Study plan

Name of study plan: KOMBI navaz. mag. studium v 18-19 obor LA

Faculty/Institute/Others:
Department:
Branch of study guaranteed by the department: Welcome page
Garantor of the study branch:
Program of study: Technology in Transportation and Telecommunications
Type of study: Follow-up master 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 18-19 P
Name of the group: 1.sem.navaz.mag. KOMBI obor LA 18-19 povinné p edm ty
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
611TER	**Game Theory and Optimal Decision-Making** *Magdalena Hykšová Magdalena Hykšová (Gar.)*	ZK	2	2P+0C+8B	Z	z
617RLOG	**Supply Chains Management**	Z,ZK	5	12B	Z	z
617RZO	**Management of Inventory and Renewal, Schedules in Logistics**	Z,ZK	4	10B	Z	z
617TZDK	**Technology of Railway Transport**	Z,ZK	6	12B	Z	z
611LP2	**Linear Programming 2**	KZ	3	10B	Z	z
614PPRP	**Computer Aided Project Management**	KZ	2	0P+2C+8B	Z	z
617TRI	**Creation and Control of Investment Projects**	KZ	2	6B	Z	z
617TSI	**Technology of Road Transport** *Michal Drábek Michal Drábek (Gar.)*	KZ	2	2P+0C+8B	Z	z
615J2A1	**Language - English 1** *V ra Pastorková*	Z	2	0P+2C+10B	Z	z

Characteristics of the courses of this group of Study Plan: Code=1S K LA 18-19 P Name=1.sem.navaz.mag. KOMBI obor LA 18-19 povinné p edm ty

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.				
617RLOG	Supply Chains Management		Z,ZK	5
Logistics chain. Logistics system. Horizontal and vertical dimensions of logistics integration. Types of logistics chain. Logistics chain with continual flows, with interrupted flows, with synchronous flows. Management based on planning in closed circle with information feedback. Possible position of decoupling point in a logistics chain. Chain effects. Case studies.				
617RZO	Management of Inventory and Renewal, Schedules in Logistics		Z,ZK	4
The course is focused on optimizing inventory management, maintenance and equipment renewal. In addition to classification models, inventory and renovation, students will be familiar with the basic details of deterministic and stochastic inventory models and renewal. In the second part, attention will be paid to the models of theory schedules as models of Job-Shop, Flow-Shop, Open-Shop and methods of schedules optimization.				
617TZDK	Technology of Railway Transport		Z,ZK	6
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.				
611LP2	Linear Programming 2		KZ	3
Task formulation and its solution in Excel. Integer linear programming, binary linear programming. Mixed linear programming, practical examples (transportation problem, epidemy of infectious disease, problem of order, problem of service).				

614PPRP	Computer Aided Project Management		KZ	2
The subject is conceived as a project at which students learn to work with all means needed for precise project management - from goals determining to time schedule, sensitivity analysis, project completion check, and final project evaluation including work with supportive SW for personal computers.				
617TRI	Creation and Control of Investment Projects		KZ	2
Technical-economic data processing of investment porioject, design of logistics systems, methodology of technological and logistic centres design proposal, value engineering.				
617TSI	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.				
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.				

Code of the group: 2S K LA 18-19 P

Name of the group: 2.sem.navaz.mag. KOMBI obor LA 18-19 povinné p edm ty

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 7 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
611THRO	**Queuing Theory** *Šárka Vorá ová Šárka Vorá ová (Gar.)*	ZK	2	2P+0C+8B	L	z
617KMD	**Quantitative Methods in Transport**	Z,ZK	6	2P+2C+14B	L	z
617MGD	**Management of Transport Systems**	Z,ZK	3	2P+1C+8B	L	z
617MID	**Managerial Information Systems in Transport** *Václav Baroch Václav Baroch (Gar.)*	Z,ZK	3	2P+1C+10B	L	z
623MAR	**Risk Analysis and Management**	Z,ZK	3	2P+1C+10B	L	z
614MTKS	**Telecommunications Systems Management**	KZ	3	2P+1C+10B	L	z
615JBA2	**Language - English 2** *V ra Pastorková*	Z	2	0P+2C+10B	L	z

Characteristics of the courses of this group of Study Plan: Code=2S K LA 18-19 P Name=2.sem.navaz.mag. KOMBI obor LA 18-19 povinné p edm ty

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.				
617KMD	Quantitative Methods in Transport		Z,ZK	6
The course focuses on the issue of the use of directed graphs in transport and logistics systems, undirected graphs tree type, planar graphs and their coloring. Further distribution problems, covering and location tasks 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.				
617MGD	Management of Transport Systems		Z,ZK	3
Functions, processes and systems of management in transport, organisational structures, strategy, social responsibility, soft skills.				
617MID	Managerial Information Systems in Transport		Z,ZK	3
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.				
623MAR	Risk Analysis and Management		Z,ZK	3
Concept of risks and terms. Risk sources, definition of hazard, impacts and risks. Methods for identification, analysis, assessment and management of risks. Risk engineering targets and good engineering practice. Methods, tools and techniques for risk engineering. System of systems risk. Application of strategic and system approach for benefit of security and development. Territorial, emergency and crisis planning. Human factor - its role.				
614MTKS	Telecommunications Systems Management		KZ	3
Contemporary status and future expectations in area of telecommunications networks and telecommunications services provisioning; introduction of basic managerial principles applied in provisioning of guaranteed level of telecommunications services quality, redundant telecommunications networking concept, networks and services management tools and position of financial and human resources management in telecommunications services provisioning.				
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 19-20 P

Name of the group: 3.sem.navaz.mag. KOMBI obor LA 19-20 povinné p edm ty

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
611DOPM	**Transportation Planning and Modeling**	Z,ZK	6	2P+2C+14B	Z	z
611STS	**Stochastic Systems** *Pavla Pecherková Evženie Uglickich (Gar.)*	Z,ZK	4	2P+2C+14B	Z	z
617HDI	**Evaluation of Transport Investments**	Z,ZK	5	2P+2C+14B	Z	z
617PPC	**Carriage Processes** *Roman Štrba Roman Štrba (Gar.)*	ZK	3	2P+0C+10B	Z	z
614NDB	**Databases Design and Programming**	KZ	2	0P+2C+8B	Z	z
623KRIO	**Crisis Management for Engineering Branches**	KZ	3	2P+0C+10B	Z	z
615JBA3	**Language - English 3** *Věra Pastorková*	Z	2	0P+2C+10B	Z	z

Characteristics of the courses of this group of Study Plan: Code=3S K LA 19-20 P Name=3.sem.navaz.mag. KOMBI obor LA 19-20 povinné předměty

611DOPM	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.			
611STS	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.			
617HDI	Evaluation of Transport Investments	Z,ZK	5
Transport and its role in national economy, costs of transport companies, transport and environment, externalities and their solution, investments in transport and their evaluation, the multiplier effects of transport; evaluation of transport investments by CBA.			
617PPC	Carriage Processes	ZK	3
Domestic carriages, international carriages, nomenclature of goods, pricing, contracting, responsibility for damages.			
614NDB	Databases Design and Programming	KZ	2
Database design, data types, constraints, SQL statements for data definition, data manipulation, transaction management, connection management and system administration, single-row, aggregation and SQL analytic functions. PL / SQL - variables, loops, conditions, procedures, functions, triggers, packages, cursors, exceptions.			
623KRIO	Crisis Management for Engineering Branches	KZ	3
Human system. Assets, terms, concept and safety management aims. Causes and consequences of disasters. Safety management. Crisis management-its aims, demands, roles, principles, specifics and comparidon with the EU and NATO. Organisational, personal, legislative, finance, material and technical provision. The IZS role. Planning. Protection of public and critical infrastructure. Problem solving.			
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 19-20 P
Name of the group: 4.sem.navaz.mag. KOMBI obor LA 19-20 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)* *Tutors,* **authors** *and guarantors (gar.)*	Completion	Credits	Scope	Semester	Role
615JBA4	**Language - English 4** *Věra Pastorková*	ZK	2	0P+2C+10B	L	z

Characteristics of the courses of this group of Study Plan: Code=4S K LA 19-20 P Name=4.sem.navaz.mag. KOMBI obor LA 19-20 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 NAV K LA 19-20
Name of the group: Diplomová práce nav.komb.LA (od) 19/20
Requirement credits in the group: In this group you have to gain 18 credits
Requirement courses in the group: In this group you have to complete 1 course

Credits in the group: 18

Note on the group:

Code	Name of the course / Name of the group of courses *(in case of groups of courses the list of codes of their members)* *Tutors, **authors** and guarantors (gar.)*	Completion	Credits	Scope	Semester	Role
611XNDP	**Master Thesis**	KZ	18	0P+20C+70B	L	z
612XNDP	**Master Thesis**	KZ	18	0P+20C+70B	L	z
614XNDP	**Master Thesis**	KZ	18	0P+20C+70B	L	z
615XNDP	**Master Thesis**	KZ	18	0P+20C+70B	L	z
616XNDP	**Master Thesis**	KZ	18	0P+20C+70B	L	z
623XNDP	**Master Thesis**	KZ	18	0P+20C+70B	L	z
618XNDP	**Master Thesis**	KZ	18	0P+20C+70B	L	z
620XNDP	**Master Thesis**	KZ	18	0P+20C+70B	L	z
621XNDP	**Master Thesis**	KZ	18	0P+20C+70B	L	z
622XNDP	**Master Thesis**	KZ	18	0P+20C+70B	L	z
617XNDP	**Master Thesis**	KZ	18	0P+20C+70B	L	z

Characteristics of the courses of this group of Study Plan: Code=DP NAV K LA 19-20 Name=Diplomová práce nav.komb.LA (od) 19/20

611XNDP	Master Thesis	KZ	18
612XNDP	Master Thesis	KZ	18
614XNDP	Master Thesis	KZ	18
615XNDP	Master Thesis	KZ	18
616XNDP	Master Thesis	KZ	18
623XNDP	Master Thesis	KZ	18
618XNDP	Master Thesis	KZ	18
620XNDP	Master Thesis	KZ	18
621XNDP	Master Thesis	KZ	18
622XNDP	Master Thesis	KZ	18
617XNDP	Master Thesis	KZ	18

Code of the group: SDP NAV K LA 19-20

Name of the group: Seminá k diplomové práci nav.komb.LA (od) 19/20

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

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

Credits in the group: 8

Note on the group:

Code	Name of the course / Name of the group of courses *(in case of groups of courses the list of codes of their members)* *Tutors, **authors** and guarantors (gar.)*	Completion	Credits	Scope	Semester	Role
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
623XN4K	**Seminar for Diploma Thesis¨**	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
617XN4K	**Seminar for Diploma Thesis**	Z	8	8B	L	z

Characteristics of the courses of this group of Study Plan: Code=SDP NAV K LA 19-20 Name=Seminá k diplomové práci nav.komb.LA (od) 19/20

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
623XN4K	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
617XN4K	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 18-19
Name of the group: PVP nav.komb.LA 18/19
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)* *Tutors,* **authors** *and guarantors (gar.)*	Completion	Credits	Scope	Semester	Role
617W2AM	**Application of Marketing Tools in Transportation**	KZ	3	8B	L	PV
617W2FM	**Financing in Urban Mass Transportation**	KZ	3	8B	Z	PV
615W2HS	**Road Transport History**	KZ	3	8B	L	PV
617W2KI	**Capital Investment in Transportation and Telecommunications**	KZ	3	8	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
621W2MK	**Marketing of Air Transport**	KZ	3	8	L	PV
621W2MS	**Aerospace Engineering Simulation and Modelling**	KZ	3	8B	Z	PV
615W2OZ	**Health Protection in Transportation and EU** *Petr Musil*	KZ	3	8B	Z	PV
616W2PG	**Computer Graphics and Virtual Reality**	KZ	3	8	Z	PV
615W2PT	**Food in Transportation** *Petr Musil*	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
617W2PS	**Case Studies in Transportation**	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
621W2TL	**Development Trends of Aircraft Construction**	KZ	3	8	Z	PV
621W2VA	**Selected Parts of Aerodynamics**	KZ	3	8	Z	PV

Characteristics of the courses of this group of Study Plan: Code=PVP NAV K LA 18-19 Name=PVP nav.komb.LA 18/19

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.				
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.				
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 interceptions, bridges and traffic control, development of road signs.				
617W2KI	Capital Investment in Transportation and Telecommunications		KZ	3
Financial market, investment desicion making - long term goals and investment strategies, long temr financing.				
614W2KI	Capital Investment in Transportation and Telecommunications		KZ	3
Financial market, investment desicion making - long term goals and investment strategies, long term financing				

Code	Course Name / Description	Completion	Credits
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.		
621W2MK	Marketing of Air Transport	KZ	3
	Definition, purpose, evolution, stages and types of marketing. Marketing in air transportation. Marketing research. Market segmentation. Airlines marketing strategies. Airline Products. Yield management and revenues. Air transport market sales.		
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.		
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.		
616W2PG	Computer Graphics and Virtual Reality	KZ	3
	Principles of creation and processing of bitmap and vector 2D graphics, 3D virtual scenes and algorithms used for their computerized processing. Adopting skills of work with professional and freeware tools for creation and processing of 2D, 3D and interactive graphics, and basics of programming language VRML and graphic libraries (OpenGL).		
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.		
617W2PS	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.).		
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?		
621W2TL	Development Trends of Aircraft Construction	KZ	3
	Historical and nowadays trends. Future scenarios. Space industry. Economy.		
621W2VA	Selected Parts of Aerodynamics	KZ	3
	Real gases physical properties, atmosphere. Fundamentals of fluid dynamics. External and internal aerodynamics in aircraft applications.Wing sections, wings, airfoil cascades, lift, drag. Polar, ideal incompressible and compressible flows. Viscous flows. Boundary layer, stability, turbulence. Reynolds, Strouhal and Mach Numbers. Flows aircraft aerodynamics and light dynamics. Static and dynamic stability. Anoeurability. Aircraft performances.		

Name of the block: Jazyky
Minimal number of credits of the block: 8
The role of the block: J

Code of the group: JZ-NAV K (1.-4.SEM)
Name of the group: Jazyky navaz.mag. KOMBI studia (1.- 4.sem.) obor 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) Tutors, **authors** and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
615J2F1	**Language - French 1**	Z	2	0P+2C+10B	Z	J

615J2I1	**Language - Italian 1**	Z	2	0P+2C+10B	Z	J
615J2N1	**Language - German 1** *René Skalický*	Z	2	0P+2C+10B	Z	J
615J2R1	**Language - Russian 1** *Vilma Gottwaldová*	Z	2	0P+2C+10B	Z	J
615J2S1	**Language - Spanish 1**	Z	2	0P+2C+10B	Z	J
615JBF2	**Language - French 2**	Z	2	0P+2C+10B	L	J
615JBI2	**Language - Italian 2**	Z	2	0P+2C+10B	L	J
615JBN2	**Language - German 2** *René Skalický, Sv tlana Petrová*	Z	2	0P+2C+10B	L	J
615JBR2	**Language - Russian 2** *Vilma Gottwaldová, Marie Michlová*	Z	2	0P+2C+10B	L	J
615JBS2	**Language - Spanish 2**	Z	2	0P+2C+10B	L	J
615JBF3	**Language - French 3**	Z	2	0P+2C+10B	Z	J
615JBI3	**Language - Italian 3**	Z	2	0P+2C+10B	Z	J
615JBN3	**Language - German 3** *René Skalický*	Z	2	0P+2C+10B	Z	J
615JBR3	**Language - Russian 3** *Vilma Gottwaldová*	Z	2	0P+2C+10B	Z	J
615JBS3	**Language - Spanish 3**	Z	2	0P+2C+10B	Z	J
615JBF4	**Language - French 4**	ZK	2	0P+2C+10B	L	J
615JBI4	**Language - Italian 4**	ZK	2	0P+2C+10B	L	J
615JBN4	**Language - German 4** *René Skalický, Sv tlana Petrová*	ZK	2	0P+2C+10B	L	J
615JBR4	**Language - Russian 4** *Vilma Gottwaldová, Marie Michlová*	ZK	2	0P+2C+10B	L	J
615JBS4	**Language - Spanish 4**	ZK	2	0P+2C+10B	L	J

Characteristics of the courses of this group of Study Plan: Code=JZ-NAV K (1.-4.SEM) Name=Jazyky navaz.mag. KOMBI studia (1.-4.sem.) obor 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
611DOPM	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.
611LP2	Linear Programming 2	KZ	3
Task formulation and its solution in Excel. Integer linear programming, binary linear programming. Mixed linear programming, practical examples (transportation problem, epidemy of infectious disease, problem of order, problem of service).
611STS	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.
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
611XNDP	Master Thesis	KZ	18
612XN4K	Seminar for Diploma Thesis	Z	8
612XNDP	Master Thesis	KZ	18

Code	Course	Type	Credits
614MTKS	Telecommunications Systems Management	KZ	3
Contemporary status and future expectations in area of telecommunications networks and telecommunications services provisioning; introduction of basic managerial principles applied in provisioning of guaranteed level of telecommunications services quality, redundant telecommunications networking concept, networks and services management tools and position of financial and human resources management in telecommunications services provisioning.			
614NDB	Databases Design and Programming	KZ	2
Database design, data types, constraints, SQL statements for data definition, data manipulation, transaction management, connection management and system administration, single-row, aggregation and SQL analytic functions. PL / SQL - variables, loops, conditions, procedures, functions, triggers, packages, cursors, exceptions.			
614PPRP	Computer Aided Project Management	KZ	2
The subject is conceived as a project at which students learn to work with all means needed for precise project management - from goals determining to time schedule, sensitivity analysis, project completion check, and final project evaluation including work with supportive SW for personal computers.			
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
614XNDP	Master Thesis	KZ	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
615XNDP	Master Thesis	KZ	18
616W2PG	Computer Graphics and Virtual Reality	KZ	3
Principles of creation and processing of bitmap and vector 2D graphics, 3D virtual scenes and algorithms used for their computerized processing. Adopting skills of work with professional and freeware tools for creation and processing 2D, 3D and interactive graphics, and basics of programming language VRML and graphic libraries (OpenGL).
616XN4K	Seminar for Diploma Thesis	Z	8
616XNDP	Master Thesis	KZ	18
617HDI	Evaluation of Transport Investments	Z,ZK	5
Transport and its role in national economy, costs of transport companies, transport and environment, externalities and their solution, investments in transport and their evaluation, the multiplier effects of transport; evaluation of transport investments by CBA.

Code	Course		Type	Credits
617KMD	Quantitative Methods in Transport		Z,ZK	6
	The course focuses on the issue of the use of directed graphs in transport and logistics systems, undirected graphs tree type, planar graphs and their coloring. Further distribution problems, covering and location tasks 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.			
617MGD	Management of Transport Systems		Z,ZK	3
	Functions, processes and systems of management in transport, organisational structures, strategy, social responsibility, soft skills.			
617MID	Managerial Information Systems in Transport		Z,ZK	3
	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.			
617PPC	Carriage Processes		ZK	3
	Domestic carriages, international carriages, nomenclature of goods, pricing, contracting, responsibility for damages.			
617RLOG	Supply Chains Management		Z,ZK	5
	Logistics chain. Logistics system. Horizontal and vertical dimensions of logistics integration. Types of logistics chain. Logistics chain with continual flows, with interrupted flows, with synchronous flows. Management based on planning in closed circle with information feedback. Possible position of decoupling point in a logistics chain. Chain effects. Case studies.			
617RZO	Management of Inventory and Renewal, Schedules in Logistics		Z,ZK	4
	The course is focused on optimizing inventory management, maintenance and equipment renewal. In addition to classification models, inventory and renovation, students will be familiar with the basic details of deterministic and stochastic inventory models and renewal. In the second part, attention will be paid to the models of theory schedules as models of Job-Shop, Flow-Shop, Open-Shop and methods of schedules optimization.			
617TRI	Creation and Control of Investment Projects		KZ	2
	Technical-economic data processing of investment porioject, design of logistics systems, methodology of technological and logistic centres design proposal, value engineering.			
617TSI	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.			
617TZDK	Technology of Railway Transport		Z,ZK	6
	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.			
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.			
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.			
617W2KI	Capital Investment in Transportation and Telecommunications		KZ	3
	Financial market, investment desicion making - long term goals and investment strategies, long temr financing.			
617W2PS	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.).			
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.			
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.			
617XN4K	Seminar for Diploma Thesis		Z	8
617XNDP	Master Thesis		KZ	18
618XN4K	Seminar for Diploma Thesis		Z	8
618XNDP	Master Thesis		KZ	18
620XN4K	Seminar for Diploma Thesis		Z	8
620XNDP	Master Thesis		KZ	18
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.			
621W2MK	Marketing of Air Transport		KZ	3
	Definition, purpose, evolution, stages and types of marketing. Marketing in air transportation. Marketing research. Market segmentation. Airlines marketing strategies. Airline Products. Yield management and revenues. Air transport market sales.			
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.			
621W2TL	Development Trends of Aircraft Construction	KZ	3
Historical and nowadays trends. Future scenarios. Space industry. Economy.			
621W2VA	Selected Parts of Aerodynamics	KZ	3
Real gases physical properties, atmosphere. Fundamentals of fluid dynamics. External and internal aerodynamics in aircraft applications.Wing sections, wings, airfoil cascades, lift, drag. Polar, ideal incompressible and compressible flows. Viscous flows. Boundary layer, stability, turbulence. Reynolds, Strouhal and Mach Numbers. Flows aircraft aerodynamics and light dynamics. Static and dynamic stability. Anoeurability. Aircraft performances.			
621XN4K	Seminar for Diploma Thesis	Z	8
621XNDP	Master Thesis	KZ	18
622XN4K	Seminar for Diploma Thesis	Z	8
622XNDP	Master Thesis	KZ	18
623KRIO	Crisis Management for Engineering Branches	KZ	3
Human system. Assets, terms, concept and safety management aims. Causes and consequences of disasters. Safety management. Crisis management-its aims, demands, roles, principles, specifics and comparidon with the EU and NATO. Organisational, personal, legislative, finance, material and technical provision. The IZS role. Planning. Protection of public and critical infrastructure. Problem solving.			
623MAR	Risk Analysis and Management	Z,ZK	3
Concept of risks and terms. Risk sources, definition of hazard, impacts and risks. Methods for identification, analysis, assessment and management of risks. Risk engineering targets and good engineering practice. Methods, tools and techniques for risk engineering. System of systems risk. Application of strategic and system approach for benefit of security and development. Territorial, emergency and crisis planning. Human factor - its role.			
623XN4K	Seminar for Diploma Thesis¨	Z	8
623XNDP	Master Thesis	KZ	18

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