Study plan

Name of study plan: CŽV pro LED bak.prez. v 18/19

Faculty/Institute/Others:

Department:

Branch of study guaranteed by the department: Welcome page

Garantor of the study branch: Program of study: Welcome page Type of study: unknown full-time

Required credits: 180 Elective courses credits: 0 Sum of credits in the plan: 180

Note on the plan:

Name of the block: Compulsory courses Minimal number of credits of the block: 162

The role of the block: Z

Code of the group: 1.S.BP 17/18

Name of the group: 1.sem.bak.prez. od 17/18

Requirement credits in the group: In this group you have to gain 30 credits

Requirement courses in the group: In this group you have to complete 11 courses

Credits in the group: 30 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
11CAL1	Calculus 1 Olga Vraštilová, Tomáš Tasák, Magdalena Hykšová, Bohumil Ková, Ond ej Navrátil Bohumil Ková Ond ej Navrátil (Gar.)	Z,ZK	7	2P+4C+22B	B Z	Z
11LA	Linear Algebra Lucie Kárná, Pavel Provinský, Martina Be vá ová Martina Be vá ová Martina Be vá ová (Gar.)	Z,ZK	3	2P+1C+10B	B Z	Z
12ZYDI	Introduction to Transportation Engineering Vojt ch Novotný, Zuzana arská, Dagmar Ko árková	Z,ZK	2	1P+1C	Z	Z
18MTY	Materials Science and Engineering Nela Kr má ová, Jan Falta, Radim Dvo ák, Václav Rada, Jitka ezní ková, Jaroslav Valach, Jaroslav Valach Jaroslav Valach (Gar.)	Z,ZK	3	2P+1C+10B	3 Z	Z
11GIE	Geometry Pavel Provinský, Old ich Hykš, Šárka Vorá ová Old ich Hykš Old ich Hykš (Gar.)	KZ	3	2P+2C+12B	B Z	Z
14ASD	Algorithm and Data Structures Jana Kaliková, Jan Kr ál, Tomáš Brandejský, Michal Je ábek, Marek Kalika, Zden k Lokaj, Alena Plašilová, Jan Procházka, Martin Šrotý, Vít Fábera Vít Fábera (Gar.)	KZ	3	0P+2C+8B	3 Z	Z
14KSP	Constructing with Computer Aid Martin Brumovský, Martin Fiala, Radek Kratochvíl, Lukáš Svoboda, Jan Vogl, Drahomír Schmidt Lukáš Svoboda Drahomír Schmidt (Gar.)	KZ	2	0P+2C+8B	B Z	Z
18TED	Technical Documentation Jitka ezní ková, Vít Malinovský Jitka ezní ková (Gar.)	KZ	2	1P+1C+8B	Z	Z
15DPLG	Transportation Psychology Eva Rezlerová, Jana Štikarová	Z	2	2P+0C+6B	B Z	Z
16UDOP	Introduction into Vehicles Zuzana Radová, Petr Bouchner	Z	2	2P+0C+8B	3 Z	Z
TV-1	Physical Education	Z	1		Z	Z

Characteristics of the courses of this group of Study Plan: Code=1.S.BP 17/18 Name=1.sem.bak.prez. od 17/18

11CAL1	Calculus 1	Z,ZK	7			
Sequence of real numbers and its limit. Basic properties of mappings. Function of one real variable, its limit and derivative. Geometric properties of n-dimensional Euklidean space and						
Cartesian coordinate sy	stem. Geometric meaning of the differential of functions several real variables, differential calculus of functions of several rea	al variables.				
11LA	Linear Algebra	Z,ZK	3			
Vector spaces (linear co	mbinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and	their solvability. D	eterminants and			

their applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classification.

12ZYDI	Introduction to Transportation Engineering	Z,ZK	2
Role of transportation in	land-use planning. Basic terms in transportation engineering. Traffic survey and traffic prognosis. Introduction to topic of road	s, public mass trai	nsport. Negative
impacts of transportation	n to environment and safety.		
18MTY	Materials Science and Engineering	Z,ZK	3
Basic course of material	s science and engineering explains mechanical properties of structural materials based on their bonding forces and microstru	cture. However th	e main attention
is paid to metals as the	most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and o	composites. Atten	tion is also paid
to degradation processe	s in materials, to defectoscopy and to main mechanical tests.		
11GIE	Geometry	KZ	3
Differential geometry of	curves - parameterization, the arc of the curve, torsion and curvature, Frenet's trihedron. Kinematics - a curve as a trajectory	of the motion, th	e velocity, and
acceleration of a particle	e moving on a curved path.		
14ASD	Algorithm and Data Structures	KZ	3
Students will be familiari	zed with selected basic and derived data structures, algorithms, their properties and their design procedure. Students will ana	ze problems, pro	pose theoretical
solutions to the set task	and the resulting algorithm write by means of flowcharts, practice in reading algorithms recorded by means of the flowchart	and use the basic	s of Boolean
algebra with forming the	conditions for the algorithms.		
14KSP	Constructing with Computer Aid	KZ	2
•	ermination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic common v	• .	
•	linated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting possi	bilites, AutoCAD	environment
profiles, drawings with ra	aster foundaments).		
18TED	Technical Documentation	KZ	2
Technical standards, inte	ernational standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimension	al and geometrica	al accuracy,
arrangement of drawing	sheets.		
15DPLG	Transportation Psychology	Z	2
Subject of psychology ar	nd its basic concepts. Information intake, decision-making and behaviour. Performance. Engineering psychology and vehicle co	nstruction. Psych	ological aspects
of travel route and traffic	conditions, accidents and traffic incidents. Selection and training of the staff. Work and leisure. Age as a factor in transport o	peration.	
16UDOP	Introduction into Vehicles	Z	2
Vehicles and transportation	ion systems. Functionality and setup. Movement and drive principles. Engines and their characteristics. Rail, road, air and w	iter transport. Alte	ernative means
of transport. Lifting equip	oment and conveyors. Legislation.		
TV-1	Physical Education	Z	1

Code of the group: 2.S.BP 17/18

Name of the group: 2.sem.bak.prez. od 17/18

Requirement credits in the group: In this group you have to gain 30 credits

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

Credits in the group: 30 Note on the group:

Note on the g	μουρ.					
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
11CAL2	Calculus 2 Olga Vraštilová, Tomáš Tasák, Magdalena Hykšová, Ond ej Navrátil, Old ich Hykš Ond ej Navrátil Ond ej Navrátil (Gar.)	Z,ZK	5	2P+3C+20B	L	Z
11STAT	Statistics Pavel Provinský, Evženie Uglickich, Pavla Pecherková, Michal Matowicki, Natálie Blahitka, Ivan Nagy Pavla Pecherková Evženie Uglickich (Gar.)	Z,ZK	4	2P+2C+12E	L	Z
12ZTS	Railway Lines and Stations Lukáš Týfa, Petr Šatra, Martin Jacura, Tomáš Javo ík, Ond ej Trešl Lukáš Týfa (Gar.)	Z,ZK	4	2P+2C+10B	L	Z
18SAT	Structural Analysis Nela Kr má ová, Jan Falta, Jitka ezní ková, Daniel Kytý, Jan Vy ichl, Tomáš Doktor, Jan Šleichrt Daniel Kytý (Gar.)	Z,ZK	4	2P+2C+14B	L	Z
20SYSA	Systems Analysis Zuzana B linová, Ji í R ži ka, Petr Bureš Zuzana B linová (Gar.)	Z,ZK	5	2P+2C+14B	L	Z
14PRG	Programming Jana Kaliková, Jan Kr ál, Alena Plašilová, Jan Procházka, Martin Fiala, Lukáš Svoboda Jana Kaliková Jana Kaliková (Gar.)	KZ	2	0P+2C+8B	L	Z
17TEDL	Transport Technology and Logistics Vít Janoš, Michal Drábek, Zden k Michl, Milan K íž, Rudolf Vávra Zden k Michl Vít Janoš (Gar.)	KZ	3	2P+1C	L	Z
21ZALD	Basics of Air Transport Jakub Hospodka, Tomáš Tlu ho , Ji í Volt, Peter Olexa, Jan Slezá ek, Jakub Trýb	KZ	2	0P+2C+8B	L	Z
TV-2	Physical Education	Z	1		L	Z

Characteristics of the courses of this group of Study Plan: Code=2.S.BP 17/18 Name=2.sem.bak.prez. od 17/18

11CAL2 Calculus 2
Indefinite integral, Newtonian integral, Riemannian integral of the function of one variable, improper Riemannian integral, Riemannian integral in Rn. Parametric description of regular k-dimensional surfaces in Rn, Riemannian integral over regular surfaces. Line and surface integrals of the second type, Stokes theorems, ordinary differential equations of the first order, linear differential equations with constant coefficients and its systems

11STAT Statistics Z,ZK 4

Basics of probability Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Parametric tests Nonparametric tests Regression and correlation analysis

12ZTS	Railway Lines and Stations	Z,ZK	4
Rail transport. Rail	ilway track geometry parameters. Route layout of railway lines. Railway line construction - railway substructure and superstructi	ure. Spatial layout of r	ailway lines.
Railway control sys	stems in relation to infrastructure. Operating and carriage points. Railway lines net and category. Traction in rail transport.		
18SAT	Structural Analysis	Z,ZK	4
Seneral system of	f forces in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically deterr	minate beams and sin	nple girders.
rinciple of virtual	work. Kinematic method for calculation of reactions of statically determinate systems. Determination of axial forces in truss constru	uctions. Cross-sectiona	al characteristic
of planar shapes. I	Fiber polygons and chains.		
20SYSA	Systems Analysis	Z,ZK	5
ntroduction to sys	stem sciences, system viewpoint, terminology, typical system analysis tasks, system identification, system interface and interfac	e tasks, processes, s	ystem behaviou
ind its analysis, st	trong functions and processes, genetic code, system identity, system architecture. Tools for system analysis - Petri nets, decisi	on tables, algorithms	for structural
acks Coff and has	and avertome, most had a few posts avertom analysis		
asks. Suit and nai	rd systems, methods for soft system analysis.		
	Programming	KZ	2
14PRG		1 1	_
14PRG The Course Progra	Programming	rogramming language	is expanded
14PRG The Course Progra here so that the pa	Programming ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python programming builds on and fully extends the course 14ASD (Algorithmization and Data Structures).	rogramming language	is expanded
14PRG The Course Progra nere so that the pa vorking with date	Programming ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python prarticipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting an	rogramming language	is expanded
14PRG The Course Progra here so that the pa working with date a	Programming ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python prarticipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting an and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML).	rogramming language d searching, tuples, s	e is expanded ets, dictionaries
APRG The Course Progra here so that the pa vorking with date a TTEDL Basic terms in tran	Programming ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python prarticipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting an and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). Transport Technology and Logistics	rogramming language d searching, tuples, s KZ ght transport, organisa	e is expanded ets, dictionaries 3 ation of traffic in
APRG The Course Progra here so that the pa working with date a TTEDL Basic terms in tran hach transport mo	Programming ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python properticipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting an and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). Transport Technology and Logistics Insport technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and freigness of transport planning.	rogramming language d searching, tuples, s KZ ght transport, organisa	e is expanded ets, dictionaries 3 ation of traffic in
APRG The Course Progratere so that the payorking with date a TTEDL Basic terms in transport moeach transport moeach	Programming ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python prarticipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting an and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). Transport Technology and Logistics Insport technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and freignous, technologic factors of the side of operator and client, organisation of city transport, logistic technologies and their aplication.	rogramming language d searching, tuples, s KZ ght transport, organisa on using various trans KZ	e is expanded ets, dictionaries 3 ation of traffic ir sport modus.
14PRG The Course Progratere so that the payorking with date at 17TEDL Basic terms in transport moeach transport moeach transport, definitions,	Programming ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python prarticipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting an and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). Transport Technology and Logistics Insport technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and freignous, technologic factors of the side of operator and client, organisation of city transport, logistic technologies and their aplication. Basics of Air Transport	rogramming language d searching, tuples, s KZ ght transport, organisa on using various trans KZ igation. Weight, balance	e is expanded ets, dictionaries 3 ation of traffic ir sport modus. 2 ce, performance
14PRG The Course Prograthere so that the parameter working with date at 17TEDL Basic terms in transpach transport mo 21ZALD History, definitions, Flight planning, op	Programming ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python prarticipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting an and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). Transport Technology and Logistics Insport technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and freignous, technologic factors of the side of operator and client, organisation of city transport, logistic technologies and their aplication. Basics of Air Transport is, terminology, basic rules. VFR/IFR. Basics of aerodynamics. Propulsion of aircraft. Aircraft design. Basics of navigation, radio navigation, radio navigation.	rogramming language d searching, tuples, s KZ ght transport, organisa on using various trans KZ igation. Weight, balance	e is expanded ets, dictionaries 3 ation of traffic in sport modus. 2 ce, performance

Code of the group: 3.S.BP 18/19

Name of the group: 3.sem.bak.prez. od 18/19

Requirement credits in the group: In this group you have to gain 30 credits

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

Credits in the group: 30

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
11FYZ	Physics Old ich Hykš, Zuzana Malá, Tomáš Vít , Jana Kuklová Zuzana Malá Zuzana Malá (Gar.)	Z,ZK	5	2P+2C+18E	s z	Z
12MDE	Transport Models and Transport Excesses Milan Dont, Josef Kocourek	Z,ZK	3	2P+1C+8E	Z	Z
17TGA	Graph Theory and its Applications in Transport Alena Rybi ková, Denisa Mocková, Dušan Teichmann	Z,ZK	4	2P+2C+12E	Z	Z
18PZP	Elasticity and Strength Nela Kr má ová, Jan Falta, Radim Dvo ák, Jitka ezní ková, Daniel Kytý, Jan Vy ichl, Tomáš Doktor, Jan Šleichrt, Tomáš Fíla,	Z,ZK	3	2P+1C+10E	B Z	Z
20UITS	Introduction to Intelligent Transport Systems Ji í R ži ka, Patrik Horaž ovský, Kristýna Navrátilová, Viktor Beneš, Eva Haj iarová, Martin Langr, Vladimír Faltus, Pavel Hrubeš	Z,ZK	7	3P+2C+20E	B Z	Z
12PPOK	Designing Roads, Highways and Motorways Petr Šatra, Josef Kocourek, Tomáš Pad lek, Petr Kumpošt	KZ	3	1P+2C+10E	B Z	Z
14DATS	Database Systems Jana Kaliková, Jan Kr ál Jana Kaliková Jana Kaliková (Gar.)	KZ	2	1P+1C+10E	B Z	Z
15JZ1A	Foreign Language - English 1 Eva Rezlerová, Markéta Vojanová, Dana Boušová, Marie Michlová, Barbora Horá ková, Marek Tome ek, Jan Feit, Markéta Musilová, Peter Morpuss,	Z	3	0P+4C+10E	3 Z	Z

Characteristics of the courses of this group of Study Plan: Code=3.S.BP 18/19 Name=3.sem.bak.prez. od 18/19

11FYZ	Physics	Z,ZK	5
Kinematics, parti	cle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermodynamics.	· · · ·	
12MDE	Transport Models and Transport Excesses	Z,ZK	3
Parameters of the	e traffic flow and methods for their measurement. Models of the traffic flow, communications load, line and urban systems. Theory	of queues, shock wa	ves. Quality of
transport and its	assessment. Statistical characteristics of transport. Transport excesses, their analysis, the causes, identify and minimize the cons	sequences. Improving	of transport
safety and fluence	cy.		
17TGA	Graph Theory and its Applications in Transport	Z,ZK	4
Basic terms of gr	raph theory, paths in graphs, flows in networks, location problems, design problems on graphs, optimum routing, use of graphs in	other scientific discipl	lines.
18PZP	Elasticity and Strength	Z,ZK	3
Tension and com	pression. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bo	olted and welded joint	s of structures
Analysis of defle	ction curve of beams. Torsion of circular cross sections. Combined loading. Stability.		
20UITS	Introduction to Intelligent Transport Systems	Z,ZK	7
Terminology and	legislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamentals of	f information and telec	communication
systems for ITS.	Principles and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real exa	mples of possible app	lications of the
principles of ITS.			

12PPOK Designing Roads, Highways and Motorways

Definition, types, ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard speed. Route in rural areas.

Range of vision for stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safety device. Crossings, junctions, intersections.

14DATS Database Systems

KZ 2

Basic concepts of database systems, conceptual model, relational data model, the principles of normal forms, relational database design, security and integrity of data, database queries, relational algebra, SQL language, client / server, multilayer architectures, distributed database systems. Access to data via the WWW.

Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and communicative skills. Elementary stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles of rhetoric.

3

Code of the group: 4.S.BLED 16/17

Name of the group: 4.sem.LED bak.prez. (od) 16/17

Foreign Language - English 1

Requirement credits in the group: In this group you have to gain 26 credits

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

Credits in the group: 26 Note on the group:

15JZ1A

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
11MSP	Modeling of Systems and Processes Bohumil Ková, Lucie Kárná, Jana Kuklová Jana Kuklová Bohumil Ková (Gar.)	Z,ZK	4	2P+2C+12E	L	Z
21LTN	Air Navigation Jakub Kraus	Z,ZK	2	2P+1C+12E	L	Z
21LTTE	Aerodromes Ladislav Capoušek	Z,ZK	4	2P+1C+12E	L	Z
21ZYL1	Principles of Flight 1 Vladimír Machula	Z,ZK	5	2P+2C+16E	L	Z
21LL1	Aircraft 1 Jakub Kraus	KZ	3	2P+1C+10E	L	Z
21MRG	Meteorology Iveta Kameníková	KZ	3	1P+1C+10E	L	Z
21ULCT	Aircraft Maintenance Tomáš Parýzek	Z	2	2P+0C+8E	L	Z
15JZ2A	Foreign Language - English 2 Eva Rezlerová, Markéta Vojanová, Dana Boušová, Marie Michlová, Barbora Horá ková, Marek Tome ek, Jan Feit, Markéta Musilová, Peter Morpuss,	Z,ZK	3	0P+4C+10E		Z

Characteristics of the courses of this group of Study Plan: Code=4.S.BLED 16/17 Name=4.sem.LED bak.prez. (od) 16/17

11MSP	Modeling of Systems and Processes	Z,ZK	4
System and subsys	stem, external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of d	ifferential and differ	rential equations
Linear and nonline	ar system, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer function	on. Stability of LTI:	systems.
Discretization of co	ontinuous systems. System interconnection.		
21LTN	Air Navigation	Z,ZK	2
Earth - its shape, p	parameters and properties. Aeronautical charts and their use. Measuring time. Dead reckoning. Radionavigation aids. Global navi	gation satellite sys	tems. Air traffic
services routes and	d their design.		
21LTTE	Aerodromes	Z,ZK	4
Aerodrome referen	ice point and temperature, TORA, TODA, ASDA, LDA. Taxiway and apron. Clearway. Stopway. Obstacle limitation surfaces. Runw	ay marking. Runwa	ay zone lights.
Environmental con	ditions. Public traffic.		
21ZYL1	Principles of Flight 1	Z,ZK	5
Aerodynamic drag	, relation between drag and speed, streamline, boundary layer, formula of continuity, formula of Bernoulli, lift and drag, air flow an	d pressures arour	nd wing, angle of
attack, reactions of	f wing in air flow, lift and drag of a wing and an aircraft, coefficient of lift and drag, critical angle of attack, wing with final span, indu	uced drag, interfere	ence, devices for
lift and drag increa	Se.		
21LL1	Aircraft 1	KZ	3
Aircraft structural a	and conceptual design types - definitions and basic knowledge of the problem. Development of requirements, aircraft definitions are	nd categorisation.	Aircraft loadings

Systems of primary and secondary airframe structure. Airframe and propulsion unit. Lectures are devoted to aeroplane topics.

21MRG Meteorology KZ 3

Structure of atmosphere. Vertical stratification. Pressures QNH, QFE, QFF, QNE. Instability. Atmospherical fronts. Atmospheric precipitation - origin and kinds. Turbulence. Powers causing wind. Cyclone and anticyclone. Gradient and geostrofical wind. Visibilities in air transport. Dangerous meteorological phenomenas. Meteorological maps. Climatology. Circulation. Intertropical front. Meteorological informations.

21ULCT | Aircraft Maintenance | Z | 2
Aircraft operations and technical operations. Maintenance and work processes. Defects search methods, status check diagnostic tools. Selection and qualification of aviation personnel.

Basic documentation for maintenance. Optimization of time maintenance intervals. Regulation no. 1321/2014 Part 145. Human factors of aircraft maintenance. Regulation of director EASA for aircraft maintenance. Seminars will be focused on practical application.

15JZ2A Foreign Language - English 2 Z,ZK 3

Grammatical structures and style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and communicative skills. Elementary stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles of rhetoric.

Code of the group: 5.S.BLED 17/18

Name of the group: 5.sem.LED bak.prez. (od) 17/18

Requirement credits in the group: In this group you have to gain 23 credits

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

Credits in the group: 23

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
21LCM	Aircraft Engines Daniel Hanus, Tomáš Parýzek Daniel Hanus	Z,ZK	3	2P+1C	Z,L	Z
21LGP	Legislation and Operational Regulations	Z,ZK	5	2P+2C	Z	Z
21LTA2	Aircraft 2 Karel Mündel Karel Mündel	Z,ZK	2	2P+1C	Z	Z
21ZT	ATM Systems Vladimír Machula, Stanislav Pleninger Stanislav Pleninger (Gar.)	ZK	2	2P+0C	Z,L	Z
21ZYL2	Principles of Flight 2 P emysl Vávra, Marek Veselý P emysl Vávra	Z,ZK	5	2P+2C	Z	Z
21LAG1	English for Aviation 1 Jitka He manová Jitka He manová	KZ	3	0P+2C	Z	Z
21PDLE	Airport Design and Operation Petr Líka Petr Líka	KZ	3	1P+1C	Z	Z

Characteristics of the courses of this group of Study Plan: Code=5.S.BLED 17/18 Name=5.sem.LED bak.prez. (od) 17/18

Characteristics	of the courses of this group of Study Plan: Code=5.S.BLED 17/18 Name=5.sem.LED bak.pre		
21LCM	Aircraft Engines	Z,ZK	3
Aircraft piston engine	e, theoretical background, operational characteristics and construction schemes. Propellers, operational characterictics. Turbine	engine, theoretica	l background,
thermal cycles, cons	truction schemes, operational characteristics. Turbojet and turbofan engines, basic construction modules, and their operational	characteristics. En	gine control.
21LGP	Legislation and Operational Regulations	Z,ZK	5
Introduction into avia	tion regulations. The scope of international and national organizations in civil aviation. Analysis and interpretation of the ICAO /	Annexes 1-19, ICA	Docs. 4444,
7030, 8168. Introduc	tion to the European Parliament and Council Regulation (EC), Commission Regulation (EU) and the Decisions of the Executive	Director of EASA.	
21LTA2	Aircraft 2	Z,ZK	2
Manufacturers respon	ensibility, responsibilities of operator and professional supervising. Legislation in area of airworthiness. International and national	standards. Static s	olidity of aircraf
etructures Aeroelast	ticity. Inherent and operational reliability of aircraft structure. Fatigue strength. Aircraft structure lifetime presumption.		
Structures. Aeroeiasi	licity. Inherent and operational reliability of aircraft structure. I aligue strength. Aircraft structure metime presumption.		
21ZT	ATM Systems	ZK	2
21ZT		1 1	_
21ZT The course introduce	ATM Systems	1 1	_
21ZT The course introduce	ATM Systems es classical and modern facilities, systems and technologies designated for ATS. Student obtains knowledge of technical princip	1 1	_
21ZT The course introduce communication, navi	ATM Systems es classical and modern facilities, systems and technologies designated for ATS. Student obtains knowledge of technical principal igation and surveillance aviation systems are concerned.	Z,ZK	as far as
21ZT The course introduce communication, navi 21ZYL2 Static & amp; dynamication	ATM Systems es classical and modern facilities, systems and technologies designated for ATS. Student obtains knowledge of technical principigation and surveillance aviation systems are concerned. Principles of Flight 2	bles and solutions a	as far as 5 control – pitch
21ZT The course introduce communication, navi 21ZYL2 Static & amp; dynami (longitudinal), yaw (constitution)	ATM Systems es classical and modern facilities, systems and technologies designated for ATS. Student obtains knowledge of technical principlication and surveillance aviation systems are concerned. Principles of Flight 2 ic longitudinal stability, neutral point, location of centre of gravity, static directional & Samp; lateral stability, dynamic directional & Samp; lateral stability dynamic directional & Samp; lateral & Samp; lateral & Samp; lateral & Samp;	bles and solutions a	as far as 5 control – pitch
21ZT The course introduce communication, navi 21ZYL2 Static & amp; dynami (longitudinal), yaw (constitution)	ATM Systems es classical and modern facilities, systems and technologies designated for ATS. Student obtains knowledge of technical princip igation and surveillance aviation systems are concerned. Principles of Flight 2 ic longitudinal stability, neutral point, location of centre of gravity, static directional & amp; lateral stability, dynamic directional & a firectional) & amp; roll (lateral), roll/yaw interaction, trimming, speed of sound, Mach number, compressibility, shock waves, critic	bles and solutions a	as far as 5 control – pitch
21ZT The course introduce communication, navious 21ZYL2 Static & Description of the state of the	ATM Systems es classical and modern facilities, systems and technologies designated for ATS. Student obtains knowledge of technical princip gation and surveillance aviation systems are concerned. Principles of Flight 2 ic longitudinal stability, neutral point, location of centre of gravity, static directional & amp; lateral stability, dynamic directional & a lirectional) & amp; roll (lateral), roll/yaw interaction, trimming, speed of sound, Mach number, compressibility, shock waves, critic nitations, manoeuvring envelope, gust-load diagram.	Z,ZK mp; lateral stability, al Mach number, a	as far as 5 control – pitch erodynamic
21ZT The course introduce communication, navious 21ZYL2 Static & Description of the state of the	ATM Systems es classical and modern facilities, systems and technologies designated for ATS. Student obtains knowledge of technical princip gation and surveillance aviation systems are concerned. Principles of Flight 2 ic longitudinal stability, neutral point, location of centre of gravity, static directional & amp; lateral stability, dynamic directional & a lirectional) & amp; roll (lateral), roll/yaw interaction, trimming, speed of sound, Mach number, compressibility, shock waves, critic mitations, manoeuvring envelope, gust-load diagram. English for Aviation 1	Z,ZK mp; lateral stability, al Mach number, a	as far as 5 control – pitch erodynamic
21ZT The course introduct communication, navious 21ZYL2 Static & Description of the state of the	ATM Systems es classical and modern facilities, systems and technologies designated for ATS. Student obtains knowledge of technical princip gation and surveillance aviation systems are concerned. Principles of Flight 2 ic longitudinal stability, neutral point, location of centre of gravity, static directional & lateral stability, dynamic directional &a lirectional) & roll (lateral), roll/yaw interaction, trimming, speed of sound, Mach number, compressibility, shock waves, critic mitations, manoeuvring envelope, gust-load diagram. English for Aviation 1 erminology used in civil aviation in the general context and emphasizing the ability to receive information only in English.	Z,ZK mp; lateral stability, all Mach number, a	5 control – pitch erodynamic

Code of the group: 6.S.BLED 17/18

Name of the group: 6.sem.LED bak.prez. 17/18

Requirement credits in the group: In this group you have to gain 23 credits

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

Credits in the group: 23 Note on the group:

Note on the gro	up.					
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
21ELED	Air Transport Economy Eva Endrizalová, Peter Vittek Peter Vittek	Z,ZK	4	2P+2C+14B	B L	Z
21LIVO	Human Performance and Limitations	Z,ZK	5	2P+2C+14B	B L	Z
210BP	Air Transport Business Eva Endrizalová, Peter Vittek	Z,ZK	3	2P+1C+12B	L	Z
21PAP	Flight Planning and Performance Ladislav Capoušek Anna Polánecká (Gar.)	Z,ZK	4	2P+2C+14B	L	Z
21LAG2	English for Aviation 1	KZ	3	0P+2C+10B	B L	Z
21PJE	Aircraft Instruments	KZ	2	2P+0C+8B	B L	Z
21RILP	Air Traffic Control	Z	2	0P+2C+8B	B L	Z

Characteristics of the courses of this group of Study Plan: Code=6.S.BLED 17/18 Name=6.sem.LED bak.prez. 17/18

21ELED Air Transport Economy The economics of air transport is a key subject for understanding market relations in air transport. The introduction is devoted to understanding the basic economic principles. This is

followed by a practical section that economic linkages in the domain of airlines.

Human Performance and Limitations Z,ZK Human performace & amp; limitations, aptibility & amp; competence, accident statistics, flight safety, basics of flight physiology, man & amp; environment, breathing & amp; circulation, sensory system, health & amp; hygiene, health preservation, intoxication, incapacitation, basics of flight psychology, human information processing, memory & amp; learning, theory & model of human error, body rhythms & sleep, stress, fatigue, working methods.

210BP Z,ZK Air Transport Business

Aviation business and transport operations is a core subject for understanding operational relationships in air transport. It focuses on the process and functional arrangements as well as the economic aspects and infrastructure of air transport.

21PAP Flight Planning and Performance Z,ZK

Mass and balance. Load of aircraft. Determination of centre of gravity - loadsheet, trimsheet. Aircraft weighing. Overloading of aircraft. Basic characteristic speeds. Runway characteristics. Take off and landing performance. Drift down. ETOPS. MEL. Flight planning and monitoring. Routing. FL and speeds selection. Charts. ICAO ATC FPL. Aerodrom operation minimums. Fuel plan. Operational flight plan.

21LAG2 English for Aviation 1 21PJE Aircraft Instruments 2

Overview of aircraft instrumentation and its principles and construction, aircraft electrical systems, engine measuring and monitoring systems, air data computer, icing monitoring systems, gyroscopic indicators, inertial and radio navigation means, communication means, data recorders, complex flight and navigation data processing systems

21RILP Air Traffic Control Air traffic services and their distribution. Organization of air traffic, flow and capacity management. Airspace management. System support for aircraft flying through space. Flight plan,

the form, content. Separation of aircraft. Reports of air traffic services, the form, content. Harmonization and integration of ATC. CFMU and its subsystems. Flexible use of airspace FUA. RVSM, RNP. New trends in the area of ATC

Name of the block: Semestrální projekt Minimal number of credits of the block: 6

The role of the block: ZP

21LIVO

Code of the group: XB 4,5,6 13/14

Name of the group: Projekty bak. 4.5.6.sem. (od)13/14 - pro B3710

Requirement credits in the group: In this group you have to gain 6 credits

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

Credits in the group: 6 Note on the group

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11X31	Project 1	Z	2	0P+1C	L	ZP
12X31	Project 1	Z	2	0P+1C	L	ZP
14X31	Project 1	Z	2	0P+1C	L	ZP
15X31	Project 1	Z	2	0P+1C	L	ZP
16X31	Project 1	Z	2	0P+1C	L	ZP
17X31	Project 1 Vít Janoš, Michal Drábek, Zden k Michl, Milan K íž, Rudolf Vávra, Alena Rybi ková, Denisa Mocková, Dušan Teichmann, Roman Št rba, Václav Baroch (Gar.)	Z	2	0P+1C	L	ZP
18X31	Project 1	Z	2	0P+1C	L	ZP
20X31	Project 1 Ji i R ži ka	Z	2	0P+1C	L	ZP
21X31	Project 1 Jakub Hospodka, Peter Vittek, Jakub Kraus, Andrej Lališ, Slobodan Stoji, Lenka Hanáková, Terézia Pilmannová, Natalia Guskova, Kate ina Grötschelová,	Z	2	0P+1C	L	ZP
22X31	Project 1	Z	2	0P+1C	L	ZP
23X31	Project 1 Milena Macková	Z	2	0P+1C	L	ZP
11X32	Project 2	Z	2	0P+2C	Z	ΖP
12X32	Project 2	Z	2	0P+2C	Z	ZP
14X32	Project 2 Jana Kaliková, Jan Kr ál	Z	2	0P+2C	Z	ZP
15X32	Project 2	Z	2	0P+2C	Z	ZP
16X32	Project 2 Petr Bouchner, Tereza Kunclová	Z	2	0P+2C	Z	ZP
17X32	Project 2 Vít Janoš, Michal Drábek, Zden k Michl, Milan K íž, Rudolf Vávra, Alena Rybi ková, Denisa Mocková, Dušan Teichmann, Andrea Hrní ková,	Z	2	0P+2C	Z	ZP

2	Z	2	0P+2C	Z	ZP
2	Z	2	0P+2C	Z	ZP
2 podka, Eva Endrizalová, Peter Vittek, Jakub Kraus, Andrej Lališ, Stoji , Lenka Hanáková, Terézia Pilmannová, Natalia Guskova,	Z	2	0P+2C	Z	ZP
2	Z	2	0P+2C	Z	ZP
2	Z	2	0P+2C	Z	ZP
3	Z	2	0P+1C	L	ZP
3 o árková, Josef Kocourek, Tomáš Pad lek	Z	2	0P+1C	L	ZP
3 ová, Jan Kr ál	Z	2	0P+1C	L	ZP
3	Z	2	0P+1C	L	ZP
3	Z	2	0P+1C	L	ZP
3 Michal Drábek, Zden k Michl, Milan K íž, Rudolf Vávra, Alena Denisa Mocková, Dušan Teichmann, Roman Št rba, Václav ar.)	Z	2	0P+1C	L	ZP
3	Z	2	0P+1C	L	ZP
3	Z	2	0P+1C	L	ZP
3 iš, Slobodan Stoji , Lenka Hanáková, Terézia Pilmannová, Lukáš ta Kameníková, Milan Kameník, Marek Šudoma, Viktor Valenta,	Z	2	0P+1C	L	ZP
3	Z	2	0P+1C	L	ZP
3	Z	2	0P+1C	1	ZP
	2 2 2 2 2 2 2 2 2 2 3 3 3 3 3 3 3 3 4 4 4 5 4 5 5 6 7 7 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Z Z Ppodka, Eva Endrizalová, Peter Vittek, Jakub Kraus, Andrej Lališ, Stoji , Lenka Hanáková, Terézia Pilmannová, Natalia Guskova, Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z	Z 2 podka, Eva Endrizalová, Peter Vittek, Jakub Kraus, Andrej Lališ, Stoji , Lenka Hanáková, Terézia Pilmannová, Natalia Guskova, Z 2 A 2 A 2 A 3 D 2 A 4 D 3 D 3 D 3 D 4 D 4 D 5 D 6 D 7 D 7 D 7 D 7 D 7 D 7 D 7	Z 2 0P+2C	Z 2 0P+2C Z 2 podka, Eva Endrizalová, Peter Vittek, Jakub Kraus, Andrej Lališ, Stoji , Lenka Hanáková, Terézia Pilmannová, Natalia Guskova, Z 2 0P+2C Z 2 2 0P+2C Z 2 0P+2C Z 2 0P+1C L 3 2 0P+1C L 3 3 Z 2 0P+1C L 3 4 Z 2 0P+1C L 3 5 Z 2 0P+1C L 3 6 Z 2 0P+1C L 3 7 Z 2 0P+1C L 4 8 Z 2 0P+1C L 5 3 Z 2 0P+1C L 5 3 Z 2 0P+1C L 5 4 Z 2 0P+1C L 5 5 Z 2 0P+1C L 6 5 Z 2 0P+1C L 7 5 Z 2 0P+1C L 8 5 Z 2 0P+1C L 8 6 Z 2 0P+1C L 8 7 Z 2 0P+1C L 8 7 Z 2 0P+1C L 8 8 Z 2 0P+1C L 8 9 Z 2 0P+1C L 8 9 Z 2 0P+1C L 8 0 Z 2 0P+1C L 8 1 Z 2 0P+1C L 8 1 Z 2 0P+1C L 8 2 2 0P+1C L 8 1 Z 2 0P+1C L 8 2 2 0P+1C L 8 1 Z 2 0P+1C L 8 2 2 0P+1C L 8 2 2 0P+1C L

Characteristics of the courses of this group of Study Plan: Code=XB 4,5,6 13/14 Name=Projekty bak. 4.5.6.sem. (od)13/14 - pro B3710

onal actoriot	ilos of the courses of this group of clady flam. code=75 4,0,0 for 14 flame=	i rojonty bant motologim (oaj toj im	P. 0 B07 10
11X31	Project 1	Z	2
12X31	Project 1	Z	2
14X31	Project 1	Z	2
15X31	Project 1	Z	2
16X31	Project 1	Z	2
17X31	Project 1	Z	2
18X31	Project 1	Z	2
20X31	Project 1	Z	2
21X31	Project 1	Z	2
22X31	Project 1	Z	2
23X31	Project 1	Z	2
11X32	Project 2	Z	2
12X32	Project 2	Z	2
14X32	Project 2	Z	2
15X32	Project 2	Z	2
16X32	Project 2	Z	2
17X32	Project 2	Z	2
18X32	Project 2	Z	2
20X32	Project 2	Z	2
21X32	Project 2	Z	2
22X32	Project 2	Z	2
23X32	Project 2	Z	2
11X33	Project 3	Z	2
12X33	Project 3	Z	2
14X33	Project 3	Z	2
15X33	Project 3	Z	2
16X33	Project 3	Z	2
17X33	Project 3	Z	2
18X33	Project 3	Z	2
20X33	Project 3	Z	2
21X33	Project 3	Z	2
22X33	Project 3	Z	2
23X33	Project 3	Z	2

Name of the block: Compulsory elective courses Minimal number of credits of the block: 6

The role of the block: PV

Code of the group: Y1-BLED 18/19

Name of the group: PVP bak.prez.LED 18/19

Requirement credits in the group: In this group you have to gain 6 credits

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

Credits in the group: 6
Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
20Y1AF	Alternative Forms of Transportation Project Financing Mária Jánešová	KZ	2	2P+0C	Z	PV
18Y1AM	Anatomy, Mobility and Safety of Man Jitka Jírová	KZ	2	2P+0C	Z	PV
14Y1AV	Animation and Visualization	KZ	2	2P+0C	L	PV
20Y1AE	Applied Electronics	KZ	2	2P+0C	Z	PV
14Y1BE	Barrierless Transport Jan Kr ál	KZ	2	2P+0C	L	PV
21Y1BC	Aviation safety and security Andrej Lališ, Natalia Guskova, Kate ina Grötschelová Andrej Lališ	KZ	2	2P+0C	L	PV
15Y1BO	Work Safety and Health Protection in Transportation Eva Rezlerová, Petr Musil	KZ	2	2P+0C	L	PV
21Y1BS	Unmanned aircraft systems 1 Tomáš Tlu ho , Michal erný	KZ	2	2P+0C	L	PV
14Y1BM	Biometric Methods	KZ	2	2P+0C	Z	PV
23Y1DZ	Data and Their Processing for Engineering Fields Needs	KZ	2	2P+0C	Z	PV
15Y1DZ	History of Railway Eva Rezlerová, Martin Jacura	KZ	2	2P+0C	L	PV
12Y1DS	Project Documentation in Practice	KZ	2	2P+0C	Z	PV
20Y1EK	Qualification in Electrical Engineering	KZ	2	2P+0C	L	PV
16Y1EN	Energy Requirements of Vehicles	KZ	2	2P+0C	L	PV
20Y1EA	Environmental Aspects of Transport	KZ	2	2P+0C	Z	PV
15Y1EH	European Integration within Historical Context	KZ	2	2P+0C	Z	PV
18Y1EM	Experimental Methods in Mechanics Daniel Kytý	KZ	2	2P+0C	z	PV
21Y1FN	Factors Affecting the Rate of Accidents in Aviation	KZ	2	2+0	Z	PV
15Y1FD	French Area Studies and Transportation	KZ	2	2P+0C	L	PV
14Y1HW	Computer Hardware	KZ	2	2P+0C	L	PV
15Y1HL	History of Civil Aviation Eva Rezlerová, Vladimír Plos	KZ	2	2P+0C	L,Z	PV
15Y1HD	History of City Mass Transport Eva Rezlerová, Milan Dont	KZ	2	2P+0C	Z	PV
12Y1HD	Traffic Noise Dagmar Ko árková, Libor Ládyš	KZ	2	2P+0C	L	PV
15Y1HE	Work Hygiene and Ergonomics in Traffic Eva Rezlerová, Petr Musil	KZ	2	2P+0C	Z	PV
16Y1IS	Interactive simulators and simulations	KZ	2	2P+0C	L	PV
12Y1KN	Combined Transportation Petr Nejedlý	KZ	2	2P+0C	Z	PV
23Y1KO	Quantum Physics and Optoelectronics	KZ	2	2P+0C	L	PV
21Y1LA	Aerobatics	KZ	2	2+0	L	PV
21Y1LR	Radio Technology in Aviation	KZ	2	2+0	L	PV
17Y1LL	Logistics of Passenger and Freight Air Transport Petra Skolilová Petra Skolilová (Gar.)	KZ	2	2P+0C	L	PV
20Y1LN	Location and Navigation	KZ	2	2P+0C	L	PV
21Y1MZ	Managerial Ethics	KZ	2	2+0	Z	PV
17Y1MD	Marketing in Transportation	KZ	2	2P+0C	Z	PV
11Y1MM	Mathematical Models in Economy	KZ	2	2P+0C	Z	PV
18Y1MT	Engineering Materials Jaroslav Valach	KZ	2	2P+0C	L	PV
21Y1MP	Matlab for project-oriented study Vladimír Socha	KZ	2	2P+0C	Z	PV

14Y1MP	Modeling Complex Assemblies and Models in Parametric Modeller	KZ	2	2P+0C	Z	PV
15Y1MK	Modern History in Context: Every Day Life and Transport Eva Rezlerová, Marie Michlová	KZ	2	2P+0C	L	PV
15Y1NE	German in the Economy and Society	KZ	2	2P+0C	Z	PV
23Y1OK	Protection of Critical Objects and Infrastructures	KZ	2	2P+0C	┙	PV
20Y1OI	Fare Collection and Information Systems Patrik Horaž ovský, Milan Sliacky Milan Sliacky (Gar.)	KZ	2	2P+0C	L	PV
14Y1OP	Operating System	KZ	2	2P+0C	Z	PV
17Y1OF	Personal Finance	KZ	2	2P+0C	Z	PV
11Y1PV	Parametrical and Multicriterial Programming Olga Vraštilová	KZ	2	2P+0C	Z	PV
17Y1PM	Personnel Management	KZ	2	2P+0C	L	PV
12Y1PC	Pedestrian and Cycling Transport Denis Liutov	KZ	2	2P+0C	L	PV
14Y1PG	Computer Graphics	KZ	2	2P+0C	L	PV
14Y1P2	Computer Aid of Transportation Projecting 2	KZ	2	2P+0C	Z	PV
18Y1PS	Computer Simulations in Mechanics Petr Zlámal	KZ	2	2P+0C	L	PV
14Y1PI	Corporate Information System	KZ	2	2P+0C	Z	PV
14Y1PZ	Advanced Data Processing in Spreadsheets	KZ	2	2P+0C	Z	PV
12Y1PD	Assessment of Transport Structures	KZ	2	2P+0C	Z	PV
20Y1PK	Product Quality Management Processes Martin Leso	KZ	2	2P+0C	Z	PV
14Y1PJ	C Programming Language	KZ	2	2P+0C	Z	PV
12Y1C1	Designing Roads in Civil 3D I Tomáš Honc	KZ	2	2P+0C	L	PV
12Y1C2	Designing Roads in Civil 3D II Tomáš Honc	KZ	2	2P+0C	Z	PV
14Y1PA	3D Modeling in AutoCAD	KZ	2	2P+0C	Z	PV
16Y1PV	Operation, Construction and Maintenance of Vehicles	KZ	2	2P+0C	L	PV
12Y1PU	Organization Disposition of Railway Stations	KZ	2	2P+0C	L	PV
16Y1RE	Control and Electronic Vehicle Systems Josef Mik, P emysl Toman	KZ	2	2P+0C	Z	PV
21Y1RZ	Human Resources Management	KZ	2	2P+0C	L	PV
17Y1ST	Titan Simulation	KZ	2	2P+0C	┙	PV
20Y1SC	Sensors and Actuators	KZ	2	2P+0C	L	PV
17Y1SL	Sociology of Human Resources	KZ	2	2P+0C	Z	PV
11Y1SI	Transportation Software Engineering Martin P ni ka	KZ	2	2P+0C	Z	PV
22Y1SZ	Forensic Expertise	KZ	2	2P+0C	L	PV
16Y1KS	Quality and Reliability of Vehicles Jaroslav Machan, David Lehet	KZ	2	2P+0C	Z	PV
12Y1SU	Road Management and Maintenance Dagmar Ko árková, Otakar Vacín	KZ	2	2P+0C	L	PV
21Y1TH	Aircraft Technical Handling Peter Olexa	KZ	2	2P+0C	Z	PV
11Y1TG	Graph Theory Lucie Kárná Lucie Kárná (Gar.)	KZ	2	2P+0C	L	PV
14Y1TI	Creating Interactive Internet Applications	KZ	2	2P+0C	L	PV
21Y1UT	Airports Maintenance	KZ	2	2+0	L	PV
14Y1UP	Editing of Theses in MS Word	KZ	2	2P+0C	L	PV
18Y1UK	Introduction of Rail Vehicles Jitka ezní ková, Josef Kolá	KZ	2	2P+0C	L	PV
12Y1VC	Waterways and Shipping	KZ	2	2P+0C	Z	PV
23Y1VS	Negotiation and Cooperation Milena Macková	KZ	2	2P+0C	Z	PV
14Y1VM	Development of Applications for Mobile Devices	KZ	2	2P+0C	Z	PV
16Y1VT	Development in Railroad Vehicles	KZ	2	2P+0C	L	PV
14Y1W1	Webdesign 1	KZ	2	2P+0C	Z	PV
14Y1W2	Webdesign 2	KZ	2	2P+0C	L	PV
16Y1ZG	Introduction into Applied Computer Graphics	KZ	2	2P+0C	L	PV
14Y1ZM	Fundamentals of parametric and adaptive modeling	KZ	2	2P+0C	L	PV

11Y1ZM	Foundation of MATLAB Programming Šárka Vorá ová Šárka Vorá ová Sárka Vorá ová (Gar.)	KZ	2	2P+0C	L	PV
12Y1ZU	Principles of Urbanism	KZ	2	2P+0C	Z	PV
15Y1ZV	Karel Hájek East-West dichotomy: Prelude to the Cold War Eva Rezlerová, Marie Michlová	KZ	2	2P+0C	Z	PV
16Y1ZL	Vehicle Testing, Legislation and Construction Zuzana Radová, Josef Mík	KZ	2	2P+0C	Z	PV
Characteristics of the	e courses of this group of Study Plan: Code=Y1-BLED 18/19 Na	me=PVP bak	c.prez.LE	ED 18/19		
	ernative Forms of Transportation Project Financing		p. v==-		ΚZ	2
	ns of financing in transportation and telecomunications, where the public sector body pe	erform the final de	ebtor. i. e. d			
	et participant of the transaction and it is not the counterparty of the financial institute whi					
of transportation and telecor		on provided the r	arranig. 1000	ao or occurrino	o ao an an	ornative deares
· · · · · · · · · · · · · · · · · · ·	• • •					
	atomy, Mobility and Safety of Man			I	<z td="" <=""><td>2</td></z>	2
	al structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical s					
	lar-skeletal system. Injury of human organs and musculo-skeletal system during traffic	accidents. Mobili	ty of ill and	injured man a	and his trea	atment. Human
joint prostheses. Protective	means and traffic safety regulations.					
14Y1AV An	imation and Visualization				<z td="" <=""><td>2</td></z>	2
Advanced modifications and	modeling of NURBS, Patch objects, selection of objects (according to filter and properti	ies). 3D Studio M	AX systems	and Space V	Varp objec	ts. Atmospheric
and other effects, rendering	filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and ani	mation, bone for	mation, anir	mation using l	nverse Kir	nematics.
20Y1AE An	plied Electronics			ŀ	۲Z	2
	ctor components, their principles, characteristics and typical connection diagrams. Sem	iconductor PN ju	nction diode	es, transistors	thyristor,	operational
	Functions of basic electronic circuits and methods for their designs (rectifiers, voltage	=			-	= '-
amplifier as an inverting and						, -1
	urrierless Transport				ΚΖ	2
	essible public transportation in terms of architectural barriers and also for transportation-	toohnological no	nt of vious C	1		· -
	·	• .		•		ŭ
	pads, railway stations, public transport stops, terminal buildings, vehicles, public transport	i, iriiorriation and	onemation	systems and	панърона	tion technology.
	e supplemented by practical examples.			<u> </u>	/7	
· · · · · · · · · · · · · · · · · · ·	iation safety and security			1 -	(Z	2
	y development in aviation. Modern tools for safety and security management. Research	n and developme	nt of safe a			
	ork Safety and Health Protection in Transportation			1 -	<z td="" <=""><td>2</td></z>	2
-	inition of terms, risks and possible health damage, working conditions and health prote	ection with focus of	on transpor	tation. Health	protection	programmes,
	nd foreign business trips, statistics, working practice.					
21Y1BS Ur	nmanned aircraft systems 1			ŀ	<z< td=""><td>2</td></z<>	2
Unmanned Aviation Develor	oment. Aircraft design. Legislation in force in the Czech Republic. Planning and execution	on of the flight. Ai	rspace divis	sion. Operatio	nal risks a	nd operational
procedures. Practical flights.						
14Y1BM Bio	ometric Methods			ŀ	۲Z	2
Basic biometric terms, author	entication methods, principles and performance measurement of biometric systems, ov	erview of biometi	ric technolo	gies, hand ge	ometry, iri:	s recognition,
retina recognition method, 2	D and 3D face recognition, vein patterns on the wrist, ear biometrics, fingerprint recogn	nition, skin spectr	oscopy, bel	havioral meth	ods, the us	se of biometrics
in transport applications, sat	fety and risks of biometric technologies.					
23Y1DZ Da	ata and Their Processing for Engineering Fields Needs			ŀ	۲Z	2
	, data collection, data sets, data random uncertainty and data epistemic uncertainty, da	ata processing, h	azard, risk,	value scales,	analytical,	, empirical and
heuristic methods, hazard d	etermination and risk determination, methods for variants' creation, decision support s	ystems.				
15Y1DZ His	story of Railway			l l	ΚZ	2
-	n railways, railway network development in the 2nd half of 19th century, regional railway	vs epoch, railway	s of the "Fir			
	lopment in the 2nd half of 20th century, high-speed railway origins, railway lines closing, i					
	nctions. Excursions and projections.	,		,		,
	oject Documentation in Practice				ΚΖ	2
	ting. Project documentation types. Support materials for project documentation creating	Building permit	obtaining p	1	I	
creation of some project dod		,. Dananig poinin	021ag p		or and prio	mig. i idolodi
	ualification in Electrical Engineering			L	ΚZ	2
	easurements in laboratories, electrical equipment, power supply, electrical installation of	of low voltage, ele	ctric shock	1		
·	currents, electrical equipment protection against short circuit and overload protection, c	_		=		-
-	ety and electrical engineering.	ormorana revisio	ii, iiist ala,	regisiation, se	ariaaras ar	ia regulations
				1	ΚZ	2
	ergy Requirements of Vehicles ertial of the vehicles. Types of energy - kinetic, static, heat, chemical and others. Ways	of anaray ahana	into kinotic	I		
	ine. Energy accumulation means, accumulator, flywheel, fuel cell. Energy recuperation.		into kinetic	cenergy. Con	ibustion ei	igine, electric
		vvi vv analysis.		1	ΚZ	2
	ivironmental Aspects of Transport	acting data cooin	ailation pro	1	ı	· -
•	ather observation network, weather in transportation, road meteorology. Weather foreca and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon	_	-			
		cycle, a role or el	lergy and ti			
	ropean Integration within Historical Context			1 -	(Z	2
	of new states. Europe and the powers, League of Nations. European policy in the 192					-
	petting to power, system of bilateral agreements. Decline of the LN. Rearrangement of p	owers during vvv	VII. Cold wa	ar and its con	sequences	s for Europe.
	nan relationship - a driving power of starting European integration.			1 .	/7	
	perimental Methods in Mechanics				<z td="" <=""><td>2</td></z>	2
	perimental mechanics. Sensors for mechanical testing. Overview of experimental method				-	_
	d sample preparation. Tensile and bending tests. Electrical resistance strain gages. Op	tical based strain	measurem	ent. Fatigue a	ına iitetime	prediction.
	ng. Introduction to electron microscopy. Errors in measurement.			1		
'	ctors Affecting the Rate of Accidents in Aviation				KZ	2
· ·	nternational and national organizations in civil aviation. The scope of the investigation of	-				=
and interpretation of ICAO A	Annexes 13 and 19. Analysis and interpretation of the Regulation (EC), Regulation (EU)	. Human factor. U	Jtilization of	f information f	rom the in	vestigation
reports.						

15Y1FD	French Area Studies and Transportation	KZ	2
	regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air tr	1 1	erminology.
French society and cult	ure. Current political system. System of education, studying in France. Selected authors of French literature. French gastrono	my.	
14Y1HW	Computer Hardware	KZ	2
Computer architecture,	basics of logical circuits design and their realization using FPGA. In detail, description of computer architecture and separate	parts designing -	controllers,
arithmetic and logical u	nits, I/O subsystem.		
15Y1HL	History of Civil Aviation	KZ	2
Beginnings of flying, de	velopment of aircrafts lighter than air. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development	of airports in the C	Zech Republic.
World airports. Famous	$aviators. \ Helicopters. \ CSA \ airplanes. \ Development \ of \ aircrafts \ in \ Czechoslovakia \ between \ the \ years \ 1945-1989. \ Classic \ era$	of aviation. Golde	n era of civil
	civil aviation. Airline companies. Supersonic flying.		
15Y1HD	History of City Mass Transport	KZ	2
1	nsport in the world, development of tram, bus and trolley-bus systems. History of transport networks in the world, current tren		ents of tariff and
clearance systems. His	ory of city transport in Prague and Brno. History of tram, bus and trolley-bus operation systems in the Czech Republic and S	lovakia.	
12Y1HD	Traffic Noise	KZ	2
Acoustic introduction, b	asic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regula	tions. Creation acc	oustic climate in
1 ' '	n acoustic, noise transmission, soundproofing. Types of noise sources in area. Determination of acoustic situation in the area	of interest. Metho	dology of
	ement of transport noise. Acoustic studies, measuring protocol.		
15Y1HE	Work Hygiene and Ergonomics in Traffic	KZ	2
_	upational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of thes		
	of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technology to	o possibilities and	skills of a man.
	n the field of transportation; relevant legislature.		
16Y1IS	Interactive simulators and simulations	KZ	2
	pplication of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical m		methods.
	rnamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation software simulation software and interactive simulation software simulation software simulation software simulation simulation software simulation software simulation simul		
12Y1KN	Combined Transportation	KZ	2
Combined transport str	ategy and legislation. Load units. Means of transport in combined transport. Combined transport systems. Transshipping area	s. Multimodal logi	stic centres.
23Y1KO	Quantum Physics and Optoelectronics	KZ	2
Ground of quantum phy	sics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics components.		
21Y1LA	Aerobatics	KZ	2
Methodology of flying a	erobatic figures. Aerodynamics and flight mechanics of aerobatic figures. Aerobatic training syllabi and aerobatic competitions	. Creating an aero	batic sequence.
Safety in aerobatics, ac	cidents related to aerobatics. Physiological aspects of flying aerobatics. Aircraft structure loads and construction fatigue strer	ngth of aerobatic a	ircraft. Upset
recovery training (UPR	r) for commercial pilots and related accidents.		
21Y1LR	Radio Technology in Aviation	KZ	2
Electric signals and the	wave spectrum. Analog and digital modulations. Noises. Filters. Resonance circuits. Electromagnetic field. Electromagnetic v	vave propagation.	Wave ranges
	d reception of electromagnetic field. Antennas in aviation, receivers and transmitters.		
17Y1LL	Logistics of Passenger and Freight Air Transport	KZ	2
Logistics airline passen	ger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial t	ransport process	passengers and
	ystems in air transport. Global distribution systems.		
20Y1LN	Location and Navigation	KZ	2
1 '	es of road networks, localization on the network. Routing algorithms, their properties and implementation. Description and ex	camples of datase	ts for finding
transport connections,	outing algorithms, their properties and implementation.		
21Y1MZ	Managerial Ethics	KZ	2
The basic terminology of	f managerial ethics. Basics of etiquette and rules of social contact. Social events. Etiquette of working contacts. The art of pres	entation and nego	tiation. Personal
image. Diplomatic proto	col. Managerial ethics. Business ethics.		
17Y1MD	Marketing in Transportation	KZ	2
General principles of m	arketing applied to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transpo	rt and the resulting	g differences in
the application of market	sting.		
11Y1MM	Mathematical Models in Economy	KZ	2
The goal of the course	s to teach selected methods of linear programming, with theoretical procedures applicable for individual tasks and their prog	ram implementation	on. The outcom
of the course is the abil	ity to implement and solve basic tasks from the queue theory, graph theory and both free and constrained optimization.		
18Y1MT	Engineering Materials	KZ	2
Systematic overview of	main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers	and composites, a	attention is paid
to biological materials a	nd to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's selectio	n charts.	
21Y1MP	Matlab for project-oriented study	KZ	2
The subject's syllabus i	s focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exerci	ses will be prepare	ed according to
particular examples, ba	sed on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improvem	ent of students' M	latlab skills.
14Y1MP	Modeling Complex Assemblies and Models in Parametric Modeller	KZ	2
Assemblies programmi	g - tools and methodology of working subassemblies and assemblies, sheet metal parts modelling, welded assemblies, pipe	lines, and distribu	ition lines.
Photorealistic output re	ndering - physical and material properties, lighting sources. MKP - visual example.		
15Y1MK	Modern History in Context: Every Day Life and Transport	KZ	2
Historical overview of m	odern history of every day life, science, technology and transport in a wider context.		
15Y1NE			
	German in the Economy and Society	KZ	2
		1 1	
selected topics.	German in the Economy and Society	1 1	
selected topics.	German in the Economy and Society	1 1	
23Y1OK	German in the Economy and Society ocial issues of German speaking countries and of the EU. Reading and listening of texts. Lexical, grammatical and semantic	analysis of texts.	Discussion on
23Y1OK	German in the Economy and Society ocial issues of German speaking countries and of the EU. Reading and listening of texts. Lexical, grammatical and semantic Protection of Critical Objects and Infrastructures	analysis of texts.	Discussion on
23Y1OK Types of technological s	German in the Economy and Society ocial issues of German speaking countries and of the EU. Reading and listening of texts. Lexical, grammatical and semantic Protection of Critical Objects and Infrastructures	analysis of texts.	Discussion on
23Y1OK Types of technological s infrastructures. 20Y1OI	German in the Economy and Society ocial issues of German speaking countries and of the EU. Reading and listening of texts. Lexical, grammatical and semantic Protection of Critical Objects and Infrastructures systems, critical item, risks and their courses, criticality, vulnerability, connectivity, dependability, resilience, failure, protection, s	analysis of texts. KZ safety of critical ob	Discussion on 2 jects and critical

14Y1OP	Operating System	KZ	2
	n GNU/Linux OS. X-window system. Rights management - users and groups, ACL rights. Filesystems and attributes. Program		
	programs / commands. Config files. SW management, package systems. Programs in graphic shell - text, spreadsheet, graphs management. Safe and secure configuration of OS. Remote administration.	onic editors, sound	a, video and
17Y1OF	Personal Finance	KZ	2
Personal finance (budge	et, financing of basic living needs), debt (loans and credits, payment instruments, interest and fees, debt trap), financing of ho	ı Dusing (rent, mort	gage, savings,
	cing), savings and investments (investment horizon, return, risk, investment strategy), insurance (insurance types, suitability a	nd adequacy), se	curing the future
(retirement savings and	·	1/7	
11Y1PV	Parametrical and Multicriterial Programming of linear programming with a parameter in objective function, on right sides and in the matrix of coeficients of linear constraints	KZ Computation of a	2
17Y1PM	Personnel Management	KZ	2
	roup, man as personality, planning, choice, evaluation and education of human sources, work adaptation, teamwork, intercul		
12Y1PC	Pedestrian and Cycling Transport	KZ	2
· ·	Pedestrian crossings. Modifications for blind, dim-sighted and disabled people. Design of cycle routes network. Ways of cycle routes		
	of cyclists from other transport modes. Cycle tracks and its design - one way streets, reserved traffic lanes, bus stops, crossing and road marking for cyclists.	igs with other tran	isport modes,
14Y1PG	Computer Graphics	KZ	2
-	c and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with ed	l l	
	s, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics cards.		
14Y1P2	Computer Aid of Transportation Projecting 2	KZ	2
	ation for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting,		
modification (attributes, section). Basics of 3D m	relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic trans nodelling	ition curve, cross-	and longitudinal
18Y1PS	Computer Simulations in Mechanics	KZ	2
	of tools for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model develop	·	ion of geometry
•	s. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary conditions	and application of	f the load. Basic
1	nodal analysis. Introduction to complex nonlinear problems.	V7	
14Y1PI Data-information-knowle	Corporate Information System edge, components of information system, syntatic and semantic sense of data, structure of corporate information system, pa	KZ	2 n system
	n, storage, etc.), corporate information politic and information control, risks of information system operation, legal environmer		-
state information system	n, information system security, data protection, safety politics.		
14Y1PZ	Advanced Data Processing in Spreadsheets	KZ	2
	with principles of working in a spreadsheet. Graphic layout of the table appearance, formatting of numbers, insertion of form ion. Working with large spreadsheets, filters, advanced filters, database functions. Pivot tables and charts, conditional formattin		- 1
-	s and questions from various companies and training.	g, solution inding	, solver, macros,
12Y1PD	Assessment of Transport Structures	KZ	2
Assessment of transport	structures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibilities	s of its protection	and assessment
•	the landscape. Rating fragmentation and landscape connectivity in the preparation of linear structures. Practical examples of	assessment of tra	affic buildings on
the environment. 20Y1PK	Product Quality Management Processes	KZ	2
	Product Quality Management Processes ganization management. Management systems and international standards; quality management systems. Quality products,	·	_
	management, management principles. Principles of process management, monitoring and measurement systems management		
for systems managemer	nt. Process management principles. Metrology and testing. Product certification.		
14Y1PJ	C Programming Language	KZ	2
	e. Preprocessor, basics of the C language (data types, syntax, commands), functions, pointes, dynamical memory allocation, stract data types (FIFO, LIFO, list), programming techniques (sorting, searching, recursion), using bitwise oprerators.	string, files, structi	ures and unions.
12Y1C1	Designing Roads in Civil 3D I	KZ	2
- 1	to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go throu		
	, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The	e course also inc	ludes a basic
·	building design in the real-life profession.	1/7	
12Y1C2	Designing Roads in Civil 3D II the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go throu	KZ	2 locian of this
	, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. Th	•	•
improved and developed	d. Students learn to design intersections.		
14Y1PA	3D Modeling in AutoCAD	KZ	2
•	tric modeller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup creation, objects	ct data creation, w	vork with data
16Y1PV	database. Basic definition of work with lights, materials and reflexes. Models presentation. Operation, Construction and Maintenance of Vehicles	KZ	2
,	uction. Vehicle maintenance. Vehicle diagnostics. Maintenence and repair plans. Engine maintenance and emission measure		_
General principles of en			
12Y1PU	Organization Disposition of Railway Stations	KZ	2
_	senger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zo		ation yards.
16Y1RE	ology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic railway no Control and Electronic Vehicle Systems	KZ	2
	regulation. Tools for analytical solution, linear system description. Basic types of a regulator (PID), properties, advantages, disa		
	Electric drive. Vehicle communication bus (CAN, LIN, FlexRay, ISObus, KWP2000 protocole etc.). Vehicle electronic control,		
comfort systems.			
21Y1RZ	Human Resources Management	KZ	2
•	esources in the organization and related disciplines file. Substance, importance and challenges of human resources manage esource management. Human resource planning. Search, recruitment and selection of employees. Motivation, evaluation and		
	cies of employees. Education of employees. Planning career management.		

	an Simulation	KZ	2
	e simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same produ		-
	capacity of production, plan budgets for marketing, research and development. They become familiar with the consequer as and they use this information for other business decisions.	nces of their decis	ions by the form
	nsors and Actuators	KZ	2
	uators. Basics of measuring theory and actuating influence. The respective technologies and construction principles. Sensor		
•), chemical and particle flow values. Electrical, pneumatic and hydraulic actuators and solid phase elements.		,
17Y1SL Soc	ciology of Human Resources	KZ	2
'	mportance, work group as a special kind of social group, communication, personal management, modern management, h	numan resources	olanning, culture
of the organization.			
11Y1SI Tra	Insportation Software Engineering	KZ	2
•	ngineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and imple	mentation using fo	rmal techniques
and practical usuage.			
	rensic Expertise	KZ	. 2
	ic engineering, forensic activity, current legislature in the Czech Republic, different disciplines, notion of forensic, forensi roofs, forensic methodology. Notion of the evidence, general principles of evidence obtaining, metrology, protocol, evide	_	
	ndors, foreitsic methodology. Notion of the evidence, general principles of evidence obtaining, methology, protocol, evide nding, expert testimony / report.	inces conection, si	te inspection,
	ality and Reliability of Vehicles	KZ	2
	in design, development, production and operation of vehicles. Definition and possible approach to quality and reliability.		
	QFD (Quality Function Deployment), DFx (Design for Assamly, Manufacturying, Quality, Services) and other methods		•
Knowledge-based systems o	of quality and reliability, data collection.		
12Y1SU Roa	ad Management and Maintenance	KZ	2
Getting familiar with ownersh	nip of roads in the Czech Republic and the administration of the road at the state and county level. It is presented develo	pment of road ne	twork, short,
_	egy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and re	pair methods are	discussed in the
	nent activity in highway engineering.		
	craft Technical Handling	KZ	2
	ractors. GPU. Air conditioning and heating units. Aircraft fuel equipment. De-acing and anti-icing units. Loading and unlo		ment for
	offboarding. Operational processes of aircraft technical handling and regulations. Modernization and technical progress		
	aph Theory	KZ	2
	ogy of graph theory, graph representation. Problems of graph theory, problem instance. Graph search algorithms, trees,	= -	-
	bipartite graph matching, flow networks, circulations, critical path method, traveling salesman problem. Problem of existend nal complexity, dealing with NP-complete problems, heuristic approach.	ce and optimizatio	ir and algorithms
	eating Interactive Internet Applications	KZ	2
	uage PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions.	1	_
in PHP language.			1 13 11
21Y1UT Air	ports Maintenance	KZ	2
	e. Summer maintenance equipment. Winter airport maintenance. Winter maintenance equipment. De-icing / anti-icing of		anti-icing liquid.
Operating procedures, limitat	tions, practices.		
14Y1UP Edi	iting of Theses in MS Word	KZ	2
	o the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, cre		
figures, tables, graphs, etc. F	Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless		
		s editing dissertati	ons and theses,
so that they are able to conce		-	
18Y1UK Intr	roduction of Rail Vehicles	KZ	2
18Y1UK Intr Basic characteristics and par	roduction of Rail Vehicles rameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion	KZ train and unit train	2 ns. Rolling and
18Y1UK Intr Basic characteristics and par track resistance. Total running	roduction of Rail Vehicles rameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion g resistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehicl	KZ train and unit train	2 ns. Rolling and
18Y1UK Intr Basic characteristics and par track resistance. Total running and electric drive. Design cor	roduction of Rail Vehicles rameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion g resistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehicl ncept rail vehicles and drive of wheel set.	KZ train and unit train le - hydromechani	2 ns. Rolling and c, hydrodynamic
18Y1UK Intr Basic characteristics and par track resistance. Total running and electric drive. Design cor 12Y1VC Wa	roduction of Rail Vehicles rameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion g resistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehicl ncept rail vehicles and drive of wheel set. aterways and Shipping	KZ train and unit train le - hydromechani	2 ns. Rolling and c, hydrodynamic
18Y1UK Intr Basic characteristics and par track resistance. Total running and electric drive. Design cor 12Y1VC Wa Basic modes of transport. Th	roduction of Rail Vehicles rameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion g resistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehicl ncept rail vehicles and drive of wheel set. aterways and Shipping ne position of water transport in the transport system of the Czech Republic and the EU. Advantages and disadvantages	KZ train and unit train le - hydromechani KZ of water transpor	2 ns. Rolling and c, hydrodynamic 2 t. Basic systems
18Y1UK Intr Basic characteristics and par track resistance. Total running and electric drive. Design cor 12Y1VC Wa Basic modes of transport. Th of waterways in Europe, a ne	roduction of Rail Vehicles rameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion g resistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehicl ncept rail vehicles and drive of wheel set. aterways and Shipping	KZ train and unit train le - hydromechani KZ of water transpor	2 ns. Rolling and c, hydrodynamic 2 t. Basic systems
18Y1UK Intr Basic characteristics and par track resistance. Total running and electric drive. Design cor 12Y1VC Wa Basic modes of transport. Th of waterways in Europe, a ne in inland navigation, navigation	roduction of Rail Vehicles rameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion g resistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehicl ncept rail vehicles and drive of wheel set. aterways and Shipping the position of water transport in the transport system of the Czech Republic and the EU. Advantages and disadvantages were twork of waterways in the Czech Republic. Construction of the waterway and its equipment. Management of waterways a	KZ train and unit train le - hydromechani KZ of water transpor	2 ns. Rolling and c, hydrodynamic 2 t. Basic systems
18Y1UK Intr Basic characteristics and par track resistance. Total running and electric drive. Design cor 12Y1VC Wa Basic modes of transport. Th of waterways in Europe, a ne in inland navigation, navigatic 23Y1VS Ne	roduction of Rail Vehicles rameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion g resistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehicl ncept rail vehicles and drive of wheel set. aterways and Shipping ne position of water transport in the transport system of the Czech Republic and the EU. Advantages and disadvantages stwork of waterways in the Czech Republic. Construction of the waterway and its equipment. Management of waterways and on rules of operation, navigation maps.	KZ train and unit train le - hydromechani KZ of water transpor and its operation.	2 ns. Rolling and c, hydrodynamic 2 t. Basic systems The legal regime
18Y1UK Intr Basic characteristics and par track resistance. Total running and electric drive. Design cor 12Y1VC Wa Basic modes of transport. Th of waterways in Europe, a ne in inland navigation, navigatic 23Y1VS Neg Code of conduct for negotiati	roduction of Rail Vehicles rameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion g resistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehicle ncept rail vehicles and drive of wheel set. atterways and Shipping ne position of water transport in the transport system of the Czech Republic and the EU. Advantages and disadvantages atwork of waterways in the Czech Republic. Construction of the waterway and its equipment. Management of waterways on rules of operation, navigation maps. gotiation and Cooperation	KZ train and unit train le - hydromechani KZ of water transpor and its operation. KZ ormal and formal r	2 ns. Rolling and c, hydrodynamic 2 t. Basic systems The legal regime 2 ole in the team.
18Y1UK Intr Basic characteristics and par track resistance. Total running and electric drive. Design cor 12Y1VC Wa Basic modes of transport. Th of waterways in Europe, a ne in inland navigation, navigatio 23Y1VS Neg Code of conduct for negotiati Principles of negotiation, the trust.	roduction of Rail Vehicles rameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion g resistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehicle ncept rail vehicles and drive of wheel set. Atterways and Shipping ne position of water transport in the transport system of the Czech Republic and the EU. Advantages and disadvantages etwork of waterways in the Czech Republic. Construction of the waterway and its equipment. Management of waterways and on rules of operation, navigation maps. gotiation and Cooperation ion. The influence of personality traits on the negotiations. Negotiation and commanding. Teamwork. Variants teams. Inforessence of negotiation, the differences in negotiation in business and in crisis situations, the principle of "win both", spe	KZ train and unit train le - hydromechani KZ of water transpor and its operation. KZ ormal and formal r	2 ns. Rolling and c, hydrodynamic 2 t. Basic systems The legal regime 2 ole in the team.
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11Y1ZM Foundation of MATLAB Programming To explain the principle of algorithmization, flow charts, description of MATLAB environment and its settings, MATLAB help, mathematical operators, matrices and elements operations, control flow, inputs and outputs, graphics, optimization and program code debugging. 12Y1ZU Principles of Urbanism ΚZ 2 Survey on history of city and settlement building. Functional components and their mutual relations (working, living, recreation, transportation). Spacial arrangement of settlements. Types of towns or cities with a certain prevailing function, forms of their development. Brief overview of land-use planning. East-West dichotomy: Prelude to the Cold War Historical prologue, evolution of the "West" and "East" from the 1500s. Focus on the history in the period between 1850 nad 1950. Milestones and continuity of the international relations in the end of 19th century and the beginning of the 20th century. Revolutions, the causes and consequences. Scientific and technological progress, the causes and consequences. Economic and financial history. Social changes. Discussions on texts, sources. Vehicle Testing, Legislation and Construction Vehicle, bus and motorbike costruction, aggregate computing, driving resistance, build and parameters of traction, constructional arrangement of personal cars, trucks, buses, motorbikes, legislation in the EU and in the world, technical legislation creation, testing methods, vehicle tests, accelerated tests, mathematical modelling in testing. Name of the block: Jazyky Minimal number of credits of the block: 6 The role of the block: J Name of the group: Jazyk bak. 5., 6.sem. (od) 16/17 (pro B3710) Requirement credits in the group: In this group you have to gain 6 credits Requirement courses in the group: In this group you have to complete 2 courses Credits in the group: 6

Code of the group: JZ-B-3,4 16/17

Note on the group:

15JZ3S

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
15JZ3F	Foreign Language - French 3 Eva Rezlerová, Irena Veselková	Z	3	0P+4C+10E	Z	J
15JZ3I	Foreign Language - Italian 3 Eva Rezlerová, Irena Veselková	Z	3	0P+4C+10E	B Z	J
15JZ3N	Foreign Language - German 3 Eva Rezlerová, Jana Štikarová, Martina Navrátilová	Z	3	0P+4C+10E	Z	J
15JZ3R	Foreign Language - Russian 3 Eva Rezlerová, Marie Michlová	Z	3	0P+4C+10E	Z	J
15JZ3S	Foreign Language - Spanish 3 Eva Rezlerová, Nina Hricsina Puškinová	Z	3	0P+4C+10E	B Z	J
15JZ4F	Foreign Language - French 4 Eva Rezlerová, Irena Veselková	Z,ZK	3	0P+4C+10E	L L	J
15JZ4I	Foreign Language - Italian 4 Eva Rezlerová	Z,ZK	3	0P+4C+10E	B L	J
15JZ4N	Foreign Language - German 4 Eva Rezlerová, Jana Štikarová, Martina Navrátilová	Z,ZK	3	0P+4C+10E	B L	J
15JZ4R	Foreign Language - Russian 4 Eva Rezlerová, Marie Michlová	Z,ZK	3	0P+4C+10E	L L	J
15JZ4S	Foreign Language - Spanish 4 Eva Rezlerová, Nina Hricsina Puškinová	Z,ZK	3	0P+4C+10E	L	J

1302411	Eva Rezlerová, Jana Štikarová, Martina Navrátilová	2,21		u 40riub	_]
15JZ4R	Foreign Language - Russian 4 Eva Rezlerová, Marie Michlová	Z,ZK	3	0P+4C+10B	L	J
15JZ4S	Foreign Language - Spanish 4 Eva Rezlerová, Nina Hricsina Puškinová	Z,ZK	3	0P+4C+10B	L	J
Characteristics of	f the courses of this group of Study Plan: Code=JZ-B-3,4 16/17 N	lame=Jazyk ba	ak. 5., 6.	sem. (od) 1	16/17 (pro	B3710)
15JZ3F	Foreign Language - French 3				Z	3
Grammar and stylistics	. Selection of conversation and professional topics based on the language level and stud	y focus at the Facul	ty. Improve	ment of langua	age structure	e knowledge
and perceptive and cor	mmunicative skills, vocabulary development. Basic stylistic forms. Presentation of own known	owledge in oral and	written for	m. Work with (professional) text and its
features. Practice of ora	al and written presentation.					
15JZ3I	Foreign Language - Italian 3				Z	3
Grammar and stylistics	. Selection of conversation and professional topics based on the language level and stud	y focus at the Facul	ty. Improve	ment of langua	age structure	e knowledge
and perceptive and cor	mmunicative skills, vocabulary development. Basic stylistic forms. Presentation of own known	owledge in oral and	written for	m. Work with (professional) text and its
features. Practice of ora	al and written presentation.					
15JZ3N	Foreign Language - German 3				Z	3
Grammar and stylistics	Selection of conversation and professional topics based on the language level and stud	y focus at the Facul	ty. Improve	ment of langua	age structure	e knowledge
and perceptive and cor	mmunicative skills, vocabulary development. Basic stylistic forms. Presentation of own known	owledge in oral and	written for	m. Work with (professional) text and its
features. Practice of ora	al and written presentation.					
15JZ3R	Foreign Language - Russian 3				Z	3
Grammar and stylistics	Selection of conversation and professional topics based on the language level and stud	y focus at the Facul	ty. Improve	ment of langua	age structure	e knowledge
and perceptive and cor	mmunicative skills, vocabulary development. Basic stylistic forms. Presentation of own known	owledge in oral and	written for	m. Work with (professional) text and its
features. Practice of ora	al and written presentation.					

Foreign Language - Spanish 3 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.

15JZ4F	Foreign Language - French 4	Z,ZK	3
Grammar and stylis	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement	of language structu	ire knowledge
and perceptive and	l communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Wo	ork with (professiona	al) text and its
features. Practice of	of oral and written presentation.		
15JZ4I	Foreign Language - Italian 4	Z,ZK	3
Grammar and stylis	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement	of language structu	ire knowledge
and perceptive and	l communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Wo	ork with (professiona	al) text and its
features. Practice of	of oral and written presentation.		
15JZ4N	Foreign Language - German 4	Z,ZK	3
Grammar and stylis	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement	of language structu	ire knowledge
and perceptive and	l communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Wo	ork with (professiona	al) text and its
features. Practice of	of oral and written presentation.		
15JZ4R	Foreign Language - Russian 4	Z,ZK	3
Grammar and stylis	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement	of language structu	ire knowledge
and perceptive and	l communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Wo	ork with (professiona	al) text and its
features. Practice of	of oral and written presentation.		
15JZ4S	Foreign Language - Spanish 4	Z,ZK	3
Grammar and stylis	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement	of language structu	ire knowledge
and perceptive and	l communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Wo	ork with (professiona	al) text and its
features. Practice of	of oral and written presentation.		

List of courses of this pass:

Code	Name of the course	Completion	Credits
11CAL1	Calculus 1	Z,ZK	7
Sequence of real r	numbers and its limit. Basic properties of mappings. Function of one real variable, its limit and derivative. Geometric properties of n-din	nensional Euklidea	n space and
Cartes	an coordinate system. Geometric meaning of the differential of functions several real variables, differential calculus of functions of se	veral real variables	•
11CAL2	Calculus 2	Z,ZK	5
Indefinite integral,	Newtonian integral, Riemannian integral of the function of one variable, improper Riemannian integral, Riemannian integral in Rn. Pa	rametric description	n of regular
k-dimensional su	rfaces in Rn, Riemannian integral over regular surfaces. Line and surface integrals of the second type, Stokes theorems, ordinary dif	ferential equations	of the first
	order, linear differential equations with constant coefficients and its systems		
11FYZ	Physics	Z,ZK	5
	Kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermodynamics.		
11GIE	Geometry	KZ	3
Differential geome	etry of curves - parameterization, the arc of the curve, torsion and curvature, Frenet`s trihedron. Kinematics - a curve as a trajectory of	of the motion, the v	elocity, and
	acceleration of a particle moving on a curved path.		
11LA	Linear Algebra	Z,ZK	3
Vector spaces (line	ear combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and the	•	minants and
	their applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classificat		
11MSP	Modeling of Systems and Processes	Z,ZK	4
System and subsys	stem, external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of difference and discrete system, and internal system description, continuous and discrete system, and internal system description.	ential and differentia	al equations
Linear and nor	nlinear system, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer function	on. Stability of LTI s	ystems.
	Discretization of continuous systems. System interconnection.		
11STAT	Statistics	Z,ZK	4
Basics of probab	ility Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Parame	tric tests Nonparan	netric tests
	Regression and correlation analysis		
11X31	Project 1	Z	2
11X32	Project 2	Z	2
11X33	Project 3	Z	2
11Y1MM	Mathematical Models in Economy	KZ	2
The goal of the co	ourse is to teach selected methods of linear programming, with theoretical procedures applicable for individual tasks and their program	n implementation.	ι Γhe outcom
	of the course is the ability to implement and solve basic tasks from the queue theory, graph theory and both free and constrained of		
11Y1PV	Parametrical and Multicriterial Programming	KZ	2
Solution to the pro	olem of linear programming with a parameter in objective function, on right sides and in the matrix of coeficients of linear constraints. C	omputation of effici	ent solution
11Y1SI	Transportation Software Engineering	KZ	2
Basic concepts of	s software engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and impleme	ntation using forma	l I techniques
	and practical usuage.		
11Y1TG	Graph Theory	KZ	2
Basic concepts an	d terminology of graph theory, graph representation. Problems of graph theory, problem instance. Graph search algorithms, trees, mi	nimum spanning tr	ee, shortest
path problem, Eule	rian path, bipartite graph matching, flow networks, circulations, critical path method, traveling salesman problem. Problem of existence a	and optimization an	d algorithms
	for their solving. Computational complexity, dealing with NP-complete problems, heuristic approach.		
11Y1ZM	Foundation of MATLAB Programming	KZ	2
To explain the prin	ciple of algorithmization, flow charts, description of MATLAB environment and its settings, MATLAB help, mathematical operators, mat	rices and elements	operations

control flow, inputs and outputs, graphics, optimization and program code debugging.

12MDE	Transport Models and Transport Excesses	Z,ZK	3
	traffic flow and methods for their measurement. Models of the traffic flow, communications load, line and urban systems. Theory of qu		s. Quality of
transport and its a	assessment. Statistical characteristics of transport. Transport excesses, their analysis, the causes, identify and minimize the consequences.	ences. Improving o	f transport
	safety and fluency.		
12PPOK	Designing Roads, Highways and Motorways	KZ	3
	ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard	•	
Range of vision for	stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet	y device. Crossing:	s, junctions,
40V04	intersections.	7	
12X31	Project 1	Z	2
12X32	Project 2	Z	2
12X33	Project 3	Z	2
12Y1C1	Designing Roads in Civil 3D I	KZ	2
	voted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through	•	١ .
particular iliteal b	uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The explanation of the traffic building design in the real-life profession.	course also includ	es a Dasic
12Y1C2	Designing Roads in Civil 3D II	KZ	2
	voted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through		
	uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The	· · · · · · · · · · · · · · · · · · ·	-
	improved and developed. Students learn to design intersections.	, , ,	
12Y1DS	Project Documentation in Practice	KZ	2
Project document	ation creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process.	Budget and pricing	g. Practical
	creation of some project documentation parts.		
12Y1HD	Traffic Noise	KZ	2
	on, basic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regulation		
area, principles	of urban acoustic, noise transmission, soundproofing. Types of noise sources in area. Determination of acoustic situation in the area	of interest. Method	lology of
10)////	computing and measurement of transport noise. Acoustic studies, measuring protocol.	147	
12Y1KN	Combined Transportation	KZ	2
	ort strategy and legislation. Load units. Means of transport in combined transport. Combined transport systems. Transshipping areas.		
12Y1PC	Pedestrian and Cycling Transport ans. Pedestrian crossings. Modifications for blind, dim-sighted and disabled people. Design of cycle routes network. Ways of cycle route	KZ	2 parameters
· ·	ation of cyclists from other transport modes. Cycle tracks and its design - one way streets, reserved traffic lanes, bus stops, crossings	-	
ioi cyclists. Ocpai	crossroads. Traffic signs and road marking for cyclists.	with other transpo	ort modes,
12Y1PD	Assessment of Transport Structures	KZ	2
	sport structures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibilities of		
transport structures	s on the landscape. Rating fragmentation and landscape connectivity in the preparation of linear structures. Practical examples of ass	essment of traffic b	ouildings on
	the environment.		
12Y1PU	Organization Disposition of Railway Stations	KZ	2
•	on. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zon		on yards.
	ve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic		
12Y1SU	Road Management and Maintenance	KZ	2
	rith ownership of roads in the Czech Republic and the administration of the road at the state and county level. It is presented develop erm strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and repair		
mediam and long to	classroom as well as investment activity in highway engineering.	metrious are disce	20000 111 1110
12Y1VC	Waterways and Shipping	KZ	2
	nsport. The position of water transport in the transport system of the Czech Republic and the EU. Advantages and disadvantages of v	l l	
	rope, a network of waterways in the Czech Republic. Construction of the waterway and its equipment. Management of waterways and	•	-
	in inland navigation, navigation rules of operation, navigation maps.		
12Y1ZU	Principles of Urbanism	KZ	2
Survey on history	of city and settlement building. Functional components and their mutual relations (working, living, recreation, transportation). Spacial	arrangement of se	ettlements.
	Types of towns or cities with a certain prevailing function, forms of their development. Brief overview of land-use planning.		
12ZTS	Railway Lines and Stations	Z,ZK	4
Rail transport. Ra	ailway track geometry parameters. Route layout of railway lines. Railway line construction - railway substructure and superstructure. S	-	way lines.
407VDI	Railway control systems in relation to infrastructure. Operating and carriage points. Railway lines net and category. Traction in rail to		
12ZYDI	Introduction to Transportation Engineering	Z,ZK	2
Role of transportati	on in land-use planning. Basic terms in transportation engineering. Traffic survey and traffic prognosis. Introduction to topic of roads, p impacts of transportation to environment and safety.	ublic mass transpo	it. Negative
14ASD	Algorithm and Data Structures	KZ	3
	niliarized with selected basic and derived data structures, algorithms, their properties and their design procedure. Students will analyze		
	et task and the resulting algorithm write by means of flowcharts, practice in reading algorithms recorded by means of the flowchart ar		
	algebra with forming the conditions for the algorithms.		
14DATS	Database Systems	KZ	2
Basic concepts of	f database systems, conceptual model, relational data model, the principles of normal forms, relational database design, security and		database
	queries, relational algebra, SQL language, client / server, multilayer architectures, distributed database systems. Access to data via		
14KSP	Constructing with Computer Aid	KZ	2
-	m determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic common wor		
and CA systems.	Co-ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting possib	ilites, AutoCAD en	vironment
14000	profiles, drawings with raster foundaments).	V7	2
14PRG	Programming ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python progran	KZ	2 expanded
-	rticipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and searc		
par	working with date and time, regular expressions, functions and procedures, working with files (CSV JSON XMI)	,p.cc, co.c, t	

14X31	Project 1	Z	2
14X32	Project 2	Z	2
14X33	Project 3	Z	2
14Y1AV	Animation and Visualization	KZ	2
	ations and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and Sp		
	ts, rendering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animatio		
14Y1BE	Barrierless Transport	KZ	2
	rless accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students onment roads, railway stations, public transport stops, terminal buildings, vehicles, public transport, information and orientation systems	-	-
OI Dameness envir	Theoretical knowledge will be supplemented by practical examples.	and transportatio	n technology.
14Y1BM	Biometric Methods	KZ	2
	erms, authentication methods, principles and performance measurement of biometric systems, overview of biometric technologies, ha		
	method, 2D and 3D face recognition, vein patterns on the wrist, ear biometrics, fingerprint recognition, skin spectroscopy, behavioral		
	in transport applications, safety and risks of biometric technologies.		
14Y1HW	Computer Hardware	KZ	2
Computer archite	ecture, basics of logical circuits design and their realization using FPGA. In detail, description of computer architecture and separate	parts designing -	controllers,
	arithmetic and logical units, I/O subsystem.		
14Y1MP	Modeling Complex Assemblies and Models in Parametric Modeller	KZ	2
Assemblies pro	gramming - tools and methodology of working subassemblies and assemblies, sheet metal parts modelling, welded assemblies, pipe	elines, and distribu	ition lines.
4.47/4.00	Photorealistic output rendering - physical and material properties, lighting sources. MKP - visual example.	1/7	T 2
14Y10P	Operating System stallation GNU/Linux OS. X-window system. Rights management - users and groups, ACL rights. Filesystems and attributes. Program	KZ	2
	console programs / commands. Config files. SW management, package systems. Programs in graphic shell - text, spreadsheet, grap	•	
Tarriovolo. Baolo	communication. Services management. Safe and secure configuration of OS. Remote administration.	nio Garioro, Godina	, vidoo and
14Y1P2	Computer Aid of Transportation Projecting 2	KZ	2
	pplication for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, da	ı ta exchange). Adv	anced blocks
modification (attrib	utes, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transition	n curve, cross-an	d longitudinal
	section). Basics of 3D modelling.		
14Y1PA	3D Modeling in AutoCAD	KZ	2
Work in 3D non-p	parametric modeller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup creation, object	data creation, wo	rk with data
4.0/4.00	connected with external database. Basic definition of work with lights, materials and reflexes. Models presentation.	1/7	
14Y1PG	Computer Graphics	KZ	2
basic iornals or	graphic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with edit level scope) using layers, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphic		nin the user
14Y1PI	Corporate Information System	KZ	2
	por-knowledge, components of information system, syntatic and semantic sense of data, structure of corporate information system, pa	1	
	duction, storage, etc.), corporate information politic and information control, risks of information system operation, legal environment o		-
	state information system, information system security, data protection, safety politics.		
14Y1PJ	C Programming Language	KZ	2
	guage. Preprocessor, basics of the C language (data types, syntax, commands), functions, pointes, dynamical memory allocation, stri		s and unions.
	Implementations of abstract data types (FIFO, LIFO, list), programming techniques (sorting, searching, recursion), using bitwise of	1	
14Y1PZ	Advanced Data Processing in Spreadsheets	KZ	2
	familiar with principles of working in a spreadsheet. Graphic layout of the table appearance, formatting of numbers, insertion of form		
addressing, error d	letection. Working with large spreadsheets, filters, advanced filters, database functions. Pivot tables and charts, conditional formatting, data analysis. Examples and questions from various companies and training.	solution linding, sc	olver, macros,
14Y1TI	Creating Interactive Internet Applications	KZ	2
	pting language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions. You		
	in PHP language.		F 3
14Y1UP	Editing of Theses in MS Word	KZ	2
	introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, creating and editing large documents and basic typographic rules.	1	1
figures, tables, gra	phs, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless ed	diting dissertations	s and theses,
	so that they are able to concentrate mainly on writing a thesis.		
14Y1VM	Development of Applications for Mobile Devices	KZ	2
Object oriented	programming, Java programming language, development environment, operating system Android, development application - widgets	, containers, threa	ads, menu,
	permissions, services, GUI.		
14Y1W1	Webdesign 1	KZ	2
	the basics of communication HTTP, URL and addressing, markup languages HTML and XHTML, HTML tags, rules of web accessibilit s, the issue of web browsers, creating one to three column layout pages, sites validation, conditional comments. Topics will be practic		
14Y1W2	Webdesign 2	KZ	2
	advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, web se	I	
- I I I I I I I I I I I I I I I I I I I	directives. Topics will be practiced on practical examples.		
14Y1ZM	Fundamentals of parametric and adaptive modeling	KZ	2
	products and parts creation. Sketch drawing by help of geometric relations, parametric dimensions, creation of adaptive models from 2		1
<u> </u>	from and to another systems. Fundamentals of assemblies creation.		
15DPLG	Transportation Psychology	Z	2
	ogy and its basic concepts. Information intake, decision-making and behaviour. Performance. Engineering psychology and vehicle cons	truction. Psycholo	gical aspects
	el route and traffic conditions, accidents and traffic incidents. Selection and training of the staff. Work and leisure. Age as a factor in tr	ansport operation	
15JZ1A	Foreign Language - English 1	Z	3
Grammatical Struc	tures and Style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and co		s. Elementary
	stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles		

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15JZ2A	Foreign Language - English 2	Z,ZK	3
rammatical structu	ures and style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and com		Elementa
45.1705	stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles of		
15JZ3F	Foreign Language - French 3	Z	3
	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la		
nd perceptive and	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work w features. Practice of oral and written presentation.	ntri (professional)	text and
15JZ3I		Z	3
	Foreign Language - Italian 3 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la	_	-
•	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work w		
na perceptive and	features. Practice of oral and written presentation.	ntii (proicssioriai)	toxt and
15JZ3N	Foreign Language - German 3	Z	3
	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la	_	_
-	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work w		
	features. Practice of oral and written presentation.	. ,	
15JZ3R	Foreign Language - Russian 3	Z	3
	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la	nguage structure	knowled
nd perceptive and	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work w	rith (professional)	text and
	features. Practice of oral and written presentation.		
15JZ3S	Foreign Language - Spanish 3	Z	3
rammar and styli	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la	nguage structure	knowledg
nd perceptive and	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work w	rith (professional)	text and
	features. Practice of oral and written presentation.		
15JZ4F	Foreign Language - French 4	Z,ZK	3
	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la		
nd perceptive and	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work w	ith (professional)	text and
	features. Practice of oral and written presentation.		
15JZ4I	Foreign Language - Italian 4	Z,ZK	3
= -	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la		
nd perceptive and	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work w	ntri (professional)	text and
15JZ4N	features. Practice of oral and written presentation.	Z,ZK	3
	Foreign Language - German 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la		_
-	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work w		
		ith (professional)	text and
	features. Practice of oral and written presentation.		
15JZ4R	features. Practice of oral and written presentation. Foreign Language - Russian 4	Z,ZK	3
15JZ4R Grammar and styli	features. Practice of oral and written presentation. Foreign Language - Russian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la	Z,ZK nguage structure	3 knowled
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15JZ4R Grammar and stylication perceptive and stylication perceptive and stylication perceptive and 15X31 15X32 15X33 15Y1BO Fundamental legis	features. Practice of oral and written presentation. Foreign Language - Russian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lad communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work we features. Practice of oral and written presentation. Foreign Language - Spanish 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lad communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work we features. Practice of oral and written presentation. Project 1 Project 2 Project 3 Work Safety and Health Protection in Transportation lative, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation. Health insurance of home and foreign business trips, statistics, working practice.	Z,ZK nguage structure vith (professional) Z,ZK nguage structure vith (professional) Z Z Z KZ ealth protection pr	3 knowled text and 3 knowled text and 2 2 2 2 2 2 cogramme
15JZ4R Grammar and stylind perceptive and stylind perceptive and stylind perceptive and 15X31 15X32 15X33 15Y1BO undamental legis	features. Practice of oral and written presentation. Foreign Language - Russian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lad communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work we features. Practice of oral and written presentation. Foreign Language - Spanish 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lad communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work we features. Practice of oral and written presentation. Project 1 Project 2 Project 3 Work Safety and Health Protection in Transportation lative, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation. Health insurance of home and foreign business trips, statistics, working practice. History of Railway	Z,ZK nguage structure vith (professional) Z,ZK nguage structure vith (professional) Z Z Z KZ ealth protection professional	3 knowled text and 3 knowled text and 2 2 2 2 2 cogramme
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15JZ4R firammar and stylind perceptive and stylind perceptive and stylind perceptive and 15X31 15X32 15X33 15Y1BO undamental legis 15Y1DZ Horse-drawn railwar II railways, railwa	features. Practice of oral and written presentation. Foreign Language - Russian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lad communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work we features. Practice of oral and written presentation. Foreign Language - Spanish 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lad communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work we features. Practice of oral and written presentation. Project 1 Project 2 Project 3 Work Safety and Health Protection in Transportation lative, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation. He health insurance of home and foreign business trips, statistics, working practice. History of Railway vays, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repulvay development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connection railway accidents, railway junctions. Excursions and projections.	Z,ZK nguage structure vith (professional) Z,ZK nguage structure vith (professional) Z Z Z KZ ealth protection professional KZ blic", electric tractors, railway lines of	3 knowled text and 3 knowled text and 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
15JZ4R Grammar and stylind perceptive and 15JZ4S Grammar and stylind perceptive and 15X31 15X32 15X33 15Y1BO undamental legis 15Y1DZ Horse-drawn railwar II railways, railw	features. Practice of oral and written presentation. Foreign Language - Russian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lad communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work we features. Practice of oral and written presentation. Foreign Language - Spanish 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lad communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work we features. Practice of oral and written presentation. Project 1 Project 2 Project 2 Project 3 Work Safety and Health Protection in Transportation lative, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation. He health insurance of home and foreign business trips, statistics, working practice. History of Railway vays, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repulary development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connection railway accidents, railway junctions. Excursions and projections. European Integration within Historical Context	Z,ZK nguage structure vith (professional) Z,ZK nguage structure vith (professional) Z Z Z KZ ealth protection professions, railway lines of KZ	3 knowled text and 3 knowled text and 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
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15JZ4R Grammar and stylicated perceptive and 15JZ4S Grammar and stylicated perceptive and 15JZ4S Grammar and stylicated perceptive and 15X31 15X32 15X33 15Y1BO Grandamental legis 15Y1DZ Horse-drawn railwar II railways,	features. Practice of oral and written presentation. Foreign Language - Russian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of late ornmunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work we features. Practice of oral and written presentation. Foreign Language - Spanish 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of late ornmunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work we features. Practice of oral and written presentation. Project 1 Project 1 Project 2 Project 3 Work Safety and Health Protection in Transportation lative, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation. He health insurance of home and foreign business trips, statistics, working practice. History of Railway vays, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repu vay development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connectic railway accidents, railway junctions. Excursions and projections. European Integration within Historical Context formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism. Littler Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and its art Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and its reflect of the LN. Rearrangement of powers during traffic, TGV, air traff tch society and culture. Current political system. System of education, studying	Z,ZK nguage structure vith (professional) Z,ZK nguage structure vith (professional) Z Z Z KZ ealth protection processions, railway lines of the seconsequences for the seconsequen	3 knowled text and 3 knowled text and 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 3 2 2 3 2 3 3 2 2 3
15JZ4R Grammar and stylicated perceptive and 15JZ4S Grammar and stylicated perceptive and 15JZ4S Grammar and stylicated perceptive and 15X31 15X32 15X33 15Y1BO Fundamental legis 15Y1DZ Horse-drawn railw/ar II railways, railw 15Y1EH fersailles system, goals. Europe after 15Y1FD France - geograp Fren 15Y1HD istory of city mass cleara 15Y1HE Basic knowledge treation and proter	features. Practice of oral and written presentation. Foreign Language - Russian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lad communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work wretaures. Practice of oral and written presentation. Foreign Language - Spanish 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lad communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work wretaures. Practice of oral and written presentation. Project 1 Project 1 Project 2 Project 3 Work Safety and Health Protection in Transportation lative, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation. He health insurance of home and foreign business trips, statistics, working practice. History of Railway ayays, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repu way development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connection railway accidents, railway junctions. Excursions and projections. European Integration within Historical Context formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism. Littler Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and its riliter's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and its riliter's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and its riliter's getting to power,	Z,ZK nguage structure with (professional) Z,ZK nguage structure with (professional) Z Z Z Z Z Ealth protection professional KZ blic", electric tractors, railway lines of KZ tle Entente, its prissions consequences for KZ ic, specialised tech gastronomy. KZ nd developments lic and Slovakia. KZ actors on health of ssibilities and skill KZ	3 knowled text and 3 knowled text and 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 3 2 2 3 2 3 2 3
15JZ4R Grammar and stylicated perceptive and 15JZ4S Grammar and stylicated perceptive and 15JZ4S Grammar and stylicated perceptive and 15X31 15X32 15X33 15Y1BO Fundamental legis 15Y1DZ Horse-drawn railwar II railways, r	features. Practice of oral and written presentation. Foreign Language - Russian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lad communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work w features. Practice of oral and written presentation. Foreign Language - Spanish 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lad communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work w features. Practice of oral and written presentation. Project 1 Project 1 Project 2 Project 3 Work Safety and Health Protection in Transportation lative, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation. He health insurance of home and foreign business trips, statistics, working practice. History of Railway ayay, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repu vay development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connection railway accidents, railway inctions. Excursions and projections. European Integration within Historical Context formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism. Littler's getting to power, system of bilateral agreements. Decline of the Ln. Rearrangement of powers during WWII. Cold war and its riller's getting to power, system of bilateral agreements. Decline of the Ln. Rearrangement of powers during WWII. Cold war and its reflicted year and trainsport infrastructure. Paris and its sights, city public transport. Road traffic, motoways, railway traffic, TGV, air traff has opening the proper	Z,ZK Inguage structure (ith (professional) Z,ZK Inguage structure (ith (professional)) Z Z Z Z KZ Inguage structure (ith (professional)) KZ Inguage str	3 knowled text and 3 knowled text and 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 3 2 2 3 2 3

15Y1MK	Modern History in Context: Every Day Life and Transport Historical overview of modern history of every day life, science, technology and transport in a wider context.	KZ	2
15Y1NE		KZ	2
	German in the Economy and Society and social issues of German speaking countries and of the EU. Reading and listening of texts. Lexical, grammatical and semantic are	1	1
4=>44=>4	selected topics.		_
15Y1ZV	East-West dichotomy: Prelude to the Cold War	KZ	2
	, evolution of the "West" and "East" from the 1500s. Focus on the history in the period between 1850 nad 1950. Milestones and continu	-	
in the end of 19th	century and the beginning of the 20th century. Revolutions, the causes and consequences. Scientific and technological progress, the Economic and financial history. Social changes. Discussions on texts, sources.	a causes and cons	equences.
16UDOP	Introduction into Vehicles	Z	2
	portation systems. Functionality and setup. Movement and drive principles. Engines and their characteristics. Rail, road, air and wate	1	
vernoies and trans	of transport. Lifting equipment and conveyors. Legislation.	r transport. / trome	ative means
16X31	Project 1	Z	2
16X32	Project 2	Z	2
16X32	•	Z	
	Project 3		2
16Y1EN	Energy Requirements of Vehicles	KZ	2
Dynamics and the	driving inertial of the vehicles. Types of energy - kinetic, static, heat, chemical and others. Ways of energy change into kinetic energy		ne, electric
40)/410	drive, steam engine, air engine. Energy accumulation means, accumulator, flywheel, fuel cell. Energy recuperation. WTW ana		
16Y1IS	Interactive simulators and simulations	KZ	2
	ry and application of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical m lation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and intera		metnods.
			2
16Y1KS	Quality and Reliability of Vehicles	KZ	2
	ility theory in design, development, production and operation of vehicles. Definition and possible approach to quality and reliability. K Analysis), QFD (Quality Function Deployment), DFx (Design for Assamly, Manufacturying, Quality, Services) and other methods ι		
I Wode and Lifects	Knowledge-based systems of quality and reliability, data collection.	seu iii iiiuusiiiai a	opiications.
16Y1PV	Operation, Construction and Maintenance of Vehicles	KZ	2
	e production. Vehicle maintenance. Vehicle diagnostics. Maintenance and repair plans. Engine maintenance and emission measurem		
	General principles of engine diagnostics.		
16Y1RE	Control and Electronic Vehicle Systems	KZ	2
	ts of regulation. Tools for analytical solution, linear system description. Basic types of a regulator (PID), properties, advantages, disadva		
	control. Electric drive. Vehicle communication bus (CAN, LIN, FlexRay, ISObus, KWP2000 protocole etc.). Vehicle electronic control,	-	
	comfort systems.	-	
16Y1VT	Development in Railroad Vehicles	KZ	2
Railroad vehicles	, s traction. Railroad vehicle parametres regulation. Control and driving of railroad vehicles. Importance in heavy duty and personal tra	nsportation. Critica	l situation
	assesment. New materials in design. International standardization.		
16Y1ZG	Introduction into Applied Computer Graphics	KZ	2
Computer graphics	s, division and applications with emphasis on transport, including development and research. Colours, colour perception, colour sche	mes, models, princ	ciples of 2D
and 3D generation	on, elementary algorithms for graphic data workout. Visualisation principles and tasks, technics, graphics and visualisation HW basic	s. Introduction to 2	D and 3D
	graphics software.		
16Y1ZL	Vehicle Testing, Legislation and Construction	KZ	2
	otorbike costruction, aggregate computing, driving resistance, build and parameters of traction, constructional arrangement of personal		motorbikes,
	slation in the EU and in the world, technical legislation creation, testing methods, vehicle tests, accelerated tests, mathematical mode		
17TEDL	Transport Technology and Logistics	KZ	3
	sport technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and freight transport planning, time tabling, planning in pasanger and freight transport planning.		
	odus, technologic factors of the side of operator and client, organisation of city transport, logistic technologies and their aplication us		
17TGA	Graph Theory and its Applications in Transport	Z,ZK	4
	f graph theory, paths in graphs, flows in networks, location problems, design problems on graphs, optimum routing, use of graphs in o	_	·
17X31	Project 1	Z	2
17X32	Project 2	Z	2
17X33	Project 3	Z	2
17Y1LL	Logistics of Passenger and Freight Air Transport	KZ	2
Logistics airline pa	ssenger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial tran	sport process pass	sengers and
	air cargo. Information systems in air transport. Global distribution systems.		
17Y1MD	Marketing in Transportation	KZ	2
General principles	of marketing applied to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transport as	ind the resulting dif	fferences in
47)/405	the application of marketing.	1/7	
17Y10F	Personal Finance	KZ	2
1	budget, financing of basic living needs), debt (loans and credits, payment instruments, interest and fees, debt trap), financing of hour		- 1
CONSUME IDAMS, FE	financing), savings and investments (investment horizon, return, risk, investment strategy), insurance (insurance types, suitability and (retirement savings and insurance).	auequacy), Securir	ig uie iuluie
17Y1PM	Personnel Management	KZ	2
	refsormer intarragement ces, work group, man as personality, planning, choice, evaluation and education of human sources, work adaptation, teamwork, inter	1	
17Y1SL	Sociology of Human Resources	KZ	2
	and their importance, work group as a special kind of social group, communication, personal management, modern management, hum	1	
. 1411411 103041063 6	of the organization.	a.i rooodioos pidili	ig, cuiture
17Y1ST	Titan Simulation	KZ	2
	gement game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same produ		
I	ntity and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequence	-	
I	of financial company and the company that is forward for the character for the company of the co		

18MTY	Materials Science and Engineering	Z,ZK	3
	terials science and engineering explains mechanical properties of structural materials based on their bonding forces and microstructur		
is paid to metals as	the most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and com	nposites. Attention	is also paid
18PZP	to degradation processes in materials, to defectoscopy and to main mechanical tests. Elasticity and Strength	Z,ZK	3
	ession. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolted a		
Tonoion and compr	Analysis of deflection curve of beams. Torsion of circular cross sections. Combined loading. Stability.	na wolada jolina ol	ou dotaroo.
18SAT	Structural Analysis	Z,ZK	4
	of forces in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determinate		e girders.
Principle of virtual w	vork. Kinematic method for calculation of reactions of statically determinate systems. Determination of axial forces in truss constructions.	Cross-sectional cha	aracteristics
	of planar shapes. Fiber polygons and chains.		
18TED	Technical Documentation	KZ	2
lechnical standa	rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional	and geometrical a	accuracy,
18X31	arrangement of drawing sheets. Project 1	Z	2
18X32	Project 2	Z	2
18X33	Project 2 Project 3	Z	2
18Y1AM	Anatomy, Mobility and Safety of Man	KZ	2
	natomical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circulation		_
•	of muscular-skeletal system. Injury of human organs and musculo-skeletal system during traffic accidents. Mobility of ill and injured m	•	
	joint prostheses. Protective means and traffic safety regulations.		
18Y1EM	Experimental Methods in Mechanics	KZ	2
	ole of experimental mechanics. Sensors for mechanical testing. Overview of experimental methods. Destructive and non-destructive	-	- 1
experimental pro	cedures and sample preparation. Tensile and bending tests. Electrical resistance strain gages. Optical based strain measurement. Fai	tigue and lifetime p	rediction.
40V4MT	Instrumented hardness testing. Introduction to electron microscopy. Errors in measurement.	1/7	
18Y1MT	Engineering Materials we of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers and	KZ Loomnosites atten	2 tion is paid
=	ogical materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's	· ·	tion is paid
18Y1PS	Computer Simulations in Mechanics	KZ	2
	view of tools for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model developmen		
from other CAE sys	stems. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary conditions and	d application of the	load. Basic
	tasks of structural and modal analysis. Introduction to complex nonlinear problems.		
18Y1UK	Introduction of Rail Vehicles	KZ	2
	ics and parameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion tra tal running resistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehicle - h		- 1
track resistance. To	and electric drive. Design concept rail vehicles and drive of wheel set.	lydromeonamo, my	arodynamic
20SYSA	Systems Analysis	Z,ZK	5
	em sciences, system viewpoint, terminology, typical system analysis tasks, system identification, system interface and interface tasks,		n behaviour
and its analysis,	strong functions and processes, genetic code, system identity, system architecture. Tools for system analysis - Petri nets, decision tab	les, algorithms for	structural
	tasks. Soft and hard systems, methods for soft system analysis.		
20UITS	Introduction to Intelligent Transport Systems	Z,ZK	7
	gislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamentals of inforinciples and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real examples		
systems for Tro. I in	principles of ITS.	or possible applied	
20X31	Project 1	Z	2
20X32	Project 2	Z	2
20X33	Project 3	Z	2
20Y1AE	Applied Electronics	KZ	2
	semiconductor components, their principles, characteristics and typical connection diagrams. Semiconductor PN junction diodes, tran		perational
amplifiers, basic lo	ogic gates. Functions of basic electronic circuits and methods for their designs (rectifiers, voltage regulator with Zener diode, transisto	or as an amplifier, o	perational
	amplifier as an inverting and noninverting amplifier).		
20Y1AF	Alternative Forms of Transportation Project Financing	KZ	2
•	such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt paym ot a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of secu		٠ ا
ine iniai debior is in	of transportation and telecomunication projects.	artico do arranterrit	ilive source
20Y1EA	Environmental Aspects of Transport	KZ	2
	here, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilistic		evaluation.
Air quality, main	pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transp	ortation in climate	change.
20Y1EK	Qualification in Electrical Engineering	KZ	2
=	e with measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock hazard, s	=	- 1
voitage, maximum	allowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legislatic in relation to health and safety and electrical engineering.	וו, standards and r	eguiations
20Y1LN	Location and Navigation	KZ	2
	ן examples of road networks, localization on the network. Routing algorithms, their properties and implementation. Description and examples	ı	
	transport connections, routing algorithms, their properties and implementation.		٦
20Y1OI	Fare Collection and Information Systems	KZ	2
-	stems in public transport and their components (on-board units, validators, turnstiles,). Information systems and their components		es, maps,
par	nels) and operators (cycles, location or current delay of vehicles,). The issue of tariff systems. Other examples of clearance systems	ems (parking).	

20Y1PK	Product Quality Management Processes	KZ	2	
	of organization management. Management systems and international standards; quality management systems. Quality products, pro	1 1		
	tems management, management principles. Principles of process management, monitoring and measurement systems management. L	-		
for systems management, management principles. Principles of process management, monitoring and measurement systems management. Online management of standards for systems management. Process management principles. Metrology and testing. Product certification.				
20Y1SC	Sensors and Actuators	KZ	2	
	s and actuators. Basics of measuring theory and actuating influence. The respective technologies and construction principles. Sensors o			
Filliciples of serisor	state (temperature, humidity), chemical and particle flow values. Electrical, pneumatic and hydraulic actuators and solid phase electrical state (temperature) in the solid phase electrical state (temperature).		o-magnetic,	
045150			4	
21ELED	Air Transport Economy	Z,ZK	4	
The economics of	air transport is a key subject for understanding market relations in air transport. The introduction is devoted to understanding the bas	ic economic princip	oles. This is	
	followed by a practical section that economic linkages in the domain of airlines.			
21LAG1	English for Aviation 1	KZ	3	
	Familiarity with the terminology used in civil aviation in the general context and emphasizing the ability to receive information only in			
21LAG2	English for Aviation 1	KZ	3	
21LCM	Aircraft Engines	Z,ZK	3	
Aircraft piston eng	ine, theoretical background, operational characteristics and construction schemes. Propellers, operational characterictics. Turbine en	gine, theoretical ba	ackground,	
thermal cycles, co	onstruction schemes, operational characteristics. Turbojet and turbofan engines, basic construction modules, and their operational ch	aracteristics. Engir	ne control.	
21LGP	Legislation and Operational Regulations	Z,ZK	5	
	viation regulations. The scope of international and national organizations in civil aviation. Analysis and interpretation of the ICAO Anr		-	
	. Introduction to the European Parliament and Council Regulation (EC), Commission Regulation (EU) and the Decisions of the Exec			
21LIVO	Human Performance and Limitations	Z,ZK	5	
	e & limitations, aptibility & competence, accident statistics, flight safety, basics of flight physiology, man & environment	. , .	-	
	nealth & amp; hygiene, health preservation, intoxication, incapacitation, basics of flight psychology, human information processing, me			
Concery cycleni, i	& amp; model of human error, body rhythms & amp; sleep, stress, fatigue, working methods.	omory damp, loarm	rig, trioory	
241.1.4		KZ	2	
21LL1	Aircraft 1 nd conceptual design types - definitions and basic knowledge of the problem. Development of requirements, aircraft definitions and ca		3	
Aliciali siluctulai a		· ·	an loadings.	
041740	Systems of primary and secondary airframe structure. Airframe and propulsion unit. Lectures are devoted to aeroplane topic			
21LTA2	Aircraft 2	Z,ZK	2	
Manufacturers resp	consibility, responsibilities of operator and professional supervising. Legislation in area of airworthiness. International and national star		ty of aircraft	
	structures. Aeroelasticity. Inherent and operational reliability of aircraft structure. Fatigue strength. Aircraft structure lifetime presu			
21LTN	Air Navigation	Z,ZK	2	
Earth - its shape, p	parameters and properties. Aeronautical charts and their use. Measuring time. Dead reckoning. Radionavigation aids. Global navigati	on satellite system	s. Air traffic	
	services routes and their design.			
21LTTE	Aerodromes	Z,ZK	4	
Aerodrome refere	nce point and temperature, TORA, TODA, ASDA, LDA. Taxiway and apron. Clearway. Stopway. Obstacle limitation surfaces. Runway	marking Runway z	11-1-4-	
		a	one lights.	
	Environmental conditions. Public traffic.		one lights.	
21MRG		KZ	one lights.	
Structure of atmo	Environmental conditions. Public traffic. Meteorology sphere. Vertical stratification. Pressures QNH, QFE, QFF, QNE. Instability. Atmospherical fronts. Atmospheric precipitation - origin ar	KZ	3 e. Powers	
Structure of atmo	Environmental conditions. Public traffic. Meteorology	KZ	3 e. Powers	
Structure of atmo	Environmental conditions. Public traffic. Meteorology sphere. Vertical stratification. Pressures QNH, QFE, QFF, QNE. Instability. Atmospherical fronts. Atmospheric precipitation - origin ar	KZ	3 e. Powers	
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21Y1FN	Factors Affecting the Rate of Accidents in Aviation	KZ	2
	tope of international and national organizations in civil aviation. The scope of the investigation organizations within the state and international and national organizations in civil aviation. The scope of the investigation organizations within the state and international organizations of information (FLI). However, the state and international organizations of information of the production of the investigation organizations within the state and international organizations.		- 1
and interpretation	n of ICAO Annexes 13 and 19. Analysis and interpretation of the Regulation (EC), Regulation (EU). Human factor. Utilization of inforn reports.	iation from the inve	estigation
21Y1LA	Aerobatics	KZ	2
	ng aerobatic figures. Aerodynamics and flight mechanics of aerobatic figures. Aerobatic training syllabi and aerobatic competitions. Cr		
	cs, accidents related to aerobatics. Physiological aspects of flying aerobatics. Aircraft structure loads and construction fatigue strength	•	
	recovery training (UPRT) for commercial pilots and related accidents.		
21Y1LR	Radio Technology in Aviation	KZ	2
Electric signals ar	d the wave spectrum. Analog and digital modulations. Noises. Filters. Resonance circuits. Electromagnetic field. Electromagnetic war	ve propagation. Wa	ave ranges
	in aviation, radiation and reception of electromagnetic field. Antennas in aviation, receivers and transmitters.		
21Y1MP	Matlab for project-oriented study	KZ	2
	ous is focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exercises		- 1
	les, based on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improvement		
21Y1MZ	Managerial Ethics	KZ	2
The basic terminoic	gy of managerial ethics. Basics of etiquette and rules of social contact. Social events. Etiquette of working contacts. The art of presents image. Diplomatic protocol. Managerial ethics. Business ethics.	alion and negotialic	JII. PEISUIIAI
21Y1RZ	Human Resources Management	KZ	2
	numan resources in the organization and related disciplines file. Substance, importance and challenges of human resources manage		
•	nan resource management. Human resource planning. Search, recruitment and selection of employees. Motivation, evaluation and ren		
	dismissal and redundancies of employees. Education of employees. Planning career management.		
21Y1TH	Aircraft Technical Handling	KZ	2
=	and pushing tractors. GPU. Air conditioning and heating units. Aircraft fuel equipment. De-acing and anti-icing units. Loading and unloading and units.		ment for
	ssangers onboarding and offboarding. Operational processes of aircraft technical handling and regulations. Modernization and techn		
21Y1UT	Airports Maintenance	KZ	2
Summer airport ma	intenance. Summer maintenance equipment. Winter airport maintenance. Winter maintenance equipment. De-icing / anti-icing of airc	raft. De-icing / anti-	-icing liquid.
247ALD	Operating procedures, limitations, practices.	1/7	
21ZALD	Basics of Air Transport terminology, basic rules. VFR/IFR. Basics of aerodynamics. Propulsion of aircraft. Aircraft design. Basics of navigation, radio navigation.	KZ Weight halance n	2 orformance
-	imization of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic management, grou		
. ng. n pianinng, opt	Airlines and economics. Space technologies.	a mamamig, cocai	,
21ZT	ATM Systems	ZK	2
The course intr	oduces classical and modern facilities, systems and technologies designated for ATS. Student obtains knowledge of technical princip	les and solutions a	as far as
	communication, navigation and surveillance aviation systems are concerned.		
21ZYL1	Principles of Flight 1	Z,ZK	5
-	relation between drag and speed, streamline, boundary layer, formula of continuity, formula of Bernoulli, lift and drag, air flow and pr		
attack, reactions of	wing in air flow, lift and drag of a wing and an aircraft, coefficient of lift and drag, critical angle of attack, wing with final span, induced	drag, interference,	, devices for
2477/12	lift and drag increase. Principles of Flight 2	7 71/	
21ZYL2	rinciples of Fight 2 nic longitudinal stability, neutral point, location of centre of gravity, static directional & lateral stability, dynamic directional &	Z,ZK	5 ntrol – nitch
	v (directional) & mp; roll (lateral), roll/yaw interaction, trimming, speed of sound, Mach number, compressibility, shock waves, critical	•	
(heating, operating limitations, manoeuvring envelope, gust-load diagram.	,	,
22X31	Project 1	Z	2
22X32	Project 2	Z	2
22X33	Project 3	Z	2
22Y1SZ	Forensic Expertise	KZ	2
	of forensic engineering, forensic activity, current legislature in the Czech Republic, different disciplines, notion of forensic, forensic le		
expert role in the	obtaining proofs, forensic methodology. Notion of the evidence, general principles of evidence obtaining, metrology, protocol, evidence	es collection, site i	nspection,
	forensic report, elements. Finding, expert testimony / report.		
23X31	Project 1	Z	2
23X32	Project 2	Z	2
23X33	Project 3	Z	2
23Y1DZ	Data and Their Processing for Engineering Fields Needs	KZ	2
Courses of risk, ba	sic terms, data collection, data sets, data random uncertainty and data epistemic uncertainty, data processing, hazard, risk, value so	· · · · · · · · · · · · · · · · · · ·	npirical and
	heuristic methods, hazard determination and risk determination, methods for variants' creation, decision support systems		
23Y1KO	Quantum Physics and Optoelectronics	KZ	2
00111511	Ground of quantum physics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics compor		
23Y1OK	Protection of Critical Objects and Infrastructures	KZ	2
Types of technologi	cal systems, critical item, risks and their courses, criticality, vulnerability, connectivity, dependability, resilience, failure, protection, safe	ty of critical objects	and critical
201/41/0	infrastructures.	1/7	
23Y1VS	Negotiation and Cooperation r negotiation. The influence of personality traits on the negotiations. Negotiation and commanding. Teamwork. Variants teams. Inform	KZ	n the team
	r negotiation. The initidence of personality traits on the negotiations, negotiation and commanding, reamwork, variants teams, miorin ation, the essence of negotiation, the differences in negotiation in business and in crisis situations, the principle of "win both", specific		
	trust.	and bloomly	,,
TV-1	Physical Education	Z	1
TV-2	Physical Education	Z	1
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