving format of space-oriented information land-survey and cartography minimum basic tasks of spatial operations principles of territorial identification			
614TEL	Telecommunications	KZ	3
Status quo and new trends in telecommunications systems. economical and legal aspects of telecommunications networks design and telecommunications services provisioning, identification and quantification of hyerarchical telecommunications networks and telecommunication services performance based on adopted performance parameters, telecommunication services typically applied within transport and specifically logistic solutions.			
614W2KI	Capital Investment in Transportation and Telecommunications	KZ	3
Financial market, investment desicion making - long term goals and investment strategies, long term financing			
614XN4K	Seminar for Diploma Thesis	Z	8
614XNDM	Master Thesis for study programme LA	Z	18
615J2A1	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.			
615J2F1	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.			
615J2I1	Language - Italian 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.			
615J2N1	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.			
615J2R1	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.			
615J2S1	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.			
615JBA2	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.			
615JBA3	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.			
615JBA4	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.			
615JBF2	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.			
615JBF3	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.			
615JBF4	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.			
615JBI2	Language - Italian 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.			

615JBI3	Language - Italian 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.			
615JBI4	Language - Italian 4	ZK	2
Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language 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.			
615JBN2	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.			
615JBN3	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.			
615JBN4	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.			
615JBR2	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.			
615JBR3	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.			
615JBR4	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.			
615JBS2	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.			
615JBS3	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.			
615JBS4	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.			
615W2HS	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.			
615W2MS	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.			
615W2OZ	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.			
615W2PT	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.			
615W2SR	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.			
615W2TS	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?			
615XN4K	Seminar for Diploma Thesis	Z	8
615XNDM	Master Thesis for study programme LA	Z	18
616XN4K	Seminar for Diploma Thesis	Z	8
616XNDM	Master Thesis for study programme LA	Z	18
617AMAK	Aplication of marketing tools in transport industry	KZ	2
Strategic marketing plans, Implementation of marketing campaigns, Branding and brand promotion, Multimedia presentations, Direct marketing and related lead generation campaigns			

617DOCH	Travel Behavior Investigation of causal effects in travel behavior research (quasi-experimental and experimental approaches). Data collection (theory of measurement; design of research instrument and data collection). Analysis and interpretation of data (advanced regression models; issues of analysis and interpretation of results: effect size, practical vs. statistical significance). Analysis and interpr. of data (surveys, choice exp., panel. data).	KZ	3
617DOPM	Transportation Planning and Modeling Basic steps and tools used within four step model (trip generation, trip distribution, mode choice and trip distribution). Mobility and availability in urban areas, land use. New trends for transportation planning and modelling.	Z,ZK	6
617KMDK	Quantitative Methods in Transport 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.	Z,ZK	7
617LSC	Logistics in Smart Cities Development of cities in time, city and region, mobility of city residents and movement of goods, sustainability as a concept, Smart Cities, city as a system and its components, quality of life, individual quality of life, city "smartness" assessment, legislation in Smart Cities, Smart Cities transformation, last mile logistics, e-commerce, new approaches in last mile logistics, last mile logisitics in cities and in regions.	Z,ZK	6
617MADS	Management of Transport Systems Functions, processes and systems of management in transport, organisational structures, strategy, social responsibility, soft skills.	KZ	2
617MID	Managerial Information Systems in Transport IT and their use in building IS of modern transport company. New EU legislation on cyber security and data protection puts transport organizations in front of new challenges. The course focuses on the security of IS and possible sources of danger. The practical part deals with the process of building a new IS from the idea through the timetable and the financial budget, the basic documents for the possible assignment of the contract.	Z,ZK	3
617PPC	Carriage Processes Domestic carriages, international carriages, nomenclature of goods, pricing, contracting, responsibility for damages.	ZK	3
617RKOP	Management of commercial projects in transport Business project (customer, activities, output - quality, time, money), project surroundings, location of the project (area analysis, traffic flows, authorization procedure), organizational structure of the project, sources of financing, customer-supplier relations, feasibility studies, sensitivity and multi-criteria analysis, financial and value analysis, management of project changes.	Z,ZK	3
617RVIP	Public project management in transport Basic concepts of project management in the public sector, used procedures and standards of project management, organizational structure in project management in the public sector, project and pre-project preparation in transport and transport infrastructure and their specifics, feasibility study and CBA, project evaluation.	Z,ZK	5
617TSI	Technology of Road Transport 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.	KZ	2
617TZNK	Technology of Railway Transport 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	Z,ZK	5
617TZOK	Inventory, Replacement and Scheduling Theory Inventory theory - introduction, static models, deterministic dynamic models, stochastic dynamic models Replacement theory - introduction, models for replacement of items that deteriorate with time, models for replacement of items that fail completely Scheduling theory - introduction, single machine scheduling problems, parallel machine scheduling problems, flow shop scheduling problems and job shop scheduling problems	Z,ZK	4
617W2AM	Application of Marketing Tools in Transportation Application of marketing principles in transport issues, marketing tools suitable for transport, case studies of the use of marketing in the sphere of public passenger transport.	KZ	3
617W2FM	Financing in Urban Mass Transportation 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.	KZ	3
617W2RZ	Control of Transport Processes Theoretical bases, transport system, decomposition, factors influencing control, quality diagnosis, methods of control, systems for decision making support, risk of decision making, telematics.	KZ	3
617W2SK	Urban and Regional Rail Transit Systems 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.	KZ	3
617XN4K	Seminar for Diploma Thesis	Z	8
617XNDM	Master Thesis for study programme LA	Z	18
618XN4K	Seminar for Diploma Thesis	Z	8
618XNDM	Master Thesis for study programme LA	Z	18
620XN4K	Seminar for Diploma Thesis	Z	8
620XNDM	Master Thesis for study programme LA	Z	18
621W2CR	CRM Introduction to CRM. Analysis of air accidents. Human factor. Error. Historical development of CRM. Health and fitness. Stress and its effect on the human body. Fatigue Sleep & Vigilance. Information Processing. Situational Awareness. Workload Management. Decision Making. Communication. Leadership & Team Behaviour. Automation.	KZ	3
621W2FM	Aviation Company Financial Management Theories of corporate finance - financial statements, budget, forecast. Financial policy of the company. Financial resources - long-term financial resources, depreciation, retained earnings, shares, bonds, loans, leasing, capital. Financial and economic analysis of the company - structure and content.	KZ	3
621W2LS	Air Traffic Services Airspace structure in Czech Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, APP a ACC control. Procedural and radar control. Incidents caused or partially caused by ATS. History of ATS and Czech airspace.	KZ	3
621W2MC	CNS Systems Modelling	KZ	3

621W2MS	Aerospace Engineering Simulation and Modelling	KZ	3
The course is designed as a set of exemplary tasks and problems based on practical aviation issues. The university degree mathematic skills and software applications usage will be necessary for successful figuring out. Both simple tasks, where students create own model themselves (e.g. in Matlab), and more complicated problems where professional developed tools will be applied.			
621W2PL	Operational Aspects of Aerodromes	KZ	3
Operational aspects of aerodromes. Location of aerodrome and orientation of runways. Requirements for apron. Capacity of airports runways and terminals. Operation under winter conditions. Firefighting units. Protection against unlawful interference. Local transport connection. Environmental protection.			
621W2PP	Law and Operation in Air Transport	KZ	3
Development of aviation law. International conventions on civil aviation. International organisations and including of the Czech Republic in these organisations. EU legislation and civil aviation. Execution of state administration and state supervision in matters of civil aviation, in accordance with Act No. 49/1997 Col. Facilitation. Responsibilities of air carriers for passengers, luggage and cargo. The safe transport of dangerous goods.			
621XN4K	Seminar for Diploma Thesis	Z	8
621XNDM	Master Thesis for study programme LA	Z	18
622XN4K	Seminar for Diploma Thesis	Z	8
622XNDM	Master Thesis for study programme LA	Z	18
623XN4K	Seminar for Diploma Thesis	Z	8
623XNDM	Master Thesis for study programme LA	Z	18

For updated information see <http://bilakniha.cvut.cz/en/FF.html>

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