Study plan

Name of study plan: LOG bak.prez.20/21 (skok do 3.r.)

Faculty/Institute/Others:

Department:

Branch of study guaranteed by the department: Welcome page

Garantor of the study branch:

Program of study: Technology in Transportation and Telecommunications

Type of study: Bachelor 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: 90

The role of the block: Z

Code of the group: 1.S.BP 20/21

Name of the group: 1.sem.bak.prez. (od) 20/21 (pro B3710)

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.

	Name of the course / Name of the group of courses					
Code	(in case of groups of courses the list of codes of their members)	Completion	Credits	Scope	Semester	Role
	Tutors, authors and guarantors (gar.)					
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+22E	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+10E	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+10E	Z	Z
11GIE	Geometry Pavel Provinský, Old ich Hykš, Šárka Vorá ová Old ich Hykš Old ich Hykš (Gar.)	KZ	3	2P+2C+12E	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+8E	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+8E	Z	Z
18TED	Technical Documentation Jitka ezní ková, Vít Malinovský Jitka ezní ková (Gar.)	KZ	2	1P+1C+8E	Z	Z
15DPLG	Transportation Psychology Eva Rezlerová, Jana Štikarová	Z	2	2P+0C+6E	Z	Z
16UDOP	Introduction into Vehicles Zuzana Radová, Petr Bouchner	Z	2	2P+0C+8E	Z	Z
TV-1	Physical Education	Z	1		Z	Z

Characteristics of the courses of this group of Study Plan: Code=1.S.BP 20/21 Name=1.sem.bak.prez. (od) 20/21 (pro B3710)

11CAL1	Calculus 1	Z,ZK	7
Sequence of real numb	ers and its limit. Basic properties of mappings. Function of one real variable, its limit and derivative. Geometric properties of n	dimensional Eukl	idean space and
Cartesian coordinate sy	rstem. Geometric meaning of the differential of functions several real variables, differential calculus of functions of several rea	ıl variables.	

11LA Linear Algebra Z,ZK Vector spaces (linear combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and their solvability. Determinants 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 roads	, public mass tra	nsport. Negative
impacts of transportatio	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 c	omposites. Atten	tion is also paid
to degradation processe	es 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 analy	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 flowcharts	ind use the basic	s of Boolean
algebra with forming the	conditions for the algorithms.		
14KSP	Constructing with Computer Aid	KZ	2
"CAD systems" term de	termination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic common w	ork rules in grap	hic applications
and CA systems. Co-ord	dinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting possi	oilites, AutoCAD	environment
profiles, drawings with ra	aster foundaments).		
18TED	Technical Documentation	KZ	2
Technical standards, int	ernational standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimension	al and geometric	al accuracy,
arrangement of drawing	sheets.		
15DPLG	Transportation Psychology	Z	2
Subject of psychology a	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 of	peration.	
16UDOP	Introduction into Vehicles	Z	2
Vehicles and transporta	tion systems. Functionality and setup. Movement and drive principles. Engines and their characteristics. Rail, road, air and wa	ter transport. Alte	ernative means
of transport. Lifting equi	pment and conveyors. Legislation.		
TV-1	Physical Education	Z	1
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Code of the group: 2.S.BP 20/21

Name of the group: 2.sem.bak.prez. (od) 20/21 (pro B3710)

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 OIL THE	<u> </u>			1		
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+20E	L 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 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+10E	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+14E	L L	Z
20SYSA	Systems Analysis Zuzana B linová, Ji í R ži ka, Petr Bureš Zuzana B linová (Gar.)	Z,ZK	5	2P+2C+14E	B 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+8E	B 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+8E	L L	Z
TV-2	Physical Education	Z	1		L	Z

Characteristics of the courses of this group of Study Plan: Code=2.S.BP 20/21 Name=2.sem.bak.prez. (od) 20/21 (pro B3710)

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
_	y track geometry parameters. Route layout of railway lines. Railway line construction - railway substructure and superstructure.	1 '	•
· · · · · · · · · · · · · · · · · · ·	ms in relation to infrastructure. Operating and carriage points. Railway lines net and category. Traction in rail transport.	-,	,
18SAT	Structural Analysis	Z,ZK	4
General system of fo	rces in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determination	ate beams and sir	nple girders.
•	k. Kinematic method for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction of calculation of reactions of statically determinate systems.	ons. Cross-section	al characteristics
20SYSA	Systems Analysis	Z,ZK	5
Introduction to system	n sciences, system viewpoint, terminology, typical system analysis tasks, system identification, system interface and interface ta	sks, processes, s	ystem behaviour
•	ng functions and processes, genetic code, system identity, system architecture. Tools for system analysis - Petri nets, decision t systems, methods for soft system analysis.	ables, algorithms	for structural
14PRG	December of the second of the	1.77	_
14FNG	Programming	KZ	2
_	Programming ming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python progi	I	_
The Course Program		। ramming language	e is expanded
The Course Program here so that the parti	ming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python progr	। ramming language	e is expanded
The Course Program here so that the parti	ming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python progr cipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and so	। ramming language	e is expanded
The Course Program here so that the parti working with date an 17TEDL	ming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python progressions skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and set time, regular expressions, functions and procedures, working with files (CSV, JSON, XML).	ramming language earching, tuples, s	e is expanded ets, dictionaries,
The Course Program here so that the parti working with date an 17TEDL Basic terms in transp	ming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python progressions skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and set time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). Transport Technology and Logistics	ramming language earching, tuples, s KZ transport, organis	e is expanded ets, dictionaries,
The Course Program here so that the parti working with date an 17TEDL Basic terms in transp	ming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python progressions skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and set time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). Transport Technology and Logistics ort technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and freight.	ramming language earching, tuples, s KZ transport, organis	e is expanded ets, dictionaries,
The Course Program here so that the parti working with date and 17TEDL Basic terms in transpeach transport modul 21ZALD	ming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python progressions skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and set time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). Transport Technology and Logistics ort technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and freight is, technologic factors of the side of operator and client, organisation of city transport, logistic technologies and their aplication is,	KZ transport, organis using various trans KZ	e is expanded ets, dictionaries, 3 ation of traffic in sport modus.
The Course Program here so that the partit working with date and 17TEDL Basic terms in transpeach transport modul 21ZALD History, definitions, te	ming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python progressions skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and set time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). Transport Technology and Logistics ort technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and freight set, technologic factors of the side of operator and client, organisation of city transport, logistic technologies and their aplication of Basics of Air Transport	KZ transport, organis using various trans	e is expanded ets, dictionaries, 3 ation of traffic in sport modus. 2 ce, performance.
The Course Program here so that the partit working with date and 17TEDL Basic terms in transpeach transport modulus 21ZALD History, definitions, terilight planning, optim	ming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python progressions skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and set of time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). Transport Technology and Logistics ort technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and freight is, technologic factors of the side of operator and client, organisation of city transport, logistic technologies and their aplication is Basics of Air Transport rminology, basic rules. VFR/IFR. Basics of aerodynamics. Propulsion of aircraft. Aircraft design. Basics of navigation, radio navigation.	KZ transport, organis using various trans	e is expanded ets, dictionaries, 3 ation of traffic in sport modus. 2 ce, performance.

Code of the group: 3.S.BP 20/21

Name of the group: 3.sem.bak.prez. (od) 20/21 (pro B3710)

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 20/21 Name=3.sem.bak.prez. (od) 20/21 (pro B3710)

	of the courses of this group of Study Plan: Code=3.S.BP 20/21 Name=3.sem.bak.prez. (od) 2	<u> </u>	10)
11FYZ	Physics	Z,ZK	5
Kinematics, particle of	ynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermodynamics.		
12MDE	Transport Models and Transport Excesses	Z,ZK	3
Parameters of the tra	ffic flow and methods for their measurement. Models of the traffic flow, communications load, line and urban systems. Theory c	f queues, shock w	vaves. Quality of
transport and its asse	ssment. Statistical characteristics of transport. Transport excesses, their analysis, the causes, identify and minimize the conse	quences. Improvin	g of transport
safety and fluency.			
17TGA	Graph Theory and its Applications in Transport	Z,ZK	4
Basic terms of graph	theory, paths in graphs, flows in networks, location problems, design problems on graphs, optimum routing, use of graphs in of	her scientific disci	plines.
18PZP	Elasticity and Strength	Z,ZK	3
Tension and compres	sion. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolt	ed and welded joir	nts of structures
Analysis of deflection	curve of beams. Torsion of circular cross sections. Combined loading. Stability.		
20UITS	Introduction to Intelligent Transport Systems	Z,ZK	7
Terminology and legis	lative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamentals of i	nformation and tel	ecommunication
systems for ITS. Prince	iples and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real exam	ples of possible ap	oplications of the
principles of ITS.			

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

The role of the block: ZP

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, Jakub Kraus, Andrej Lališ, Slobodan Stoji, Lenka Hanáková, Terézia Pilmannová, Peter Vittek, 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	ZP
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
18X32	Project 2	Z	2	0P+2C	Z	ZP
20X32	Project 2	Z	2	0P+2C	Z	ZP
21X32	Project 2 Jakub Hospodka, Jakub Kraus, Andrej Lališ, Slobodan Stoji , Lenka Hanáková, Terézia Pilmannová, Peter Vittek, Natalia Guskova, Lukáš Popek,	Z	2	0P+2C	Z	ZP
22X32	Project 2	Z	2	0P+2C	Z	ZP
23X32	Project 2	Z	2	0P+2C	Z	ZP
11X33	Project 3	Z	2	0P+1C	L	ZP
12X33	Project 3 Dagmar Ko árková, Josef Kocourek, Tomáš Pad lek	Z	2	0P+1C	L	ZP
14X33	Project 3 Jana Kaliková, Jan Kr ál	Z	2	0P+1C	L	ZP

15X33	Project 3	Z	2	0P+1C	L	ZP
16X33	Project 3	Z	2	0P+1C	L	ZP
17X33	Project 3 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
18X33	Project 3	Z	2	0P+1C	L	ZP
20X33	Project 3	Z	2	0P+1C	L	ZP
21X33	Project 3 Andrej Lališ, Slobodan Stoji , Lenka Hanáková, Terézia Pilmannová, Lukáš Popek, Iveta Kameníková, Milan Kameník, Marek Šudoma, Viktor Valenta,	Z	2	0P+1C	L	ZP
22X33	Project 3	Z	2	0P+1C	L	ZP
23X33	Project 3	Z	2	0P+1C	L	ZP

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 courses in the program

Minimal number of credits of the block: 72

The role of the block: P

Code of the group: 4.S.BLOG 19/20

Name of the group: 4.sem.LOG bak.prez.(od)19/20 (pro B3710)

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:

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+12B	L	Р
17LGT	Logistics Daniel Pilát, Tomáš Horák, Eliška Glaserová Tomáš Horák (Gar.)	Z,ZK	6	3P+2C+18B	L	Р
17SFID	Public Administration and Financing in Transport	Z,ZK	4	2P+1C+12B	L	Р
11LP	Linear Programming Šárka Vorá ová, Ivan Nagy, Karel Je men Ivan Nagy Ivan Nagy (Gar.)	KZ	3	2P+1C+12B	L	Р
16DPO	Vehicle Technology Josef Mík, Josef Svoboda, P emysl Toman Josef Mík (Gar.)	KZ	2	2P+0C+10B	L	Р
17EMY	Management Science	Z	2	2P+0C+8B	L	Р
17PAZ	Carriage and Forwarding	Z	2	2P+0C+8B	L	Р
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+10B		Р

11MSP	Modeling of Systems and Processes	Z,ZK	4
System and subsyste	m, external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of d	ifferential and differ	ential equations.
Linear and nonlinear	system, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer function	on. Stability of LTI s	systems.
Discretization of cont	inuous systems. System interconnection.		
17LGT	Logistics	Z,ZK	6
Logistics definition, b	asic concepts, store, warehouse, transport and handling equipment, logistics technology, logistics centers, information and inte	elligent logistics sys	stems, logistics
city.			
17SFID	Public Administration and Financing in Transport	Z,ZK	4
Basic issues of transp	port and transport policy in the social context, environmental issues in transport, economical aspects of transport, public admin	istration and financ	ing of transport.
11LP	Linear Programming	KZ	3
			•
Formulation of the pr	poblem of linear programming, transcription of some practical problems to the linear programming problems. Simplex and conve	1 1	x method, basic
•		1 1	x method, basic
•	oblem of linear programming, transcription of some practical problems to the linear programming problems. Simplex and conve	1 1	x method, basic
solutions, duality prin	oblem of linear programming, transcription of some practical problems to the linear programming problems. Simplex and conveciple in linear programming, stability of solution of linear programming problem.	ex polyedra. Simple	2
solutions, duality prin 16DPO Vehicle. Functions, pr	oblem of linear programming, transcription of some practical problems to the linear programming problems. Simplex and convecible in linear programming, stability of solution of linear programming problem. Traffic problem. Vehicle Technology	ex polyedra. Simple	2
solutions, duality prin 16DPO Vehicle. Functions, pr	beliem of linear programming, transcription of some practical problems to the linear programming problems. Simplex and convecible in linear programming, stability of solution of linear programming problem. Traffic problem. Vehicle Technology inciples. Drive, vehicle construction. Road transport, safety, heavy duty vehicle desing, dynamics. Rail transport, safety, carriage	ex polyedra. Simple	2
solutions, duality print 16DPO Vehicle. Functions, print Transshipment. Technology 17EMY	bolem of linear programming, transcription of some practical problems to the linear programming problems. Simplex and convecible in linear programming, stability of solution of linear programming problem. Traffic problem. Vehicle Technology inciples. Drive, vehicle construction. Road transport, safety, heavy duty vehicle desing, dynamics. Rail transport, safety, carriage conjugical components of various modes of transport. Management and control of various means of transport. Safety.	KZ ge design. Drive. El	2 ectric traction.
solutions, duality print 16DPO Vehicle. Functions, print Transshipment. Techn 17EMY The introduction to ea	bolem of linear programming, transcription of some practical problems to the linear programming problems. Simplex and convecible in linear programming, stability of solution of linear programming problem. Traffic problem. Vehicle Technology inciples. Drive, vehicle construction. Road transport, safety, heavy duty vehicle desing, dynamics. Rail transport, safety, carriagological components of various modes of transport. Management and control of various means of transport. Safety. Management Science	KZ ge design. Drive. El Z ethods to modelise	2 ectric traction. 2 economical
solutions, duality print 16DPO Vehicle. Functions, print Transshipment. Techn 17EMY The introduction to ea	beliem of linear programming, transcription of some practical problems to the linear programming problems. Simplex and convecible in linear programming, stability of solution of linear programming problem. Traffic problem. Vehicle Technology inciples. Drive, vehicle construction. Road transport, safety, heavy duty vehicle desing, dynamics. Rail transport, safety, carriage to longical components of various modes of transport. Management and control of various means of transport. Safety. Management Science conomical-mathematical models before its application in concrete technical and economical cases. The basic mathematical means of transports and convergence in the same programming problems. Simplex and convergence in linear programming problems. Simplex and convergence in linear programming problems. Simplex and convergence in linear programming problems. Traffic problems. Vehicle Technology Inciple Technol	KZ ge design. Drive. El Z ethods to modelise	2 ectric traction. 2 economical
solutions, duality print 16DPO Vehicle. Functions, print Transshipment. Techn 17EMY The introduction to estimations. Several cla	beliem of linear programming, transcription of some practical problems to the linear programming problems. Simplex and convecible in linear programming, stability of solution of linear programming problem. Traffic problem. Vehicle Technology inciples. Drive, vehicle construction. Road transport, safety, heavy duty vehicle desing, dynamics. Rail transport, safety, carriage toological components of various modes of transport. Management and control of various means of transport. Safety. Management Science conomical-mathematical models before its application in concrete technical and economical cases. The basic mathematical measses of problems are formulated and different methods used in qualitatively distinct real situations are introduced. The tasks of	KZ ge design. Drive. El Z ethods to modelise of interpretation and	2 ectric traction. 2 economical diapplication. 2
solutions, duality print 16DPO Vehicle. Functions, print Transshipment. Techn 17EMY The introduction to estimations. Several cla 17PAZ Contracts of carriage	beliem of linear programming, transcription of some practical problems to the linear programming problems. Simplex and convecible in linear programming, stability of solution of linear programming problem. Traffic problem. Vehicle Technology inciples. Drive, vehicle construction. Road transport, safety, heavy duty vehicle desing, dynamics. Rail transport, safety, carriage and components of various modes of transport. Management and control of various means of transport. Safety. Management Science conomical-mathematical models before its application in concrete technical and economical cases. The basic mathematical measures of problems are formulated and different methods used in qualitatively distinct real situations are introduced. The tasks of Carriage and Forwarding	KZ ge design. Drive. El Z ethods to modelise of interpretation and	2 ectric traction. 2 economical diapplication. 2
solutions, duality print 16DPO Vehicle. Functions, print Transshipment. Techn 17EMY The introduction to estimations. Several cla 17PAZ Contracts of carriage	beliem of linear programming, transcription of some practical problems to the linear programming problems. Simplex and convecible in linear programming, stability of solution of linear programming problem. Traffic problem. Vehicle Technology inciples. Drive, vehicle construction. Road transport, safety, heavy duty vehicle desing, dynamics. Rail transport, safety, carriage and components of various modes of transport. Management and control of various means of transport. Safety. Management Science conomical-mathematical models before its application in concrete technical and economical cases. The basic mathematical measures of problems are formulated and different methods used in qualitatively distinct real situations are introduced. The tasks of Carriage and Forwarding and forwarding, waybills and documents; transport modes, multimodal transport, tariffs and prices in transport, rights and obliging and forwarding, waybills and documents; transport modes, multimodal transport, tariffs and prices in transport, rights and obliging the content of the con	KZ ge design. Drive. El Z ethods to modelise of interpretation and	2 ectric traction. 2 economical diapplication. 2
solutions, duality print 16DPO Vehicle. Functions, print 17EMY The introduction to estituations. Several cla 17PAZ Contracts of carriage forwarders, duty and	beliem of linear programming, transcription of some practical problems to the linear programming problems. Simplex and convecible in linear programming, stability of solution of linear programming problem. Traffic problem. Vehicle Technology inciples. Drive, vehicle construction. Road transport, safety, heavy duty vehicle desing, dynamics. Rail transport, safety, carriage analogical components of various modes of transport. Management and control of various means of transport. Safety. Management Science conomical-mathematical models before its application in concrete technical and economical cases. The basic mathematical measures of problems are formulated and different methods used in qualitatively distinct real situations are introduced. The tasks of Carriage and Forwarding and forwarding, waybills and documents; transport modes, multimodal transport, tariffs and prices in transport, rights and obligating agreements, INCOTERMS, insurance in transport.	KZ ge design. Drive. El Z ethods to modelise of interpretation and Z gations of carriers,	2 ectric traction. 2 economical application. 2 hauliers and

Code of the group: 5.S.BLOG 19/20

Name of the group: 5.sem.LOG bak.prez.(od)19/20 (pro B3710)

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
17EDPO	Economics of Transport Company	Z,ZK	5	2P+2C	Z	Р
17FEU	Public Administration and Financing in Transport	Z,ZK	4	2P+1C	Z	Р
17MAS	Small and Medium Enterprise	Z,ZK	3	2P+1C	Z	Р
17TVD	Technology of Public Transport Vít Janoš, Zden k Michl, David Ju ík, Ji í Pospíšil Vít Janoš (Gar.)	Z,ZK	5	2P+2C+18B	Z	Р
14DMG	Datamining Radek Holý Radek Holý (Gar.)	KZ	2	0P+2C+10B	Z	Р
17MEKA	Methods of Economics Analysis	KZ	2	2P+0C	Z	Р
23ZAP	Basics of Law Milena Macková Milena Macková (Gar.)	Z	2	2P+0C+10B	Z	Р

Characteristics of the courses of this group of Study Plan: Code=5.S.BLOG 19/20 Name=5.sem.LOG bak.prez.(od)19/20 (pro B3710)

17EDPO	Economics of Transport Company	Z,ZK	5
	Economics of Transport Company	1 ' 1	-
	ility, marginal costs, function of supply and demand, market equilibrium, perfect competition and types of market arrangement	•	rket, transport
	ment, balance sheet, costs, revenue, profit and maximalization of profit. Financial management in transport, business plan, tax		
17FEU	Public Administration and Financing in Transport	Z,ZK	4
To get a basic overview programmes.	w of the EU regional policy and its practical execution on the level of the member state, specific ability to find and analyze info	rmation about the	EU support
17MAS	Small and Medium Enterprise	Z,ZK	3
Small and medium er	terprise - plans, market, analysis, finance, management, decision making, survival, growth.		
17TVD	Technology of Public Transport	Z,ZK	5
The course contents	a detailed description of new knowledge and basic principles of hierarchical planning of public transport system accenting the	general transport p	lanning and
quantified transport d	emand. The course would be oriented on multiple and multi-level optimisation of passenger public transport system.		
14DMG	Datamining	KZ	2
Types of data source:	and knowledge, data warehouses and OLAP technology for data mining, data preprocessing in the process of knowledge ac	quisition systems fo	or data mining,
mining characteristics	of concepts (classes), mining association rules from relational db. and data warehousing, classification (decisions tree, Bayes	ian cob., using neu	ıral networks).
Prediction. Cluster ar	alysis. Mining in complex structured data, multimedia dbf., www.		
17MEKA	Methods of Economics Analysis	KZ	2
The techniques of ec	onomical analysis in the domain of analysis of dependencies, analysis and construction of time series and comparsion of statis	tical values using	differencies and
indices.			
23ZAP	Basics of Law	Z	2
Basic orientation in th	e Czech legal system. The course is primarily intended to provide students with orientation in fundamentals of the Czech Rep	ublic, legal system	and in various
forms of law, including	adoption of the basic principles of European Community law. The course consists of selected chapters from the public and priv	ate law and Europ	ean Community

Code of the group: 6.S.BLOG 19/20

Name of the group: 6.sem.LOG bak.prez.(od)19/20 (pro B3710)

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
17IVD	Integration of Public Transport	ZK	4	3P+0C+12B	L	Р
17RAC	Rationalization and Quality of Transport	Z,ZK	7	4P+2C+22B	L	Р
17RPT	Project Management	Z,ZK	5	2P+2C+14B	L	Р
14MPG	Modern Programming Approaches Michal Je ábek, Vít Fábera Michal Je ábek Vít Fábera (Gar.)	KZ	2	0P+2C+8B	L	Р
17GEDS	Geography of Transport Systems Miroslav Marada Miroslav Marada (Gar.)	KZ	2	2P+0C+8B	L	Р
17MRZ	Managerial Decision Making	Z	2	2P+0C+8B	Ĺ	Р
23DPSP	Traffic Law and Related Regulations	Z	1	2P+0C+8B	L	Р

Characteristics of the courses of this group of Study Plan: Code=6.S.BLOG 19/20 Name=6.sem.LOG bak.prez.(od)19/20 (pro B3710)

Onal actoristics of	the courses of this group of cludy Flant. Code=0.0.DECO 13/20 Name=0.3cm.ECO bak.pre	2.(00 <i>)</i> 13/20 ()	510 D31 10)
17IVD	Integration of Public Transport	ZK	4
Transport policy, plannii	ng, contracts, funding, clearing of traffic receipts, tariff systems, traffic and carriage controls, legal conditions within public traffic	nsport.	
17RAC	Rationalization and Quality of Transport	Z,ZK	7
Transport system, trans	portation funding, cost calculation, efficiency, transport rationalization, quality management, standards and quality standardizat	ion, quality manag	jement systems,
quality management in	transport and logistics, marketing and transport quality, quality costs, quality measurement and monitoring, statistics in qualit	y management, in	nproving, focus
on the customer.			
17RPT	Project Management	Z,ZK	5
Basic terms of the proje	ct management, project management standards, organizational structures in the project management, projects in transport	and transport infra	structure and
their specifics, feasibility	y study and CBA, project evaluation, PPP projects.		
14MPG	Modern Programming Approaches	KZ	2
Principles of object orie	nted programming, polymorphism, references, memory allocation, inheritage, generic programming, operator overloading, S	TL library, object i	mplementation
of abstract data types, of	graph and graph algorithm implementation focused on logistic problems.		
17GEDS	Geography of Transport Systems	KZ	2
Regional differentiation	of the transport system. Sociogeographic regionalization and its relation to transport. Transport and local and regional develo	pment. Spatial int	eraction -
theoretical and methodo	ological framework. Mobility research - travel behavior, mode choice and the influence onto "modal-split." Modal competition. Prac	tical use of transp	ort-geographical
analysis in transportation	on planning.		
17MRZ	Managerial Decision Making	Z	2
The course is divided in	to two main sections. The first section deals with individual-level processes that influence managers' decisions. The second s	section considers	collective (that
is, group or organization	nal) forces that affect managers' decisions.		
23DPSP	Traffic Law and Related Regulations	Z	1
Analysis of selected law	rs in transportation domain (e. g. Road Act, Road Transport Act, Civil Aviation Act, Railways Act, Inland Navigation Act), select	cted EU transport	legislation.

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-BLOG 20/21

Name of the group: PVP bak.prez.LOG 20/21

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
21Y1AM	Aeronautical Information Management (AIM)	KZ	2	2P+0C	Z	PV
20Y1AF	Alternative Forms of Transportation Project Financing	KZ	2	2P+0C	Z	PV
18Y1AM	Anatomy, Mobility and Safety of Man Jitka Jirová	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
11Y1BK	Error Detection Codes for Interlocking Systems Lucie Kárná	KZ	2	2P+0C	Z	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
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
17Y1EV	Public Sector Economy Veronika Faifrová	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 Jan Feit	KZ	2	2P+0C	Z	PV
18Y1EM	Experimental Methods in Mechanics Daniel Kytý	KZ	2	2P+0C	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
20Y1KP	Communication and presentation skills Ji í R ži ka, Patrik Horaž ovský, Kristýna Navrátilová, Eva Haj iarová	KZ	2	2P+0C	Z	PV
23Y1KM	Crisis Management	KZ	2	2P+0C	Z	PV
23Y1KO	Quantum Physics and Optoelectronics	KZ	2	2P+0C	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
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	L	PV
20Y1OI	Fare Collection and Information Systems Patrik Horaž ovský, Milan Sliacky Milan Sliacky (Gar.)	KZ	2	2P+0C	L	PV
14Y1OJ	Object - oriented programming in JAVA	KZ	2	2P+0C	L	PV
14Y1OP	Operating System	KZ	2	2P+0C	Z	PV
17Y1OF	Personal Finance	KZ	2	2P+0C	Z	PV
20Y1OK	Road Lighting František Kekula	KZ	2	2P+0C	L	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
21Y1PA	Air Traffic Control Operating Procedures Terézia Pilmannová	KZ	2	2P+0C	Z	PV
12Y1PU	Organization Disposition of Railway Stations	KZ	2	2P+0C	L	PV
12Y1RU	Railway Lines Reconstruction	KZ	2	2P+0C	Z	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	L	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
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
17Y1SK	Urban and Regional Rail Transport Systems Ji í Pospíšil Ji í Pospíšil (Gar.)	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
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
14Y1WG	Webdesign	KZ	2	2P+0C	Z	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 Šárka Vorá ová (Gar.)	KZ	2	2P+0C	L	PV
14Y1ZJ	Fundamentals of programming in JAVA	KZ	2	2P+0C	Z	PV
12Y1ZU	Principles of Urbanism Karel Hájek	KZ	2	2P+0C	Z	PV
15Y1ZV	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 courses of this group of Study Plan: Code=Y1-BLOG 20/21 Name=PVP bak.prez.LOG 20/21 Aeronautical Information Management (AIM) 21Y1AM ΚZ 2 Definition and basic overview of AIS and AIM. Transition from AIS to AIM. Regulatory base. Provision of AIS/AIM in the Czech Rep. AIP (Aeronautical Inf. Publication). VFR Manual of the Czech Rep. AIRAC System. NOTAM messages.PIB (Pre-flight Informtion Bulletin). AIC (Aeoronautical Inf. Circulars). Aeronautical Charts. EAD (Europena AIS Database). QMS (Quality Mng. System). ADQ (Aeronautical Data Quality). AIXM (Aeronautical Inf. Exchnage Format). 20Y1AF Alternative Forms of Transportation Project Financing ΚZ 2 In will be specifed such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt payments come from its budget but the final debtor is not a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of securities as an alternative source of transportation and telecomunication projects. Anatomy, Mobility and Safety of Man 18Y1AM K7 Survey of tissues. Anatomical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circulation and nervous system. Structure and biomechanics of muscular-skeletal system. Injury of human organs and musculo-skeletal system during traffic accidents. Mobility of ill and injured man and his treatment. Human joint prostheses. Protective means and traffic safety regulations. K7 14Y1AV Animation and Visualization Advanced modifications and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and Space Warp objects. Atmospheric and other effects, rendering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animation using Inverse Kinematics. 20Y1AE **Applied Electronics** 2 Basic electronic semiconductor components, their principles, characteristics and typical connection diagrams. Semiconductor PN junction diodes, transistors, thyristor, operational amplifiers, basic logic gates. Functions of basic electronic circuits and methods for their designs (rectifiers, voltage regulator with Zener diode, transistor as an amplifier, operational amplifier as an inverting and noninverting amplifier). 14Y1BE **Barrierless Transport** ΚZ 2 The issue of barrierless accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students will gain theoretical knowledge of barrierless environment roads, railway stations, public transport stops, terminal buildings, vehicles, public transport, information and orientation systems and transportation technology. Theoretical knowledge will be supplemented by practical examples. 21Y1BC Aviation safety and security ΚZ 2 History of safety and security development in aviation. Modern tools for safety and security management. Research and development of safe and secure systems. 15Y1BO Work Safety and Health Protection in Transportation ΚZ 2 Fundamental legislative, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation. Health protection programmes, health insurance of home and foreign business trips, statistics, working practice. Error Detection Codes for Interlocking Systems ΚZ 2 Safe communication and methods for its assuring. Safety codes – linear codes, cyclic codes, BCH codes, Reed-Solomon codes. Transmission channels, detection of transmission errors, probability of undetected error. Design and assessment of detection codes; requirements of the European standard EN 50159. 21Y1BS Unmanned aircraft systems 1 K7 2 Unmanned Aviation Development. Aircraft design. Legislation in force in the Czech Republic. Planning and execution of the flight. Airspace division. Operational risks and operational procedures. Practical flights. 14Y1BM Biometric Methods K7 2 Basic biometric terms, authentication methods, principles and performance measurement of biometric systems, overview of biometric technologies, hand geometry, iris recognition, retina recognition method, 2D and 3D face recognition, vein patterns on the wrist, ear biometrics, fingerprint recognition, skin spectroscopy, behavioral methods, the use of biometrics in transport applications, safety and risks of biometric technologies. 15Y1DZ History of Railway ΚZ 2 Horse-drawn railways, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Republic", electric traction, World War II railways, railway development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connections, railway lines construction, railway accidents, railway junctions. Excursions and projections 12Y1DS Project Documentation in Practice K7 2 Project documentation creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process. Budget and pricing. Practical creation of some project documentation parts. Public Sector Economy Economic and financial theory of public sector, public choice theory, externalites, decisions about public finance allocation, economic assessment of public projects (CBA, MCA, CEA), tax system of the CR, state budget, management of public projects a their economic efficiency assessment, way of elaboration of PPP projects, funding from EU funds, program HDM-4

20Y1EK Qualification in Electrical Engineering	KZ	2
Practical experience with measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock has	-	_
voltage, maximum allowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, leg in relation to health and safety and electrical engineering.	Jisiation, standards a	and regulations
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 e	nergy. Combustion 6	engine, electric
drive, steam engine, air engine. Energy accumulation means, accumulator, flywheel, fuel cell. Energy recuperation. WTW analysis.		
20Y1EA Environmental Aspects of Transport	KZ	2
State of the atmosphere, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, proba Air quality, main pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and trar		
15Y1EH European Integration within Historical Context	KZ	2
Versailles system, formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communi	l l	I
goals. Europe after Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war	and its consequence	es for Europe.
New quality of French-German relationship - a driving power of starting European integration.	1/7	
18Y1EM Experimental Methods in Mechanics The purpose and role of experimental mechanics. Sensors for mechanical testing. Overview of experimental methods. Destructive and non-destru	KZ	2 prials Design of
experimental procedures and sample preparation. Tensile and bending tests. Electrical resistance strain gages. Optical based strain measuremen	_	_
Instrumented hardness testing. Introduction to electron microscopy. Errors in measurement.	_	
15Y1FD French Area Studies and Transportation	KZ	2
France - geography and regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air		terminology.
French society and culture. Current political system. System of education, studying in France. Selected authors of French literature. French gastro 14Y1HW Computer Hardware	KZ	2
Computer architecture, basics of logical circuits design and their realization using FPGA. In detail, description of computer architecture and separation of computer architecture and separation using FPGA.	1	l .
arithmetic and logical units, I/O subsystem.		,
15Y1HL History of Civil Aviation	KZ	2
Beginnings of flying, development of aircrafts lighter than air. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Developme	•	•
World airports. Famous aviators. Helicopters. CSA airplanes. Development of aircrafts in Czechoslovakia between the years 1945-1989. Classic e aviation. Modern era of civil aviation. Airline companies. Supersonic flying.	ra of aviation. Golde	en era of civil
15Y1HD History of City Mass Transport	KZ	2
History of city mass transport in the world, development of tram, bus and trolley-bus systems. History of transport networks in the world, current to	1	
clearance systems. History of city transport in Prague and Brno. History of tram, bus and trolley-bus operation systems in the Czech Republic and	l Slovakia.	
12Y1HD Traffic Noise	KZ	2
Acoustic introduction, basic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regular series in accounting the production of production in the production of p		
area, principles of urban acoustic, noise transmission, soundproofing. Types of noise sources in area. Determination of acoustic situation in the accomputing and measurement of transport noise. Acoustic studies, measuring protocol.	ea of interest. Metho	odology of
15Y1HE Work Hygiene and Ergonomics in Traffic	l KZ	2
15Y1HE Work Hygiene and Ergonomics in Traffic Basic knowledge of occupational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of the	KZ ese factors on healt	2 h of workers.
Basic knowledge of occupational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of the Creation and protection of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technolog	ese factors on healt	h of workers.
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14Y1MP	Modeling Complex Assemblies and Models in Parametric Modeller	KZ	2
	ning - tools and methodology of working subassemblies and assemblies, sheet metal parts modelling, welded assemblies, pip	elines, and distribut	tion lines.
-	rendering - physical and material properties, lighting sources. MKP - visual example.		
15Y1MK	Modern History in Context: Every Day Life and Transport	KZ	2
	modern history of every day life, science, technology and transport in a wider context.	V7	2
15Y1NE Recent economic and	German in the Economy and Society I social issues of German speaking countries and of the EU. Reading and listening of texts. Lexical, grammatical and semanti	KZ	
selected topics.	r social issues of octimal speaking countries and of the Eo. Acading and isleming of texts, Ecklodi, grammatical and semantic	c dilalysis of texts. L	21300331011 011
23Y1OK	Protection of Critical Objects and Infrastructures	KZ	2
	I systems, critical item, risks and their courses, criticality, vulnerability, connectivity, dependability, resilience, failure, protection,	safety of critical obj	ects and critic
nfrastructures.			
20Y1OI	Fare Collection and Information Systems	KZ	2
-	ns in public transport and their components (on-board units, validators, turnstiles,). Information systems and their compone ors (cycles, location or current delay of vehicles,). The issue of tariff systems. Other examples of clearance systems (parkin		ıbles, maps,
14Y1OJ	Object - oriented programming in JAVA	KZ	2
	capsulation. Classes. Attributes. Access modifiers. Methods and overloading. Special methods (constructors, getters / setters	1	
	e. Polymorphism. Statics, constants, interfaces, abstract classes, enum, packages, exceptions, collections, generics, lambda	•	
14Y1OP	Operating System	KZ	2
Distributions. Installat	ion GNU/Linux OS. X-window system. Rights management - users and groups, ACL rights. Filesystems and attributes. Progra	ms and processess	. OS boot,
	ole programs / commands. Config files. SW management, package systems. Programs in graphic shell - text, spreadsheet, gra	aphic editors, sound	l, video and
	ces management. Safe and secure configuration of OS. Remote administration.	1/7	
17Y1OF	Personal Finance	KZ	2
· · · · · · · · · · · · · · · · · · ·	lget, financing of basic living needs), debt (loans and credits, payment instruments, interest and fees, debt trap), financing of l ancing), savings and investments (investment horizon, return, risk, investment strategy), insurance (insurance types, suitability		-
retirement savings a			
20Y1OK	Road Lighting	KZ	2
sasic lighting quantitie	es and terms, street lighting components (luminaires, control cabinets for street lighting, street lighting cables), characteristics of	luminaires (lifetime	of light source
-	dards, measurement of illuminance and luminance in road lighting, tunnels, conceptual approach to street lighting design, lig	hting calculations in	DIALux and
Relux, street lighting		1	
1Y1PV	Parametrical and Multicriterial Programming	KZ	2
	m of linear programming with a parameter in objective function, on right sides and in the matrix of coeficients of linear constraint		
7Y1PM	Personnel Management group, man as personality, planning, choice, evaluation and education of human sources, work adaptation, teamwork, interc	KZ	2
2Y1PC	Pedestrian and Cycling Transport	KZ	2
	s. Pedestrian crossings. Modifications for blind, dim-sighted and disabled people. Design of cycle routes network. Ways of cycle	1	
•	n of cyclists from other transport modes. Cycle tracks and its design - one way streets, reserved traffic lanes, bus stops, cross	-	
crossroads. Traffic sig	ns and road marking for cyclists.		
14Y1PG	Computer Graphics	KZ	2
	hic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with e	diting programs (wi	thin the user
14Y1P2	ers, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics cards.	V7	2
	Computer Aid of Transportation Projecting 2 careful for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting	KZ	
	s, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic trans		
ection). Basics of 3D	, , , , , , , , , , , , , , , , , , , ,		Ü
I8Y1PS	Computer Simulations in Mechanics	KZ	2
•	ew of tools for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model develo	•	_
	ms. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary condition	s and application of	the load. Bas
	d modal analysis. Introduction to complex nonlinear problems.	V7	
4Y1PI ata-information-kno	Corporate Information System wledge, components of information system, syntatic and semantic sense of data, structure of corporate information system, p	KZ articular information	2 system
	tion, storage, etc.), corporate information politic and information control, risks of information system operation, legal environme		•
•	em, information system security, data protection, safety politics.	•	
4Y1PZ	Advanced Data Processing in Spreadsheets	KZ	2
	ar with principles of working in a spreadsheet. Graphic layout of the table appearance, formatting of numbers, insertion of of numbers, i		-
-	ection. Working with large spreadsheets, filters, advanced filters, database functions. Pivot tables and charts, conditional formatt	ing, solution finding,	solver, macro
	les and questions from various companies and training.	1/7	
2Y1PD	Assessment of Transport Structures ort structures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibilit	KZ	2
-	n the landscape. Rating fragmentation and landscape connectivity in the preparation of linear structures. Practical examples c	=	
ne environment.	, , , , , , , , , , , , , , , , , , , ,		.
0Y1PK	Product Quality Management Processes	KZ	2
	organization management. Management systems and international standards; quality management systems. Quality products		
=	ns management, management principles. Principles of process management, monitoring and measurement systems management	ent. Uniform framew	ork of standar
	nent. Process management principles. Metrology and testing. Product certification.	· · · -	
4Y1PJ	C Programming Language	KZ	2
	age. Preprocessor, basics of the C language (data types, syntax, commands), functions, pointes, dynamical memory allocation ostract data types (FIFO, LIFO, list), programming techniques (sorting, searching, recursion), using bitwise oprerators.	, string, files, structu	ires and unior
12Y1C1	Designing Roads in Civil 3D I	KZ	2
	Designing Roads in Civil 3D i d to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go thro	1	
	ng, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation.	-	-
planation of the tra	ffic building design in the real-life profession.		

	Designing Roads in Civil 3D II	KZ	2
	the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through	-	_
	, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. Th I. Students learn to design intersections.	ie previousiy acqu	iired skills are
	3D Modeling in AutoCAD	KZ	2
	tric modeller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup creation, object		
connected with external	database. Basic definition of work with lights, materials and reflexes. Models presentation.		
16Y1PV	Operation, Construction and Maintenance of Vehicles	KZ	2
•	uction. Vehicle maintenance. Vehicle diagnostics. Maintenence and repair plans. Engine maintenance and emission measure	ment. Transmissi	on mechanism.
General principles of en	· · ·		
	Air Traffic Control Operating Procedures	KZ	2
	e ATC simulator with the following focus - getting familiar with the simulation environment, acquiring basic habits, aircraft idel rance, use of RNAV points. Practical exercises focused on the basis of vectoring, timely application of vertical spacing, EST a	-	-
•	ACH airspace, arrivals, departures and conflict solutions.	and rev moodag	o transmission.
12Y1PU	Organization Disposition of Railway Stations	KZ	2
Connecting station. Pas	senger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zo	ne stations. Form	ation yards.
	ology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic railway n		
	Railway Lines Reconstruction	KZ	2
	rational, maintaining lines and stations, geometrical alignment of railway line, vehicles for railway superstructure and substruins, preparation of railway lines reconstruction and maintenance, process of ralway line reconstruction.	cture maintenanc	e, scheduling
16Y1RE		KZ	2
	Control and Electronic Vehicle Systems regulation. Tools for analytical solution, linear system description. Basic types of a regulator (PID), properties, advantages, disar		
, ,	Electric drive. Vehicle communication bus (CAN, LIN, FlexRay, ISObus, KWP2000 protocole etc.). Vehicle electronic control,	•	
comfort systems.		•	
	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	remuneration of s	staff. Positioning,
	cies of employees. Education of employees. Planning career management.	V7	
17Y1ST	Titan Simulation game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same produ	KZ	2 price and
= .	nd capacity of production, plan budgets for marketing, research and development. They become familiar with the consequen		
	ports and they use this information for other business decisions.		,
20Y1SC	Sensors and Actuators	KZ	2
-	actuators. Basics of measuring theory and actuating influence. The respective technologies and construction principles. Sensor	s of mechanical, e	lectro-magnetic,
	idity), chemical and particle flow values. Electrical, pneumatic and hydraulic actuators and solid phase elements.		
17Y1SL	Sociology of Human Resources	KZ	2
of the organization.	eir importance, work group as a special kind of social group, communication, personal management, modern management, h	iuman resources p	planning, culture
	Transportation Software Engineering	K7	2
11Y1SI	Transportation Software Engineering re engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and implen	KZ mentation using fo	2 rmal techniques
11Y1SI		ı	
11Y1SI Basic concepts of software and practical usuage.		ı	
11Y1SI Basic concepts of softwa and practical usuage. 16Y1KS Quality and reliability the	Quality and Reliability of Vehicles or engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and implementation and Reliability of Vehicles or in design, development, production and operation of vehicles. Definition and possible approach to quality and reliability.	mentation using fo	rmal techniques 2 MEA (Failure
11Y1SI Basic concepts of softwa and practical usuage. 16Y1KS Quality and reliability the Mode and Effects Analy	Quality and Reliability of Vehicles or engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and implement analysis and Reliability of Vehicles or yield in the second of the second	mentation using fo	rmal techniques 2 MEA (Failure
11Y1SI Basic concepts of softwa and practical usuage. 16Y1KS Quality and reliability the Mode and Effects Analy Knowledge-based syste	Quality and Reliability of Vehicles cory in design, development, production and operation of vehicles. Definition and possible approach to quality and reliability. He sis), QFD (Quality Function Deployment), DFx (Design for Assamly, Manufacturying, Quality, Services) and other methods ms of quality and reliability, data collection.	mentation using fo KZ Key legislation. Fisused in industria	rmal techniques 2 MEA (Failure I applications.
11Y1SI Basic concepts of softwa and practical usuage. 16Y1KS Quality and reliability the Mode and Effects Analy Knowledge-based syste 12Y1SU	Quality and Reliability of Vehicles ory in design, development, production and operation of vehicles. Definition and possible approach to quality and reliability. He sis), QFD (Quality Function Deployment), DFx (Design for Assamly, Manufacturying, Quality, Services) and other methods ms of quality and reliability, data collection. Road Management and Maintenance	KZ Key legislation. Fisused in industria	2 MEA (Failure I applications.
11Y1SI Basic concepts of softwa and practical usuage. 16Y1KS Quality and reliability the Mode and Effects Analy Knowledge-based syste 12Y1SU Getting familiar with own	Quality and Reliability of Vehicles ory in design, development, production and operation of vehicles. Definition and possible approach to quality and reliability. He sis), QFD (Quality Function Deployment), DFx (Design for Assamly, Manufacturying, Quality, Services) and other methods ms of quality and reliability, data collection. Road Management and Maintenance lership of roads in the Czech Republic and the administration of the road at the state and county level. It is presented development and design and implement and maintenance development.	KZ Key legislation. Fits used in industria	2 MEA (Failure I applications.
11Y1SI Basic concepts of softwa and practical usuage. 16Y1KS Quality and reliability the Mode and Effects Analy Knowledge-based syste 12Y1SU Getting familiar with own medium and long-terms	Quality and Reliability of Vehicles ory in design, development, production and operation of vehicles. Definition and possible approach to quality and reliability. He sis), QFD (Quality Function Deployment), DFx (Design for Assamly, Manufacturying, Quality, Services) and other methods ms of quality and reliability, data collection. Road Management and Maintenance	KZ Key legislation. Fits used in industria	2 MEA (Failure I applications.
11Y1SI Basic concepts of softwa and practical usuage. 16Y1KS Quality and reliability the Mode and Effects Analy Knowledge-based syste 12Y1SU Getting familiar with owr medium and long-terms classroom as well as inventor and software concepts.	Quality and Reliability of Vehicles every in design, development, production and operation of vehicles. Definition and possible approach to quality and reliability. He sis), QFD (Quality Function Deployment), DFx (Design for Assamly, Manufacturying, Quality, Services) and other methods ms of quality and reliability, data collection. Road Management and Maintenance lership of roads in the Czech Republic and the administration of the road at the state and county level. It is presented develop trategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and regions.	KZ Key legislation. Fits used in industria	2 MEA (Failure I applications.
11Y1SI Basic concepts of softwa and practical usuage. 16Y1KS Quality and reliability the Mode and Effects Analy Knowledge-based syste 12Y1SU Getting familiar with owr medium and long-terms classroom as well as inv 17Y1SK Factors affecting transport	Quality and Reliability of Vehicles every in design, development, production and operation of vehicles. Definition and possible approach to quality and reliability. It is presented development, production and operation of vehicles. Definition and possible approach to quality and reliability. It is is, QFD (Quality Function Deployment), DFx (Design for Assamly, Manufacturying, Quality, Services) and other methods ms of quality and reliability, data collection. Road Management and Maintenance ereship of roads in the Czech Republic and the administration of the road at the state and county level. It is presented develop trategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and regestment activity in highway engineering. Urban and Regional Rail Transport Systems ort demand, modal-split, distribution of passenger flows on public regional transport lines. Optimization of line management, I	KZ Key legislation. Fits used in industriate KZ pment of road net pair methods are KZ line networking. C	Trmal techniques 2 MEA (Failure I applications. 2 work, short, discussed in the 2 reating and
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12Y1VC	Waterways and Shipping	KZ	2
	ort. The position of water transport in the transport system of the Czech Republic and the EU. Advantages and disadvantage	1	
•	e, a network of waterways in the Czech Republic. Construction of the waterway and its equipment. Management of waterways	•	•
in inland navigation, na	avigation rules of operation, navigation maps.	•	0 0
23Y1VS	Negotiation and Cooperation	KZ	2
-	egotiation. The influence of personality traits on the negotiations. Negotiation and commanding. Teamwork. Variants teams. In	l .	ole in the team.
	on, the essence of negotiation, the differences in negotiation in business and in crisis situations, the principle of "win both", sp		
trust.			0 ,
14Y1VM	Development of Applications for Mobile Devices	KZ	2
	mming, Java programming language, development environment, operating system Android, development application - widge	1	_
permissions, services,		.,	,
16Y1VT	Development in Railroad Vehicles	KZ	2
-	ion. Railroad vehicle parametres regulation. Control and driving of railroad vehicles. Importance in heavy duty and personal t	1	
	rials in design. International standardization.		
14Y1WG	Webdesign	KZ	2
	basics of HTTP communication, URL and addressing, HTML5 markup language, advanced CSS3 techniques, accessible ar		_
	anagement systems, web server installation + configuration directives. The subject matter will be trained on examples.	ia adabid web raid	o, reopendive
14Y1W1	Webdesign 1	KZ	2
	basics of communication HTTP, URL and addressing, markup languages HTML and XHTML, HTML tags, rules of web access	1	
	e of web browsers, creating one to three column layout pages, sites validation, conditional comments. Topics will be practice		
14Y1W2	Webdesign 2	KZ	2
—	anced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, we		_
	e practiced on practical examples.	b scrvcr mstananoi	i i comigaration
16Y1ZG	Introduction into Applied Computer Graphics	KZ	2
	ision and applications with emphasis on transport, including development and research. Colours, colour perception, colours	1	_
	ementary algorithms for graphic data workout. Visualisation principles and tasks, technics, graphics and visualisation HW bas		•
graphics software.	monary agentime or graphic data nonconstruction principles and dollar, continue, graphics and nodalication in sec	noo. Introduction to	ZB dild OB
14Y1ZM	Fundamentals of parametric and adaptive modeling	KZ	2
	ucts and parts creation. Sketch drawing by help of geometric relations, parametric dimensions, creation of adaptive models fr	1	_
•	stems. Fundamentals of assemblies creation.	om 2D sketenes. II	ilport and export
11Y1ZM	Foundation of MATLAB Programming	KZ	2
	e of algorithmization, flow charts, description of MATLAB environment and its settings, MATLAB help, mathematical operators,	1	_
	d outputs, graphics, optimization and program code debugging.	matrices and elem	ierits operations,
14Y1ZJ		KZ	2
— •	Fundamentals of programming in JAVA a SE Platform. IDE Installation and First Project. Comments. Variables and Type System. Operators. User Input and Parsing.	1	_
	a SE Platform. IDE installation and Plist Project. Comments, variables and type system. Operators, oser input and Parsing.		
	ue, recursion. Program creation.	of field work. ASCI	i. i dilettoris,
12Y1ZU		KZ	2
_	Principles of Urbanism	1	_
	ty and settlement building. Functional components and their mutual relations (working, living, recreation, transportation). Spa s with a certain prevailing function, forms of their development. Brief overview of land-use planning.	iciai arrangemeni c	or settlements.
·		1/7	0
15Y1ZV	East-West dichotomy: Prelude to the Cold War	KZ	2
	plution of the "West" and "East" from the 1500s. Focus on the history in the period between 1850 had 1950. Milestones and co	•	
	ury and the beginning of the 20th century. Revolutions, the causes and consequences. Scientific and technological progress,	, the causes and co	onsequences.
	Il history. Social changes. Discussions on texts, sources.	1/7	
16Y1ZL	Vehicle Testing, Legislation and Construction	KZ	2
	bike costruction, aggregate computing, driving resistance, build and parameters of traction, constructional arrangement of personal in the contraction of the contrac		ises, motorbikes,
iegisiation in the EU ai	nd in the world, technical legislation creation, testing methods, vehicle tests, accelerated tests, mathematical modelling in tes	ung.	

Name of the block: Jazyky

Minimal number of credits of the block: 6

The role of the block: J

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

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 Note on the group:

Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their Code Completion Credits Scope Semester Role members) Tutors, authors and guarantors (gar.) Foreign Language - French 3 15JZ3F 0P+4C+10B Ζ Ζ Eva Rezlerová, Irena Veselková Foreign Language - Italian 3 Ζ Ζ 15JZ3I 0P+4C+10B J Foreign Language - German 3 Eva Rezlerová, Jana Štikarová, Martina Navrátilová 15JZ3N Ζ 3 0P+4C+10B Ζ

15JZ3R	Foreign Language - Russian 3 Eva Rezlerová, Marie Michlová	Z	3	0P+4C+10B	Z	J
15JZ3S	Foreign Language - Spanish 3 Eva Rezlerová, Nina Hricsina Puškinová	Z	3	0P+4C+10B	Z	J
15JZ4F	Foreign Language - French 4 Eva Rezlerová, Irena Veselková	Z,ZK	3	0P+4C+10B	L	J
15JZ4I	Foreign Language - Italian 4 Eva Rezlerová	Z,ZK	3	0P+4C+10B	L	J
15JZ4N	Foreign Language - German 4 Eva Rezlerová, Jana Štikarová, Martina Navrátilová	Z,ZK	3	0P+4C+10B	L	J
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 the courses of this group of Study Plan: Code=JZ-B-3,4 16/17 Name=Jazyk bak. 5., 6.sem. (od) 16/17 (pro B3710)

Foreign Language - French 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.

Foreign Language - Italian 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.

Foreign Language - German 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.

15JZ3R Foreign Language - Russian 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.

15JZ3S Foreign Language - Spanish 3 Ζ 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 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

3

15JZ4I Foreign Language - Italian 4 Z,ZK

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.

Foreign Language - German 4 15JZ4N

Z,ZK 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.

15JZ4R Foreign Language - Russian 4

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.

features. Practice of oral and written presentation.

Foreign Language - Spanish 4

Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its

features. Practice of oral and written presentation.

List of courses of this pass:

Code	Name of the course	Completion	Credits	ı
11CAL1	Calculus 1	Z,ZK	7	ı
Sequence of real n	umbers and its limit. Basic properties of mappings. Function of one real variable, its limit and derivative. Geometric properties of n-dim	ensional Euklidear	n space and	ı
Cartesia	an coordinate system. Geometric meaning of the differential of functions several real variables, differential calculus of functions of sev	eral real variables.		ı
11CAL 2	Calculus 2	7 7K	5	ı

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

11FYZ	Physics Kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermodynamics.	Z,ZK	5
11GIE		KZ	3
	Geometry try of curves - parameterization, the arc of the curve, torsion and curvature, Frenet`s trihedron. Kinematics - a curve as a trajectory c		-
	acceleration of a particle moving on a curved path.		
11LA	Linear Algebra	Z,ZK	3
Vector spaces (line	ar combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and the	-	minants and
441.5	their applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classificat		
11LP	Linear Programming problem of linear programming, transcription of some practical problems to the linear programming problems. Simplex and convex po	KZ	3
Formulation of the	solutions, duality principle in linear programming, stability of solution of linear programming problem. Traffic problem.	. Simplex m	etnod, basic
11MSP	Modeling of Systems and Processes	Z,ZK	4
System and subsys	tem, external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of differe	ential and differentia	al equations.
Linear and non	linear system, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer function	on. Stability of LTI s	systems.
	Discretization of continuous systems. System interconnection.		
11STAT	Statistics	Z,ZK	4
Basics of probabi	lity Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Parame	tric tests Nonparan	netric tests
44704	Regression and correlation analysis	7	0
11X31	Project 1	Z	2
11X32	Project 2	Z	2
11X33	Project 3	Z	2
11Y1BK	Error Detection Codes for Interlocking Systems	KZ	2
Safe communica	tion and methods for its assuring. Safety codes – linear codes, cyclic codes, BCH codes, Reed-Solomon codes. Transmission channels		nsmission
	errors, probability of undetected error. Design and assessment of detection codes; requirements of the European standard EN		
11Y1MM	Mathematical Models in Economy	KZ	2
The goal of the co	urse is to teach selected methods of linear programming, with theoretical procedures applicable for individual tasks and their program	-	The outcom
44)(45)(of the course is the ability to implement and solve basic tasks from the queue theory, graph theory and both free and constrained op		
11Y1PV	Parametrical and Multicriterial Programming	KZ	2
· · · · · · · · · · · · · · · · · · ·	olem of linear programming with a parameter in objective function, on right sides and in the matrix of coeficients of linear constraints. Co		
11Y1SI	Transportation Software Engineering	KZ	2
Basic concepts of s	oftware engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and implement	ntation using forma	i techniques
447/470	and practical usuage.	1/7	2
11Y1TG	Graph Theory d terminology of graph theory, graph representation. Problems of graph theory, problem instance. Graph search algorithms, trees, mi	KZ	2
1	rian path, bipartite graph matching, flow networks, circulations, critical path method, traveling salesman problem. Problem of existence a		
paur problem, Zaio	for their solving. Computational complexity, dealing with NP-complete problems, heuristic approach.	a opzanoa.	a aigoiliinio
11Y1ZM	Foundation of MATLAB Programming	KZ	2
	iple of algorithmization, flow charts, description of MATLAB environment and its settings, MATLAB help, mathematical operators, mat	l	
	control flow, inputs and outputs, graphics, optimization and program code debugging.		
12MDE	Transport Models and Transport Excesses	Z,ZK	3
Parameters of the	traffic flow and methods for their measurement. Models of the traffic flow, communications load, line and urban systems. Theory of qu	ieues, shock wave	s. Quality of
transport and its a	assessment. Statistical characteristics of transport. Transport excesses, their analysis, the causes, identify and minimize the consequ	ences. Improving o	of transport
	safety and fluency.		
12PPOK	Designing Roads, Highways and Motorways	KZ	3
1	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. Safe	ty device. Crossing	s, junctions,
12X31	intersections.	7	2
	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	•	-
particular linear 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	ies a dasic
12Y1C2		KZ	2
	Designing Roads in Civil 3D II voted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go throug	l	
	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
	ation creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process.	l	
		•	
12Y1HD	creation of some project documentation parts.		
	Traffic Noise	KZ	2
Acoustic introducti		l	
	Traffic Noise on, basic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regulation of urban acoustic, noise transmission, soundproofing. Types of noise sources in area. Determination of acoustic situation in the area	s. Creation acousti	ic climate in
area, principles	Traffic Noise on, basic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regulation of urban acoustic, noise transmission, soundproofing. Types of noise sources in area. Determination of acoustic situation in the area computing and measurement of transport noise. Acoustic studies, measuring protocol.	s. Creation acousti of interest. Method	ic climate in dology of
area, principles	Traffic Noise on, basic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regulation of urban acoustic, noise transmission, soundproofing. Types of noise sources in area. Determination of acoustic situation in the area	s. Creation acousti of interest. Method	ic climate in dology of

12Y1PC	Pedestrian and Cycling Transport	KZ	2
•	ans. Pedestrian crossings. Modifications for blind, dim-sighted and disabled people. Design of cycle routes network. Ways of cycle route		
ioi cyclists. Sepai	ation of cyclists from other transport modes. Cycle tracks and its design - one way streets, reserved traffic lanes, bus stops, crossings 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
12Y1PU	the environment. Organization Disposition of Railway Stations	KZ	2
	ا		
	ve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic		,
12Y1RU	Railway Lines Reconstruction	KZ	2
Keeping railway lii	ne operational, maintaining lines and stations, geometrical alignment of railway line, vehicles for railway superstructure and substruct		scheduling
12Y1SU	and organising possesions, preparation of railway lines reconstruction and maintenance, process of railway line reconstruction Road Management and Maintenance	KZ	2
	ith 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		
	classroom as well as investment activity in highway engineering.		
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 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.
12ZTS	Types of towns or cities with a certain prevailing function, forms of their development. Brief overview of land-use planning. Railwav Lines and Stations	Z,ZK	4
	Railway Lines and Stations ailway track geometry parameters. Route layout of railway lines. Railway line construction - railway substructure and superstructure. S		
	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, prognets and parties.	ublic mass transpo	rt. Negative
14ASD	impacts of transportation to environment and safety. Algorithm and Data Structures	KZ	3
_	niliarized with selected basic and derived data structures, algorithms, their properties and their design procedure. Students will analyze		-
solutions to the se	et task and the resulting algorithm write by means of flowcharts, practice in reading algorithms recorded by means of the flowchart ar	d use the basics of	f Boolean
	algebra with forming the conditions for the algorithms.		
14DATS	Database Systems	KZ	2
basic concepts c	of database systems, conceptual model, relational data model, the principles of normal forms, relational database design, security and queries, relational algebra, SQL language, client / server, multilayer architectures, distributed database systems. Access to data via the second systems of the second systems are second systems.		ualabase
14DMG	Datamining	KZ	2
	ces and knowledge, data warehouses and OLAP technology for data mining, data preprocessing in the process of knowledge acquis	-	- 1
mining characteris	tics of concepts (classes), mining association rules from relational db. and data warehousing, classification (decisions tree, Bayesian	cob., using neural	networks).
14KSP	Prediction. Cluster analysis. Mining in complex structured data, multimedia dbf., www. Constructing with Computer Aid	KZ	2
	m determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic common work		
•	Co-ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting possib	• .	
	profiles, drawings with raster foundaments).		
14MPG	Modern Programming Approaches	KZ	2
Principles of object	t oriented programming, polymorphism, references, memory allocation, inheritage, generic programming, operator overloading, STL of abstract data types, graph and graph algorithm implementation focused on logistic problems.	пртагу, објест птрв	ementation
14PRG	Programming	KZ	2
•	ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python program	nming language is	
here so that the pa	rticipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and search	ning, tuples, sets, o	dictionaries,
14X31	working with date and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). Project 1	Z	2
14X31 14X32	Project 2	Z	2
14X33	Project 3	Z	2
14Y1AV	Animation and Visualization	KZ	2
	tions and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and Spa		tmospheric
	s, rendering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animation		
14Y1BE	Barrierless Transport Second content of the cont	KZ	2 knowledge
	rless accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students of number troads, railway stations, public transport stops, terminal buildings, vehicles, public transport, information and orientation systems	-	- 1
	Theoretical knowledge will be supplemented by practical examples.		
14Y1BM	Biometric Methods	KZ	2
	rms, authentication methods, principles and performance measurement of biometric systems, overview of biometric technologies, ha	•	
retina recognition n	nethod, 2D and 3D face recognition, vein patterns on the wrist, ear biometrics, fingerprint recognition, skin spectroscopy, behavioral n in transport applications, safety and risks of biometric technologies.	netnoas, the use o	DIOMETRICS
14Y1HW	Computer Hardware	KZ	2
	computer Fide World Recture, basics of logical circuits design and their realization using FPGA. In detail, description of computer architecture and separate p		
	arithmetic and logical units, I/O subsystem.		

40/4145		147	
14Y1MP Assemblies pro	Modeling Complex Assemblies and Models in Parametric Modeller gramming - tools and methodology of working subassemblies and assemblies, sheet metal parts modelling, welded assemblies, pipel	KZ lines, and distribu	ution lines
7 todombiloo pro	Photorealistic output rendering - physical and material properties, lighting sources. MKP - visual example.	moo, and diomot	341011 111100.
14Y1OJ	Object - oriented programming in JAVA	KZ	2
	Encapsulation. Classes. Attributes. Access modifiers. Methods and overloading. Special methods (constructors, getters / setters). Ba	-	
14Y1OP	ance. Polymorphism. Statics, constants, interfaces, abstract classes, enum, packages, exceptions, collections, generics, lambda expre Operating System	KZ	2
_	Operating System stallation GNU/Linux OS. X-window system. Rights management - users and groups, ACL rights. Filesystems and attributes. Programs		
	console programs / commands. Config files. SW management, package systems. Programs in graphic shell - text, spreadsheet, graph		
	communication. Services management. Safe and secure configuration of OS. Remote administration.		
14Y1P2	Computer Aid of Transportation Projecting 2	KZ	2
	application for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, data outes, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transition section). Basics of 3D modelling.	0 ,	
14Y1PA	3D Modeling in AutoCAD	KZ	2
	parametric modeller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup creation, object connected with external database. Basic definition of work with lights, materials and reflexes. Models presentation.		_
14Y1PG	Computer Graphics	KZ	2
Basic formats of	graphic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with editing level scope) using layers, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics		nin the user
14Y1PI	Corporate Information System	KZ	2
	on-knowledge, components of information system, syntatic and semantic sense of data, structure of corporate information system, par		-
(personalistic, prod	duction, storage, etc.), corporate information politic and information control, risks of information system operation, legal environment of state information system, information system security, data protection, safety politics.	information syste	em operation,
14Y1PJ	C Programming Language	KZ	2
C programming lar	nguage. Preprocessor, basics of the C language (data types, syntax, commands), functions, pointes, dynamical memory allocation, string	-	s and unions.
	Implementations of abstract data types (FIFO, LIFO, list), programming techniques (sorting, searching, recursion), using bitwise op		
14Y1PZ	Advanced Data Processing in Spreadsheets	KZ	2
	e familiar with principles of working in a spreadsheet. Graphic layout of the table appearance, formatting of numbers, insertion of formut detection. Working with large spreadsheets, filters, advanced filters, database functions. Pivot tables and charts, conditional formatting, s		- 1
0,	data analysis. Examples and questions from various companies and training.	3,	, ,
14Y1TI	Creating Interactive Internet Applications	KZ	2
Possibilities of scri	pting language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions. You	own application	programmed
14Y1UP	in PHP language. 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, creat	· · · · · · · · · · · · · · · · · · ·	1 1
	phs, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless ed		
	so that they are able to concentrate mainly on writing a thesis.		1
14Y1VM Object oriented	Development of Applications for Mobile Devices programming, Java programming language, development environment, operating system Android, development application - widgets, permissions, services, GUI.	KZ containers, threa	2 ads, menu,
14Y1W1	Webdesign 1	KZ	2
	the basics of communication HTTP, URL and addressing, markup languages HTML and XHTML, HTML tags, rules of web accessibility		
	s, the issue of web browsers, creating one to three column layout pages, sites validation, conditional comments. Topics will be practice		
14Y1W2 Students will learn	Webdesign 2 advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, web ser	KZ ver installation +	2 configuration
	directives. Topics will be practiced on practical examples.		_
14Y1WG	Webdesign	KZ	2
Students will lea	rn the basics of HTTP communication, URL and addressing, HTML5 markup language, advanced CSS3 techniques, accessible and u webdesign, content management systems, web server installation + configuration directives. The subject matter will be trained on e		responsive
14Y1ZJ	Fundamentals of programming in JAVA	KZ	2
Introduction to the	Java SE Platform. IDE Installation and First Project. Comments. Variables and Type System. Operators. User Input and Parsing. Chair		
Chain and Math	ematical Methods. Terms. Relational Operators and Switches. Cycles for, while, foreach. Field - declaration, initialization, methods for f	ield work. ASCII.	. Functions,
14Y1ZM	parameters, return value, recursion. Program creation. 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		
	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 const	=	
15JZ1A	el route and traffic conditions, accidents and traffic incidents. Selection and training of the staff. Work and leisure. Age as a factor in tra	ansport operation	n. 3
	Foreign Language - English 1 ctures and Style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and co	∠ mmunicative skill	
	stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles of		
15JZ2A	Foreign Language - English 2	Z,ZK	3
Grammatical struc	tures and style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and cor stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles or		s. Elementary
15JZ3F	Foreign Language - French 3	Z	3
	listics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la		
and perceptive ar	nd communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work w	vith (professiona	l) text and its
1	features. Practice of oral and written presentation.		

•	Foreign Language - Italian 3 Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language level and study focus at the Faculty.	0 0	
and perceptive and com	nmunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v features. Practice of oral and written presentation.	vith (professional)	text and its
15JZ3N	Foreign Language - German 3	Z	3
	Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la	-	_
	nmunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v features. Practice of oral and written presentation.		
15JZ3R	Foreign Language - Russian 3	Z	3
-	Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la		_
ind perceptive and com	nmunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v features. Practice of oral and written presentation.	vith (professional)	text and its
15JZ3S	Foreign Language - Spanish 3	Z	3
-	Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la		_
ind perceptive and com	nmunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v features. Practice of oral and written presentation.	vith (professional)	text and its
15JZ4F	Foreign Language - French 4	Z,ZK	3
	Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la		1
-	nmunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v		_
15JZ4I	features. Practice of oral and written presentation. Foreign Language - Italian 4	Z,ZK	3
	Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la	•	-
•	nmunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v features. Practice of oral and written presentation.		•
15JZ4N	Foreign Language - German 4	Z,ZK	3
	Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la		1
nd perceptive and com	nmunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v features. Practice of oral and written presentation.	vith (professional)	text and it
15JZ4R	Foreign Language - Russian 4	Z,ZK	3
	Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la		1
	nmunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work w		_
	features. Practice of oral and written presentation.		
15JZ4S	Foreign Language - Spanish 4	Z,ZK	3
Grammar and stylistics.	Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la	anguage structure	knowledg
Grammar and stylistics.	. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language level and study focus at the Faculty. Improvement of language level and study focus at the Faculty. Improvement of language level and study focus at the Faculty. Improvement of language level and study focus at the Faculty. Improvement of language level and study focus at the Faculty. Improvement of language level and study focus at the Faculty. Improvement of language level and study focus at the Faculty. Improvement of language level and study focus at the Faculty. Improvement of language level and study focus at the Faculty. Improvement of language level and study focus at the Faculty. Improvement of language level and study focus at the Faculty. Improvement of language level and study focus at the Faculty. Improvement of language level and study focus at the Faculty. Improvement of language level and study focus at the Faculty is larger to the language level and study focus at the Faculty is larger to the language level and study focus at the Faculty is larger to the language level and study focus at the Faculty is larger to the language level and study focus at the Faculty is larger to the language level and study focus at the Faculty is larger to the language level and study focus at the Faculty is larger to the language level and study focus at the Faculty is larger to the language level and study focus at the Faculty is larger to the language level and study focus at the Faculty is larger to the language level and study focus at the Faculty is larger to the language level and study focus at the Faculty is larger to the language level and study focus at the Faculty is larger to the language level and study focus at the Faculty is larger to the language level and study focus at the Faculty is larger to the language level and study focus at the language level a	anguage structure	knowledge
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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	causes and cons	equences.
16DPO	Economic and financial history. Social changes. Discussions on texts, sources.	KZ	2
	Vehicle Technology , principles. Drive, vehicle construction. Road transport, safety, heavy duty vehicle desing, dynamics. Rail transport, safety, carriage o		
vernoie, i unotions	Transshipment. Technological components of various modes of transport. Management and control of various means of transport		no traction.
16UDOP	Introduction into Vehicles	Z	2
	portation systems. Functionality and setup. Movement and drive principles. Engines and their characteristics. Rail, road, air and wate	r transport. Alterna	
	of transport. Lifting equipment and conveyors. Legislation.		
16X31	Project 1	Z	2
16X32	Project 2	Z	2
16X33	Project 3	Z	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
16Y1IS	drive, steam engine, air engine. Energy accumulation means, accumulator, flywheel, fuel cell. Energy recuperation. WTW anal Interactive simulators and simulations	ysis.	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		
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		
Mode and Effects	Analysis), QFD (Quality Function Deployment), DFx (Design for Assamly, Manufacturying, Quality, Services) and other methods u	sed in industrial ap	oplications.
40)/45)/	Knowledge-based systems of quality and reliability, data collection.	1/7	
16Y1PV	Operation, Construction and Maintenance of Vehicles production. Vehicle maintenance. Vehicle diagnostics. Maintenence and repair plans. Engine maintenance and emission measurements.	KZ	2
Methods of vehicle	General principles of engine diagnostics.	iii. Italisiilissioii ii	nechanism.
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		
and hybrid drive	control. Electric drive. Vehicle communication bus (CAN, LIN, FlexRay, ISObus, KWP2000 protocole etc.). Vehicle electronic control,	safety, communica	ation and
	comfort systems.		
16Y1VT	Development in Railroad Vehicles	KZ	2
Railroad venicles	s traction. Railroad vehicle parametres regulation. Control and driving of railroad vehicles. Importance in heavy duty and personal trar assesment. New materials in design. International standardization.	isportation. Critical	situation
16Y1ZG	Introduction into Applied Computer Graphics	KZ	2
	s, division and applications with emphasis on transport, including development and research. Colours, colour perception, colour sche		. – .
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 of slation in the EU and in the world, technical legislation creation, testing methods, vehicle tests, accelerated tests, mathematical mode		motorbikes,
17EDPO	Economics of Transport Company	Z,ZK	5
	l utility, marginal costs, function of supply and demand, market equilibrium, perfect competition and types of market arrangement. Tra		
	t's environment, balance sheet, costs, revenue, profit and maximalization of profit. Financial management in transport, business plan	· ·	
17EMY	Management Science	Z	2
	to economical-mathematical models before its application in concrete technical and economical cases. The basic mathematical meth		
	Il classes of problems are formulated and different methods used in qualitatively distinct real situations are introduced. The tasks of ir		
17FEU	Public Administration and Financing in Transport	Z,ZK	4
to get a basic ov	rerview of the EU regional policy and its practical execution on the level of the member state, specific ability to find and analyze inform programmes.	iation about the Et	o support
17GEDS	Geography of Transport Systems	KZ	2
	ntiation of the transport system. Sociogeographic regionalization and its relation to transport. Transport and local and regional develo		
theoretical and metl	hodological framework. Mobility research - travel behavior, mode choice and the influence onto "modal-split." Modal competition. Practical	l use of transport-g	eographical
	analysis in transportation planning.		
17IVD	Integration of Public Transport	ZK	4
	port policy, planning, contracts, funding, clearing of traffic receipts, tariff systems, traffic and carriage controls, legal conditions within		
17LGT	Logistics , basic concepts, store, warehouse, transport and handling equipment, logistics technology, logistics centers, information and intellig	Z,ZK	6
Logistics definition	city.	ant logistics system	no, iogistico
17MAS	Small and Medium Enterprise	Z,ZK	3
	Small and medium enterprise - plans, market, analysis, finance, management, decision making, survival, growth.	, - I	-
17MEKA	Methods of Economics Analysis	KZ	2
The techniques of	economical analysis in the domain of analysis of dependencies, analysis and construction of time series and comparsion of statistica	l values using diffe	rencies and
4	indices.		
17MRZ	Managerial Decision Making	Z	2
THE COURSE IS CIVIC	ded into two main sections. The first section deals with individual-level processes that influence managers' decisions. The second sec is, group or organizational) forces that affect managers' decisions.	uon considers coll	ective (that
17PAZ	Carriage and Forwarding	Z	2
	age and forwarding, waybills and documents; transport modes, multimodal transport, tariffs and prices in transport, rights and obligat	_	
	forwarders, duty and tariff agreements, INCOTERMS, insurance in transport.		

47040			
17RAC	Rationalization and Quality of Transport	Z,ZK	7
Transport system, to	ransportation funding, cost calculation, efficiency, transport rationalization, quality management, standards and quality standardization,	quality manageme	ent systems,
quality manageme	nt in transport and logistics, marketing and transport quality, quality costs, quality measurement and monitoring, statistics in quality m	nanagement, impro	oving, focus
	on the customer.		
17RPT	Project Management	Z,ZK	5
Basic terms of the	project management, project management standards, organizational structures in the project management, projects in transport and	d transport infrastr	ucture and
	their specifics, feasibility study and CBA, project evaluation, PPP projects.		
17SFID	Public Administration and Financing in Transport	Z.ZK	4
Basic issues of tran	isport and transport policy in the social context, environmental issues in transport, economical aspects of transport, public administrat	ion and financing	of transport.
17TEDL	Transport Technology and Logistics	KZ	3
	sport technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and freight trans		-
	odus, technologic factors of the side of operator and client, organisation of city transport, logistic technologies and their aplication usi		I
17TGA	Graph Theory and its Applications in Transport		4
_	graph theory, paths in graphs, flows in networks, location problems, design problems on graphs, optimum routing, use of graphs in o	Z,ZK	-
17TVD	Technology of Public Transport	Z,ZK	5
The course conte	nts a detailed description of new knowledge and basic principles of hierarchical planning of public transport system accenting the ge		nning and
	quantified transport demand. The course would be oriented on multiple and multi-level optimisation of passenger public transport		
17X31	Project 1	Z	2
17X32	Project 2	Z	2
17X33	Project 3	Z	2
17Y1EV	Public Sector Economy	KZ	2
	ncial theory of public sector, public choice theory, externalites, decisions about public finance allocation, economic assesment of publ		
	R, state budget, management of public projects a their economic efficiency assessment, way of elaboration of PPP projects, funding fro		
17Y1LL		KZ	2
	Logistics of Passenger and Freight Air Transport		
Logistics affilite pas	ssenger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial trans	sport process pass	serigers and
477/41475	air cargo. Information systems in air transport. Global distribution systems.	177	
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 a	nd the resulting dif	ferences in
	the application of marketing.		
17Y10F	Personal Finance	KZ	2
Personal finance (budget, financing of basic living needs), debt (loans and credits, payment instruments, interest and fees, debt trap), financing of hous	sing (rent, mortgag	e, savings,
consumer loans, re	financing), savings and investments (investment horizon, return, risk, investment strategy), insurance (insurance types, suitability and a	adequacy), securir	ng the future
	(retirement savings and insurance).		
4-11/4-014			
17Y1PM	Personnel Management	KZ	2
	Personnel Management ces, work group, man as personality, planning, choice, evaluation and education of human sources, work adaptation, teamwork, inter		
Human source	ces, work group, man as personality, planning, choice, evaluation and education of human sources, work adaptation, teamwork, inter-	cultural communic	ation.
Human source 17Y1SK Factors affecting	ces, work group, man as personality, planning, choice, evaluation and education of human sources, work adaptation, teamwork, inter- Urban and Regional Rail Transport Systems	cultural communic KZ ne networking. Cre	ation. 2 sating and
Human source 17Y1SK Factors affecting	ces, work group, man as personality, planning, choice, evaluation and education of human sources, work adaptation, teamwork, inter- Urban and Regional Rail Transport Systems transport demand, modal-split, distribution of passenger flows on public regional transport lines. Optimization of line management, lines.	cultural communic KZ ne networking. Cre	ation. 2 sating and
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18Y1EM	Experimental Methods in Mechanics	KZ	2
	ole of experimental mechanics. Sensors for mechanical testing. Overview of experimental methods. Destructive and non-destructive te	•	•
experimental pro	cedures and sample preparation. Tensile and bending tests. Electrical resistance strain gages. Optical based strain measurement. Fatig	gue and lifetime	prediction.
	Instrumented hardness testing. Introduction to electron microscopy. Errors in measurement.		_
18Y1MT	Engineering Materials	KZ	2
-	w of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers and o	-	-
	ogical materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's		
18Y1PS	Computer Simulations in Mechanics	KZ	2
•	view of tools for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model development	-	-
rom other CAE sys	stems. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary conditions and	application of th	e load. Basi
	tasks of structural and modal analysis. Introduction to complex nonlinear problems.		
18Y1UK	Introduction of Rail Vehicles	ΚZ	2
Basic characterist	ics and parameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion trair	and unit trains	. Rolling and
rack resistance. To	tal running resistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehicle - hy	dromechanic, h	nydrodynami
	and electric drive. Design concept rail vehicles and drive of wheel set.		
20SYSA	Systems Analysis	Z,ZK	5
· · · · · · · · · · · · · · · · · · ·	em sciences, system viewpoint, terminology, typical system analysis tasks, system identification, system interface and interface tasks, p		
and its analysis,	strong functions and processes, genetic code, system identity, system architecture. Tools for system analysis -Petri nets, decision table	es, algorithms for	or structural
	tasks. Soft and hard systems, methods for soft system analysis.		
20UITS	Introduction to Intelligent Transport Systems	Z,ZK	7
Terminology and le	gislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamentals of inform	ation and teleco	mmunicatio
systems for ITS. Pr	inciples and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real examples of	f possible appli	cations of th
	principles of ITS.		
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, trans		_
	ogic gates. Functions of basic electronic circuits and methods for their designs (rectifiers, voltage regulator with Zener diode, transistor	· ·	-
•	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 payme	nts come from i	ts budget bu
•	ot a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of secur		_
	of transportation and telecomunication projects.		
	or transportation and telecomunication projects.		
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21Y1BS	Unmanned aircraft systems 1	KZ	2
Unmanned Aviation Dev	elopment. Aircraft design. Legislation in force in the Czech Republic. Planning and execution of the flight. Airspace divisio procedures. Practical flights.	n. Operational risks and	operational
21Y1MP	Matlab for project-oriented study	KZ	2
	s focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exe lased on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an impro		•
21Y1PA	Air Traffic Control Operating Procedures	KZ	2
evel changes, ATC clea	ne ATC simulator with the following focus - getting familiar with the simulation environment, acquiring basic habits, aircraft prance, use of RNAV points. Practical exercises focused on the basis of vectoring, timely application of vertical spacing, Estable Exercises in the APPROACH airspace, arrivals, departures and conflict solutions.	•	_
21Y1RZ	Human Resources Management	KZ	2
	n resources in the organization and related disciplines file. Substance, importance and challenges of human resources mesource management. Human resource planning. Search, recruitment and selection of employees. Motivation, evaluation a dismissal and redundancies of employees. Education of employees. Planning career management.	-	
21Y1TH	Aircraft Technical Handling	KZ	2
	ushing tractors. GPU. Air conditioning and heating units. Aircraft fuel equipment. De-acing and anti-icing units. Loading an gers onboarding and offboarding. Operational processes of aircraft technical handling and regulations. Modernization and		oment for
21ZALD	Basics of Air Transport	KZ	2
•	nology, basic rules. VFR/IFR. Basics of aerodynamics. Propulsion of aircraft. Aircraft design. Basics of navigation, radio navig tion of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic management		
	Airlines and economics. Space technologies.		
22X31	Project 1	Z	2
22X32	Project 2	Z	2
22X33	Project 3	Z	2
23DPSP	Traffic Law and Related Regulations	Z	1
Analysis of selected la	aws in transportation domain (e. g. Road Act, Road Transport Act, Civil Aviation Act, Railways Act, Inland Navigation Act),	selected EU transport	egislation.
23X31	Project 1	Z	2
23X32	Project 2	Z	2
23X33	Project 3	Z	2
23Y1KM	Crisis Management	KZ	2
	of crisis management with direction to Rescue system (IZS). After introduction to safety domain, there are terms and knowl nt and its targets; IZS-crisis management-crisis planning; and basic legislation. Practical part is concentrated to responsit		sition of crisi
23Y1KO	Quantum Physics and Optoelectronics Ground of quantum physics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics of	KZ omponents.	2
23Y1OK	Protection of Critical Objects and Infrastructures	KZ	2
ypes of technological sy	stems, critical item, risks and their courses, criticality, vulnerability, connectivity, dependability, resilience, failure, protectior infrastructures.	n, safety of critical objec	ts and critica
23Y1VS	Negotiation and Cooperation	KZ	2
_	otiation. The influence of personality traits on the negotiations. Negotiation and commanding. Teamwork. Variants teams. I , the essence of negotiation, the differences in negotiation in business and in crisis situations, the principle of "win both", s trust.		
23ZAP	Basics of Law	Z	2
Basic orientation in the	Czech legal system. The course is primarily intended to provide students with orientation in fundamentals of the Czech R doption of the basic principles of European Community law. The course consists of selected chapters from the public and p	epublic, legal system ar	nd in various
-	law.		
TV-1	Physical Education	Z	1
TV-2	Physical Education	Z	1

For updated information see http://bilakniha.cvut.cz/en/FF.html Generated: day 2024-05-19, time 16:04.