Study plan

Name of study plan: LOG bak.prez.19/20

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 17/18

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

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

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

Credits in the group: 30 Note on the group:

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

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

11CAL1	Calculus 1	Z,ZK	7
Sequence of real number	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 s	ystem. Geometric meaning of the differential of functions several real variables, differential calculus of functions of several real	al variables.	
11LA	Linear Algebra	Z,ZK	3
Vector spaces (linear o	ombinations, linear independence, dimension, basis, coordinates), Matrices and operations, Systems of linear equations and	their solvability. D	eterminants and

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

12ZYDI	Introduction to Transportation Engineering	Z,ZK	2
Role of transportation in	land-use planning. Basic terms in transportation engineering. Traffic survey and traffic prognosis. Introduction to topic of 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
	•		

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

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

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

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

Credits in the group: 30 Note on the group:

vote on the C	Jroup.					
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	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	B 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	L 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	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 17/18 Name=2.sem.bak.prez. od 17/18

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

11STAT Statistics Z,ZK 4

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

12ZTS	Railway Lines and Stations	Z,ZK	4
Rail transport. Rail	way track geometry parameters. Route layout of railway lines. Railway line construction - railway substructure and superstructure	e. Spatial layout of r	ailway lines.
Railway control sys	stems in relation to infrastructure. Operating and carriage points. Railway lines net and category. Traction in rail transport.		
18SAT	Structural Analysis	Z,ZK	4
General system of	forces in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determine	nate beams and sin	nple girders.
Principle of virtual v	vork. Kinematic method for calculation of reactions of statically determinate systems. Determination of axial forces in truss construct	tions. Cross-section	al characteristics
of planar shapes. F	iber polygons and chains.		
20SYSA	Systems Analysis	Z,ZK	5
ntroduction to syst	em sciences, system viewpoint, terminology, typical system analysis tasks, system identification, system interface and interface	tasks, processes, s	ystem behaviou
and its analysis, str	rong functions and processes, genetic code, system identity, system architecture. Tools for system analysis - Petri nets, decision	tables, algorithms	for structural
asks. Soft and har	d systems, methods for soft system analysis.		
14PRG	Programming	KZ	2
			_
The Course Progra	amming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python pro	gramming language	is expanded
•			•
here so that the pa	amming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python prog		•
nere so that the par working with date a	amming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python pro- rticipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and		
nere so that the par working with date a	amming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python progreticipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML).	searching, tuples, s	ets, dictionaries
nere so that the par working with date a 17TEDL Basic terms in trans	amming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python progreticipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). Transport Technology and Logistics	searching, tuples, s	ets, dictionaries 3 ation of traffic in
nere so that the par working with date a 17TEDL Basic terms in transeach transport mod	amming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python progreticipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and sand time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). Transport Technology and Logistics sport technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and freight	searching, tuples, s	ets, dictionaries 3 ation of traffic in
nere so that the party orking with date at 17TEDL Basic terms in transport mod 21ZALD	amming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python progreticipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and sand time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). Transport Technology and Logistics sport technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and freightus, technologic factors of the side of operator and client, organisation of city transport, logistic technologies and their aplication	KZ t transport, organisa using various trans KZ	ets, dictionaries 3 ation of traffic insport modus.
nere so that the paraworking with date and transport moderate and tr	amming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python progreticipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and stand time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). Transport Technology and Logistics sport technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and freightus, technologic factors of the side of operator and client, organisation of city transport, logistic technologies and their aplication Basics of Air Transport	KZ t transport, organisa using various trans KZ KZ ation. Weight, balance	3 ation of traffic in sport modus. 2 ce, performance
nere so that the paraworking with date and an arrow and a said transport mode and a said transpo	amming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python proporticipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and stand time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). Transport Technology and Logistics sport technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and freighdus, technologic factors of the side of operator and client, organisation of city transport, logistic technologies and their aplication Basics of Air Transport terminology, basic rules. VFR/IFR. Basics of aerodynamics. Propulsion of aircraft. Aircraft design. Basics of navigation, radio navigation.	KZ t transport, organisa using various trans KZ KZ ation. Weight, balance	3 ation of traffic in sport modus. 2 ce, performance

Code of the group: 3.S.BP 19/20

Name of the group: 3.sem.bak.prez. od 19/20

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	J.					
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+18B	Z	Z
12MDE	Transport Models and Transport Excesses Milan Dont, Josef Kocourek	Z,ZK	3	2P+1C+8B	Z	Z
17TGA	Graph Theory and its Applications in Transport Alena Rybi ková, Denisa Mocková, Dušan Teichmann	Z,ZK	4	2P+2C+12B	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+10B	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+20B	Z	Z
12PPOK	Designing Roads, Highways and Motorways Petr Šatra, Josef Kocourek, Tomáš Pad lek, Petr Kumpošt	KZ	3	1P+2C+10B	Z	Z
14DATS	Database Systems Jana Kaliková, Jan Kr ál Jana Kaliková Jana Kaliková (Gar.)	KZ	2	1P+1C+10B	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+10B	Z	Z

Characteristics of the courses of this group of Study Plan: Code=3.S.BP 19/20 Name=3.sem.bak.prez. od 19/20

11FYZ	Physics	Z,ZK	5
Kinematics, partic	e dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermodynamics.		'
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 o	of queues, shock w	vaves. Quality of
transport and its a	ssessment. Statistical characteristics of transport. Transport excesses, their analysis, the causes, identify and minimize the conse	quences. Improvir	ng of transport
safety and fluency			
17TGA	Graph Theory and its Applications in Transport	Z,ZK	4
Basic terms of gra	ph theory, paths in graphs, flows in networks, location problems, design problems on graphs, optimum routing, use of graphs in o	ther scientific disci	iplines.
18PZP	Elasticity and Strength	Z,ZK	3
Tension and comp	ression. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolt	ted and welded join	nts of structures.
Analysis of deflect	ion curve of beams. Torsion of circular cross sections. Combined loading. Stability.		
20UITS	Introduction to Intelligent Transport Systems	Z,ZK	7
Terminology and le	egislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamentals of	information and tel	ecommunication
systems for ITS. P	rinciples 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 conveciple 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 prin 16DPO Vehicle. Functions, pr Transshipment. Techr 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 prin 16DPO Vehicle. Functions, pr Transshipment. Techr 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 application. 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 application. 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 application. 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 19/20

Name of the group: PVP bak.prez.LOG 19/20

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	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
23Y1DZ	Data and Their Processing for Engineering Fields Needs	KZ	2	2P+0C	Z	PV
15Y1DZ	History of Railway Eva Rezlerová, Martin Jacura	KZ	2	2P+0C	L	PV
12Y1DS	Project Documentation in Practice	KZ	2	2P+0C	Z	PV
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
23Y1KM	Crisis Management Dan ok	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	KZ	2	2P+0C	L	PV
14Y1OJ	Patrik Horaž ovský, Milan Sliacky Milan Sliacky (Gar.) 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	KZ	2	2P+0C	Z	PV
17Y1PM	Olga Vraštilová Personnel Management	KZ	2	2P+0C	L	PV
12Y1PC	Pedestrian and Cycling Transport	KZ	2	2P+0C		PV
14Y1PG	Denis Liutov Computer Graphics	KZ	2	2P+0C	 L	PV
14Y1P2	Computer Graphics Computer Aid of Transportation Projecting 2	KZ KZ	2	2P+0C	Z	PV
18Y1PS	Computer Simulations in Mechanics	KZ	2	2P+0C	L	PV
	Petr Żlámal					
14Y1PI 14Y1PZ	Corporate Information System	KZ KZ	2	2P+0C 2P+0C	Z Z	PV PV
12Y1PD	Advanced Data Processing in Spreadsheets Assessment of Transport Structures	KZ KZ	2	2P+0C	Z	PV
20Y1PK	Product Quality Management Processes	KZ	2	2P+0C	Z	PV
14Y1PJ	Martin Leso	KZ	2	2P+0C	Z	PV
12Y1C1	C Programming Language Designing Roads in Civil 3D I	KZ	2	2P+0C		
	Tomáš Honc Designing Roads in Civil 3D II				L	PV
12Y1C2	Tomáš Honc	KZ	2	2P+0C	Z	PV
14Y1PA	3D Modeling in AutoCAD	KZ	2	2P+0C	Z	PV
16Y1PV	Operation, Construction and Maintenance of Vehicles	KZ	2	2P+0C	L	PV
12Y1PU 12Y1RU	Organization Disposition of Railway Stations	KZ KZ	2	2P+0C 2P+0C	L Z	PV
	Railway Lines Reconstruction Control and Electronic Vehicle Systems		-			PV
16Y1RE	Josef Mík, 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 17Y1SL	Sensors and Actuators	KZ KZ	2	2P+0C 2P+0C	L Z	PV
11Y1SI	Sociology of Human Resources Transportation Software Engineering					PV
	Martin P ni ka	KZ	2	2P+0C	Z	PV
22Y1SZ	Forensic Expertise	KZ	2	2P+0C	L	PV
16Y1KS	Quality and Reliability of Vehicles Jaroslav Machan, David Lehet	KZ	2	2P+0C	Z	PV
12Y1SU	Road Management and Maintenance Dagmar Ko árková, Otakar Vacín	KZ	2	2P+0C	L	PV
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 19/20	Name=PVP ba	ık.prez.L	OG 19/20		
21Y1AM	Aeronautical Information Management (AIM)				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. 18Y1AM Anatomy, Mobility and Safety of Man ΚZ 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. 14Y1AV Animation and Visualization ΚZ 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. **Applied Electronics** 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 ΚZ 2 **Barrierless Transport** 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 ΚZ 2 Aviation safety and security History of safety and security development in aviation. Modern tools for safety and security management. Research and development of safe and secure systems ΚZ 2 Work Safety and Health Protection in Transportation 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. ΚZ 2 Error Detection Codes for Interlocking Systems 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. ΚZ 21Y1BS Unmanned aircraft systems 1 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 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. 23Y1DZ Data and Their Processing for Engineering Fields Needs ΚZ 2 Courses of risk, basic terms, data collection, data sets, data random uncertainty and data epistemic uncertainty, data processing, hazard, risk, value scales, analytical, empirical and heuristic methods, hazard determination and risk determination, methods for variants' creation, decision support systems. History of Railway 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 Project Documentation in Practice 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. 17Y1FV Public Sector Economy K7 Economic and financial theory of public sector, public choice theory, externalites, decisions about public finance allocation, economic assesment 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 haza		-
voltage, maximum allowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legis	lation, standards a	ind regulations
in relation to health and safety and electrical engineering. 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 - kinetic, static, heat, chemical and others.	1	
drive, steam engine, air engine. Energy accumulation means, accumulator, flywheel, fuel cell. Energy recuperation. WTW analysis.	ngy. Combaction o	rigirio, didottio
20Y1EA Environmental Aspects of Transport	KZ	2
State of the atmosphere, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabil	1	
Air quality, main pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transport	oortation in climate	change.
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, communism		
goals. Europe after Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war an	d its consequence	s 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-destructive and non-destruc	KZ	2 rials Design of
experimental procedures and sample preparation. Tensile and bending tests. Electrical resistance strain gages. Optical based strain measurement.	_	_
Instrumented hardness testing. Introduction to electron microscopy. Errors in measurement.	rangao ana momin	o prodiction.
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 tr	1	
French society and culture. Current political system. System of education, studying in France. Selected authors of French literature. French gastrono	omy.	
14Y1HW Computer Hardware	KZ	2
Computer architecture, basics of logical circuits design and their realization using FPGA. In detail, description of computer architecture and separat	e parts designing	controllers,
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. Development		
World airports. Famous aviators. Helicopters. CSA airplanes. Development of aircrafts in Czechoslovakia between the years 1945-1989. Classic era aviation. Modern era of civil aviation. Airline companies. Supersonic flying.	or aviation. Goide	ii eia oi civii
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 tree	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 S	=	
12Y1HD Traffic Noise	KZ	2
Acoustic introduction, basic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regula	tions. Creation acc	oustic climate in
area, principles of urban acoustic, noise transmission, soundproofing. Types of noise sources in area. Determination of acoustic situation in the area	a of interest. Metho	dology of
computing and measurement of transport noise. Acoustic studies, measuring protocol.		
15Y1HE Work Hygiene and Ergonomics in Traffic	KZ	2
Basic knowledge of occupational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of these Creation and protection of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technology		
Practical examples from the field of transportation; relevant legislature.	io possibilities allu	Skills Of a filaff.
	K7	2
16Y1IS Interactive simulators and simulations Simulation theory and application of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical n	KZ nodels. Computing	2 methods.
16Y1IS Interactive simulators and simulations	nodels. Computing	
16Y1IS Interactive simulators and simulations Simulation theory and application of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical mathematical mathematical mathematic	nodels. Computing	
16Y1IS Interactive simulators and simulations Simulation theory and application of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical in Simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation.	nodels. Computing ulators.	methods.
16Y1IS Interactive simulators and simulations Simulation theory and application of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical resimulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation. 12Y1KN Combined Transportation	nodels. Computing ulators.	methods.
16Y1IS Interactive simulators and simulations Simulation theory and application of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical resimulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and their mathematical reality systems. Practical exercise with simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and their mathematical reality systems.	nodels. Computing ulators. KZ as. Multimodal logi KZ dge on: theory and	methods. 2 stic centres. 2
16Y1IS Interactive simulators and simulations Simulation theory and application of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical rr Simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and their mathematical reality systems. Practical exercise with simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation of vehicle dynamics and their mathematical reality systems. Practical exercise with simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation of vehicle dynamics, on-	nodels. Computing ulators. KZ as. Multimodal logi KZ dge on: theory and apilation.	2 stic centres. 2 position of crisis
16Y1IS Interactive simulators and simulations Simulation theory and application of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical resimulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and their mathematical resources with simulation software and their mathematic	nodels. Computing ulators. KZ as. Multimodal logi KZ dge on: theory and	methods. 2 stic centres. 2
Interactive simulators and simulations Simulation theory and application of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical resimulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of combined transport strategy and legislation. Load units. Means of transport in combined transport. Combined transport systems. Transshipping are 23Y1KM Crisis Management Theory and legal frame of crisis management with direction to Rescue system (IZS). After introduction to safety domain, there are terms and knowled management and its targets; IZS-crisis management-crisis planning; and basic legislation. Practical part is concentrated to responsibility matrix con 23Y1KO Quantum Physics and Optoelectronics Ground of quantum physics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics components.	nodels. Computing ulators. KZ as. Multimodal logi KZ age on: theory and npilation.	methods. 2 stic centres. 2 position of crisis
16Y1IS Interactive simulators and simulations Simulation theory and application of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical of Simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of combined transport systems and interactive simulation of combined transport systems. Transshipping are 23Y1KM	nodels. Computing ulators. KZ as. Multimodal logi KZ dge on: theory and apilation. KZ	2 stic centres. 2 position of crisis 2
Interactive simulators and simulations Simulation theory and application of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical resimulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of combined transport systems and interactive simulation software and interactive simulation of combined transport systems. Transshipping are 23Y1KM Crisis Management Theory and legal frame of crisis management with direction to Rescue system (IZS). After introduction to safety domain, there are terms and knowled management and its targets; IZS-crisis management-crisis planning; and basic legislation. Practical part is concentrated to responsibility matrix com 23Y1KO Quantum Physics and Optoelectronics Ground of quantum physics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics components. 17Y1LL Logistics of Passenger and Freight Air Transport Logistics airline passenger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial	nodels. Computing ulators. KZ as. Multimodal logi KZ dge on: theory and apilation. KZ	2 stic centres. 2 position of crisis 2
Interactive simulators and simulations Simulation theory and application of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical resimulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of combined transport systems. Transshipping are 23Y1KM Crisis Management Theory and legal frame of crisis management with direction to Rescue system (IZS). After introduction to safety domain, there are terms and knowled management and its targets; IZS-crisis management-crisis planning; and basic legislation. Practical part is concentrated to responsibility matrix com 23Y1KO Quantum Physics and Optoelectronics Ground of quantum physics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics components. 17Y1LL Logistics of Passenger and Freight Air Transport Logistics airline passenger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial air cargo. Information systems in air transport. Global distribution systems.	nodels. Computing ulators. KZ as. Multimodal logi KZ dge on: theory and opilation. KZ KZ KZ	2 stic centres. 2 position of crisis 2 passengers and
16Y1IS Interactive simulators and simulations Simulation theory and application of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical of Simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation software and interactive simulation of vehicle dynamics, on-land simulation of vehicle dynamics, on-land simulation software and interactive simulation of vehicle dynamics, on-land simulation software and interactive simulation of vehicle dynamics, on-land simulation software and interactive simulation software and interactive simulation of vehicle dynamics, on-land simulation of vehicle dynamics, on-land simulation of vehicle dynamics, on-land simulation software and their mathematical or vehicle dynamics, on-land simulation software and interactive simulation of vehicle dynamics, on-land simulation software and interactive simulation software and interactive simulation of vehicle dynamics, on-land simulation software and interactive simulation of vehicle dynamics, on-land simulation software and interactive simulation of vehicle dynamics, on-land simulation software and interactive simulation of vehicle dynamics, on-land simulation softw	nodels. Computing ulators. KZ as. Multimodal logi KZ dge on: theory and application. KZ KZ KZ KZ KZ KZ KZ KZ KZ	2 stic centres. 2 position of crisis 2 passengers and 2
Interactive simulators and simulations Simulation theory and application of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical resimulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of combined transport systems. Transshipping are 23Y1KM Crisis Management Theory and legal frame of crisis management with direction to Rescue system (IZS). After introduction to safety domain, there are terms and knowled management and its targets; IZS-crisis management-crisis planning; and basic legislation. Practical part is concentrated to responsibility matrix com 23Y1KO Quantum Physics and Optoelectronics Ground of quantum physics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics components. 17Y1LL Logistics of Passenger and Freight Air Transport Logistics airline passenger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial air cargo. Information systems in air transport. Global distribution systems.	nodels. Computing ulators. KZ as. Multimodal logi KZ dge on: theory and application. KZ KZ KZ KZ KZ KZ KZ KZ KZ	2 stic centres. 2 position of crisis 2 passengers and 2
Interactive simulators and simulations Simulation theory and application of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical in Simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and their mathematical interaction of combined transport systems. Transphipping are carriage in terms of logistation and knowled management and legislation. Load units. Means of transport in combined transport systems in deposit systems and knowled management and its targets; IZS-crisis management with direction to Rescue system (IZS). After introduction to safety domain, there are terms and knowled management and its targets; IZS-crisis management-crisis planning; and basic legislation. Practical part is concentrated to responsibility matrix comes and safety domain, there are terms and knowled management and its targets; IZS-crisis management-crisis planning; and basic legislation. Practical part is concentrated to responsibility matrix comes and safety domain, there are terms and knowled management and its targets; IZS-crisis management and safety domain, there are terms and knowled management and its targets; IZS-crisis management and safety domain, there are terms and knowled management and its targets; IZS-crisis management and safety domain, there are terms and knowled management and its targets; IZS-crisis manag	nodels. Computing ulators. KZ as. Multimodal logi KZ dge on: theory and application. KZ KZ KZ KZ KZ KZ KZ KZ KZ	2 stic centres. 2 position of crisis 2 passengers and 2
16Y1IS	hodels. Computing ulators. KZ as. Multimodal logi KZ dge on: theory and application. KZ	position of crisis 2 position of crisis 2 passengers and 2 ts for finding
Interactive simulators and simulations	hodels. Computing ulators. KZ as. Multimodal logi KZ dge on: theory and application. KZ	position of crisis 2 position of crisis 2 passengers and 2 ts for finding
Interactive simulators and simulations Simulation theory and application of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical in Simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of combined transport systems of transport systems. Transshipping are: 23Y1KM	nodels. Computing ulators. KZ as. Multimodal logi KZ dge on: theory and apilation. KZ KZ transport process KZ xamples of datase KZ ort and the resultin	position of crisis 2 position of crisis 2 passengers and 2 ts for finding 2 g differences in
Interactive simulators and simulations	nodels. Computing ulators. KZ as. Multimodal logi KZ dge on: theory and apilation. KZ KZ transport process KZ xamples of datase KZ ort and the resultin	position of crisis 2 position of crisis 2 passengers and 2 ts for finding 2 g differences in
Interactive simulators and simulations	nodels. Computing ulators. KZ as. Multimodal logi KZ dge on: theory and apilation. KZ transport process KZ xamples of datase KZ ort and the resultin KZ gram implementation	position of crisis 2 position of crisis 2 passengers and 2 ts for finding 2 g differences in 2 on. The outcom
Interactive simulators and simulations	nodels. Computing ulators. KZ as. Multimodal logi KZ dge on: theory and apilation. KZ transport process KZ xamples of datase KZ ort and the resultin KZ KZ trans implementation	position of crisis 2 position of crisis 2 passengers and 2 ts for finding 2 g differences in 2 on. The outcom
Interactive simulators and simulations Simulation theory and application of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical row Simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive sim 12Y1KN Combined Transportation Combined Transportation Combined transport strategy and legislation. Load units. Means of transport in combined transport. Combined transport systems. Transshipping are 23Y1KM Crisis Management Theory and legal frame of crisis management with direction to Rescue system (IZS). After introduction to safety domain, there are terms and knowled management and its targets; IZS-crisis management-crisis planning; and basic legislation. Practical part is concentrated to responsibility matrix con 23Y1KO Quantum Physics and Optoelectronics Ground of quantum physics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics components. 17Y1LL Logistics of Passenger and Freight Air Transport Logistics airline passenger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial air cargo. Information systems in air transport. Global distribution systems. 20Y1LN Location and Navigation Description and examples of road networks, localization on the network. Routing algorithms, their properties and implementation. Description and extransport connections, routing algorithms, their properties and implementation. 17Y1MD Marketing in Transportation General principles of marketing applied to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transport the application of marketing. 11Y1MM Mathematical Models in Economy The goal of the course is to teach selected methods of linear programming, with theoretical procedures applicable for individual tasks and their programming is the ability to imple	hodels. Computing ulators. KZ as. Multimodal logi KZ dge on: theory and apilation. KZ KZ transport process KZ xamples of datase KZ ort and the resultin KZ KZ and composites, a	position of crisis 2 position of crisis 2 passengers and 2 ts for finding 2 g differences in 2 on. The outcom
Interactive simulators and simulations	hodels. Computing ulators. KZ as. Multimodal logi KZ dge on: theory and apilation. KZ transport process KZ xamples of datase KZ ort and the resultin KZ and composites, an charts.	position of crisis 2 position of crisis 2 passengers and 2 ts for finding 2 g differences in 2 on. The outcom 2 attention is paid
Interactive simulators and simulations	hodels. Computing ulators. KZ as. Multimodal logical KZ dge on: theory and apilation. KZ KZ transport process KZ xamples of datase KZ ort and the resultin KZ and composites, and charts. KZ	position of crisis 2 position of crisis 2 passengers and 2 ts for finding 2 g differences in 2 on. The outcom 2 attention is paid
Interactive simulators and simulations	hodels. Computing ulators. KZ as. Multimodal logi KZ dge on: theory and apilation. KZ transport process KZ xamples of datase KZ and the resultin KZ and composites, an charts. KZ ises will be prepara	position of crisis 2 position of crisis 2 possengers and 2 passengers and 2 g differences in 2 on. The outcom 2 attention is paid 2 ed according to
Interactive simulators and simulations Simulation theory and application of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical in Simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive sim 12Y1KN Combined Transportation Combined transport strategy and legislation. Load units. Means of transport in combined transport. Combined transport systems. Transshipping are 23Y1KM Crisis Management Theory and legal frame of crisis management with direction to Rescue system (IZS). After introduction to safety domain, there are terms and knowled management and its targets; IZS-crisis management-crisis planning; and basic legislation. Practical part is concentrated to responsibility matrix con 23Y1KO Quantum Physics and Optoelectronics Ground of quantum physics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics components. 17Y1LL Logistics of Passenger and Freight Air Transport Logistics of Passenger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial air cargo. Information systems in air transport. Global distribution systems. 20Y1LN Location and Navigation Description and examples of road networks, localization on the network. Routing algorithms, their properties and implementation. Description and e transport connections, routing algorithms, their properties and implementation. 17Y1MD Marketing in Transportation General principles of marketing applied to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transport the application of marketing applied to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transport the application of marketing. 11Y1MM Mathematical Models in Economy Materials Materials Materials Materials Materials Materials	hodels. Computing ulators. KZ as. Multimodal logi KZ dge on: theory and apilation. KZ transport process KZ xamples of datase KZ and the resultin KZ and composites, an charts. KZ ises will be preparated of students' M	position of crisis 2 position of crisis 2 possengers and 2 passengers and 2 passengers and 2 position of crisis 2 passengers and 2
Interactive simulators and simulations Simulation theory and application of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical in Simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive sim 12Y1KN Combined Transportation Combined transport strategy and legislation. Load units. Means of transport in combined transport. Combined transport systems. Transshipping are 23Y1KM Crisis Management Theory and legal frame of crisis management with direction to Rescue system (IZS). After introduction to safety domain, there are terms and knowled management and its targets; IZS-crisis management-crisis planning; and basic legislation. Practical part is concentrated to responsibility matrix con 23Y1KO Quantum Physics and Optoelectronics Ground of quantum physics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics components. 17Y1LL Logistics of Passenger and Freight Air Transport Logistics of Passenger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial air cargo. Information systems in air transport. Global distribution systems. 20Y1LN Location and Navigation Description and examples of road networks, localization on the network. Routing algorithms, their properties and implementation. Description and e transport connections, routing algorithms, their properties and implementation. 17Y1MD Marketing in Transportation General principles of marketing applied to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transport the application of marketing applied to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transport the application of marketing. 11Y1MM Mathematical Models in Economy Materials Materials Materials Materials Materials Materials	hodels. Computing ulators. KZ as. Multimodal logical KZ dge on: theory and apilation. KZ transport process KZ xamples of datase KZ yram implementation KZ and composites, and charts. KZ ises will be preparament of students' M	position of crisis 2 position of crisis 2 possengers and 2 ts for finding 2 g differences in 2 on. The outcom 2 ettention is paid 2 ed according to lattab skills. 2
Interactive simulators and simulations Simulation theory and application of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical in Simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive sim 12Y1KN Combined Transportation Combined transport strategy and legislation. Load units. Means of transport in combined transport. Combined transport systems. Transshipping are: 23Y1KM Crisis Management Theory and legal frame of crisis management with direction to Rescue system (IZS). After introduction to safety domain, there are terms and knowled management and its targets; IZS-crisis management-crisis planning; and basic legislation. Practical part is concentrated to responsibility matrix con 23Y1KO Quantum Physics and Optoelectronics Ground of quantum physics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics components. 17Y1LL Logistics of Passenger and Freight Air Transport Logistics of Passenger and Freight Air Transport Logistics airline passenger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial air cargo. Information systems in air transport. Global distribution systems. 20Y1LN Location and Navigation Description and examples of road networks, localization on the network. Routing algorithms, their properties and implementation. Description and e transport connections, routing algorithms, their properties and implementation. 17Y1MD Marketing in Transportation General principles of marketing applied to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transport the application of marketing. 11Y1MM Mathematical Models in Economy The goal of the course is to teach selected methods of linear programming, with theoretical procedures applicable for individual tasks and their prog of the course i	hodels. Computing ulators. KZ as. Multimodal logical KZ dge on: theory and apilation. KZ transport process KZ xamples of datase KZ yram implementation KZ and composites, and charts. KZ ises will be preparament of students' M	position of crisis 2 position of crisis 2 possengers and 2 ts for finding 2 g differences in 2 on. The outcom 2 ettention is paid 2 ed according to lattab skills. 2
Interactive simulators and simulations	hodels. Computing ulators. KZ as. Multimodal logical KZ dge on: theory and apilation. KZ transport process KZ xamples of datase KZ yram implementation KZ and composites, and charts. KZ ises will be preparament of students' M	position of crisis 2 position of crisis 2 possengers and 2 ts for finding 2 g differences in 2 on. The outcom 2 ettention is paid 2 ed according to lattab skills. 2

15Y1NE Recent economic and s	German in the Economy and Society social issues of German speaking countries and of the EU. Reading and listening of texts. Lexical, grammatical and semantic	KZ analysis of texts.	2 Discussion on
selected topics.			
23Y1OK Types of technological sinfrastructures.	Protection of Critical Objects and Infrastructures systems, critical item, risks and their courses, criticality, vulnerability, connectivity, dependability, resilience, failure, protection, systems, critical item, risks and their courses, criticality, vulnerability, connectivity, dependability, resilience, failure, protection, systems, critical item, risks and their courses, criticality, vulnerability, connectivity, dependability, resilience, failure, protection, systems, critical item, risks and their courses, criticality, vulnerability, connectivity, dependability, resilience, failure, protection, systems, critical item, risks and their courses, criticality, vulnerability, connectivity, dependability, resilience, failure, protection, systems, criticality, connectivity, dependability, resilience, failure, protection, criticality, connectivity, dependability, connectivity, dependability, connectivity, dependability, connectivity, connectivity, criticality, connectivity, criticality, cr	KZ safety of critical ob	2 ects and critical
20Y1OI	Fare Collection and Information Systems	KZ	2
	s in public transport and their components (on-board units, validators, turnstiles,). Information systems and their componen	1	
panels) and operator	s (cycles, location or current delay of vehicles,). The issue of tariff systems. Other examples of clearance systems (parking	ı).	
14Y1OJ	Object - oriented programming in JAVA	KZ	2
	apsulation. Classes. Attributes. Access modifiers. Methods and overloading. Special methods (constructors, getters / setters) Polymorphism. Statics, constants, interfaces, abstract classes, enum, packages, exceptions, collections, generics, lambda e		
14Y1OP	Operating System	KZ	2
runlevels. Basic console	n GNU/Linux OS. X-window system. Rights management - users and groups, ACL rights. Filesystems and attributes. Prograr e programs / commands. Config files. SW management, package systems. Programs in graphic shell - text, spreadsheet, gra es management. Safe and secure configuration of OS. Remote administration.	=	
17Y1OF	Personal Finance	KZ	2
_	et, financing of basic living needs), debt (loans and credits, payment instruments, interest and fees, debt trap), financing of he	1	
consumer loans, refinar (retirement savings and	ncing), savings and investments (investment horizon, return, risk, investment strategy), insurance (insurance types, suitability a I insurance).	and adequacy), se	curing the future
20Y1OK	Road Lighting	KZ	2
	and terms, street lighting components (luminaires, control cabinets for street lighting, street lighting cables), characteristics of l	uminaires (lifetime	of light sources,
light distribution), stand	ards, measurement of illuminance and luminance in road lighting, tunnels, conceptual approach to street lighting design, ligh	ting calculations i	n DIALux and
Relux, street lighting co			
11Y1PV	Parametrical and Multicriterial Programming	KZ	2
	of linear programming with a parameter in objective function, on right sides and in the matrix of coeficients of linear constraints	1	
17Y1PM Human sources, work of	Personnel Management Personnel Management	KZ Itural communicat	2 ion.
12Y1PC	Pedestrian and Cycling Transport	KZ	2
	Pedestrian crossings. Modifications for blind, dim-sighted and disabled people. Design of cycle routes network. Ways of cycle ro	1	sign parameters
for cyclists. Separation	of cyclists from other transport modes. Cycle tracks and its design - one way streets, reserved traffic lanes, bus stops, crossing	ngs with other trar	nsport modes,
	s and road marking for cyclists.		
14Y1PG	Computer Graphics	KZ	2
	c and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with ec	diting programs (w	ithin the user
14Y1P2	s, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics cards. Computer Aid of Transportation Projecting 2	KZ	2
	ation for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting,	1	_
	relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic trans		
section). Basics of 3D n			· ·
18Y1PS	Computer Simulations in Mechanics	KZ	2
•	of tools for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model develop	•	
	is. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary conditions	and application of	f the load. Basic
14Y1PI	modal analysis. Introduction to complex nonlinear problems. Corporate Information System	KZ	2
	edge, components of information system, syntatic and semantic sense of data, structure of corporate information system, pa	1	
	on, storage, etc.), corporate information politic and information control, risks of information system operation, legal environmen		· -
	m, information system security, data protection, safety politics.		•
14Y1PZ	Advanced Data Processing in Spreadsheets	KZ	2
	r with principles of working in a spreadsheet. Graphic layout of the table appearance, formatting of numbers, insertion of form		-
-	tion. Working with large spreadsheets, filters, advanced filters, database functions. Pivot tables and charts, conditional formatting	ng, solution finding	, solver, macros,
	s and questions from various companies and training.	1/7	2
12Y1PD	Assessment of Transport Structures t structures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibilitie	KZ	2 and assessment
· · · · · · · · · · · · · · · · · · ·	the landscape. Rating fragmentation and landscape connectivity in the preparation of linear structures. Practical examples of		
the environment.			.
20Y1PK	Product Quality Management Processes	KZ	2
General principles of or	ganization management. Management systems and international standards; quality management systems. Quality products,	1	ms. A framework
of standards for systems	s management, management principles. Principles of process management, monitoring and measurement systems management	nt. Uniform framev	ork of standards
	ent. Process management principles. Metrology and testing. Product certification.	1	
14Y1PJ	C Programming Language	KZ	2
	ge. Preprocessor, basics of the C language (data types, syntax, commands), functions, pointes, dynamical memory allocation, stract data types (FIFO, LIFO, list), programming techniques (sorting, searching, recursion), using bitwise oprerators.	siring, files, struct	ures and unions.
12Y1C1	Designing Roads in Civil 3D I	KZ	2
	Designing Roads in Civil 3D I to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go throu	1	
	g, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. TI	-	-
12Y1C2	c building design in the real-life profession.		
	Designing Roads in Civil 3D II	KZ	2
	Designing Roads in Civil 3D II to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through	igh the complete o	design of this
particular linear building	Designing Roads in Civil 3D II to 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. The	igh the complete o	design of this
particular linear building improved and develope	Designing Roads in Civil 3D II to 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. The d. Students learn to design intersections.	igh the complete one previously acqu	design of this uired skills are
particular linear building improved and develope 14Y1PA	Designing Roads in Civil 3D II to 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. The d. Students learn to design intersections. 3D Modeling in AutoCAD	igh the complete on the previously acqu	design of this uired skills are
particular linear building improved and develope 14Y1PA Work in 3D non-parame	Designing Roads in Civil 3D II to 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. The d. Students learn to design intersections.	igh the complete on the previously acqu	design of this uired skills are

16Y1PV Operation, Construction and Maintenance of Vehicles	KZ	2
Methods of vehicle production. Vehicle maintenance. Vehicle diagnostics. Maintenence and repair plans. Engine maintenance and emission measure	ement. Transmissi	on mechanism.
General principles of engine diagnostics.	1/7	0
12Y1PU Organization Disposition of Railway Stations Connecting station. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zo	KZ	2
Reserve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic railway reasons.		iation yarus.
12Y1RU Railway Lines Reconstruction	KZ	2
Keeping railway line operational, maintaining lines and stations, geometrical alignment of railway line, vehicles for railway superstructure and substructure a		
and organising possesions, preparation of railway lines reconstruction and maintenance, process of railway line reconstruction.		,
16Y1RE Control and Electronic Vehicle Systems	KZ	2
Elementary concepts of regulation. Tools for analytical solution, linear system description. Basic types of a regulator (PID), properties, advantages, disa		
and hybrid drive control. Electric drive. Vehicle communication bus (CAN, LIN, FlexRay, ISObus, KWP2000 protocole etc.). Vehicle electronic control	, safety, communi	cation and
comfort systems.		
21Y1RZ Human Resources Management	KZ	2
The position of human resources in the organization and related disciplines file. Substance, importance and challenges of human resources manag		
environment of human resource management. Human resource planning. Search, recruitment and selection of employees. Motivation, evaluation and	remuneration of	staff. Positioning,
dismissal and redundancies of employees. Education of employees. Planning career management.		_
17Y1ST Titan Simulation	KZ	. 2
Titan is a management game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same productions and development. They become families with the consequence of the students of productions and the same families with the consequence.		•
determine the quantity and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequent of financial corporate reports and they use this information for other business decisions.	ices of their decis	ions by the ionn
20Y1SC Sensors and Actuators	KZ	2
Principles of sensors and actuators. Basics of measuring theory and actuating influence. The respective technologies and construction principles. Sensor		
state (temperature, humidity), chemical and particle flow values. Electrical, pneumatic and hydraulic actuators and solid phase elements.	is of friedrianical, e	siectio-magnetic,
17Y1SL Sociology of Human Resources	KZ	2
Human resources and their importance, work group as a special kind of social group, communication, personal management, modern management, l		
of the organization.	idilian resources	planning, caltare
11Y1SI Transportation Software Engineering	KZ	2
Basic concepts of software engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and imple		
and practical usuage.	J	,
22Y1SZ Forensic Expertise	KZ	2
Historical evolution of forensic engineering, forensic activity, current legislature in the Czech Republic, different disciplines, notion of forensic, forensic	ı c legislation, basi	c forensic acts,
expert role in the obtaining proofs, forensic methodology. Notion of the evidence, general principles of evidence obtaining, metrology, protocol, evidence	nces collection, s	ite inspection,
forensic report, elements. Finding, expert testimony / report.		
16Y1KS Quality and Reliability of Vehicles	KZ	2
Quality and reliability theory in design, development, production and operation of vehicles. Definition and possible approach to quality and reliability.		
Mode and Effects Analysis), QFD (Quality Function Deployment), DFx (Design for Assamly, Manufacturying, Quality, Services) and other method	s used in industria	Il applications.
Knowledge-based systems of quality and reliability, data collection.	147	
12Y1SU Road Management and Maintenance	KZ	2
Getting familiar with ownership of roads in the Czech Republic and the administration of the road at the state and county level. It is presented development and long term attatogy of the Ministry of Transport, Maintanages of roads winter and summer its requirements, appointing prescribilities and re-	=	
medium and long-term strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and re classroom as well as investment activity in highway engineering.	paii memous are	discussed in the
17Y1SK Urban and Regional Rail Transport Systems	KZ	2
Factors affecting transport demand, modal-split, distribution of passenger flows on public regional transport lines. Optimization of line management,		
evaluation of the timetable. Vehicle circulation creation. Optimizing driver shifts and arranging them in turnus. Effects of barrier-free and public transp	-	_
marketing.		
21Y1TH Aircraft Technical Handling	KZ	2
Aircraft towing and pushing tractors. GPU. Air conditioning and heating units. Aircraft fuel equipment. De-acing and anti-icing units. Loading and unlo		
passangers onboarding and offboarding. Operational processes of aircraft technical handling and regulations. Modernization and technical progress		
11Y1TG Graph Theory	KZ	2
Basic concepts and terminology of graph theory, graph representation. Problems of graph theory, problem instance. Graph search algorithms, trees,	minimum spannir	ng tree, shortest
path problem, Eulerian path, bipartite graph matching, flow networks, circulations, critical path method, traveling salesman problem. Problem of existen	ce and optimizatio	n and algorithms
for their solving. Computational complexity, dealing with NP-complete problems, heuristic approach.		
14Y1TI Creating Interactive Internet Applications	KZ	2
Possibilities of scripting language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions.	Your own applicat	ion programmed
in PHP language.		
14Y1UP Editing of Theses in MS Word	KZ	2
Students will be introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, cre		
figures, tables, graphs, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamles so that they are able to concentrate mainly on writing a thesis.	s editing dissertat	ions and theses,
18Y1UK Introduction of Rail Vehicles	KZ	2
Basic characteristics and parameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion		
track resistance. Total running resistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehicle.		_
and electric drive. Design concept rail vehicles and drive of wheel set.	, 5.000110111	.,, 5 6 7 1 61 1110
12Y1VC Waterways and Shipping	KZ	2
Basic modes of transport. The position of water transport in the transport system of the Czech Republic and the EU. Advantages and disadvantages		
of waterways in Europe, a network of waterways in the Czech Republic. Construction of the waterway and its equipment. Management of waterways	=	-
in inland navigation, navigation rules of operation, navigation maps.		-
23Y1VS Negotiation and Cooperation	KZ	2
23Y1VS Negotiation and Cooperation Code of conduct for negotiation. The influence of personality traits on the negotiations. Negotiation and commanding. Teamwork. Variants teams. Info		
Code of conduct for negotiation. The influence of personality traits on the negotiations. Negotiation and commanding. Teamwork. Variants teams. Information principles of negotiation, the essence of negotiation, the differences in negotiation in business and in crisis situations, the principle of "win both", specific processing th	ormal and formal i	ole in the team.
Code of conduct for negotiation. The influence of personality traits on the negotiations. Negotiation and commanding. Teamwork. Variants teams. Info	ormal and formal i	ole in the team.

14Y1VM Development of Applications for Mobile Devices	KZ	2
Object oriented programming, Java programming language, development environment, operating system Android, development application - widge	ts, containers, threa	ads, menu,
permissions, services, GUI.		
16Y1VT Development in Railroad Vehicles	KZ	2
Railroad vehicles traction. Railroad vehicle parametres regulation. Control and driving of railroad vehicles. Importance in heavy duty and personal traction.	ansportation. Critic	al situation
assesment. New materials in design. International standardization.		
14Y1WG Webdesign	KZ	2
Students will learn the basics of HTTP communication, URL and addressing, HTML5 markup language, advanced CSS3 techniques, accessible ar	nd usable web rules	s, responsive
webdesign, content management systems, web server installation + configuration directives. The subject matter will be trained on examples.		
14Y1W1 Webdesign 1	KZ	2
Students will learn the basics of communication HTTP, URL and addressing, markup languages HTML and XHTML, HTML tags, rules of web access	sibility and usability,	CSS properties
and selectors, the issue of web browsers, creating one to three column layout pages, sites validation, conditional comments. Topics will be practiced	d on practical exam	ples.
14Y1W2 Webdesign 2	KZ	2
Students will learn advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, we	o server installation	+ configuration
directives. Topics will be practiced on practical examples.		
16Y1ZG Introduction into Applied Computer Graphics	KZ	2
Computer graphics, division and applications with emphasis on transport, including development and research. Colours, colour perception, colour services and applications with emphasis on transport, including development and research.	1	rinciples of 2D
and 3D generation, elementary algorithms for graphic data workout. Visualisation principles and tasks, technics, graphics and visualisation HW bas	ics. Introduction to	2D and 3D
graphics software.		
14Y1ZM Fundamentals of parametric and adaptive modeling	KZ	2
Basics of work at products and parts creation. Sketch drawing by help of geometric relations, parametric dimensions, creation of adaptive models fr	om 2D sketches. Im	nport and export
from and to another systems. Fundamentals of assemblies creation.		
11Y1ZM Foundation of MATLAB Programming	KZ	2
To explain the principle of algorithmization, flow charts, description of MATLAB environment and its settings, MATLAB help, mathematical operators,		
control flow, inputs and outputs, graphics, optimization and program code debugging.		
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.	1	
Chain and Mathematical Methods. Terms. Relational Operators and Switches. Cycles for, while, foreach. Field - declaration, initialization, methods for		
parameters, return value, recursion. Program creation.		,
12Y1ZU Principles of Urbanism	KZ	2
Survey on history of city and settlement building. Functional components and their mutual relations (working, living, recreation, transportation). Spa	· · · · ·	_
Types of towns or cities with a certain prevailing function, forms of their development. Brief overview of land-use planning.	g	
15Y1ZV East-West dichotomy: Prelude to the Cold War	KZ	2
Historical prologue, evolution of the "West" and "East" from the 1500s. Focus on the history in the period between 1850 nad 1950. Milestones and col		_
in the end of 19th century and the beginning of the 20th century. Revolutions, the causes and consequences. Scientific and technological progress,	•	
Economic and financial history. Social changes. Discussions on texts, sources.	344000 4114 00	
16Y1ZL Vehicle Testing, Legislation and Construction	KZ	2
Vehicle, bus and motorbike costruction, aggregate computing, driving resistance, build and parameters of traction, constructional arrangement of personal arrangement of per	1 1	_
legislation in the EU and in the world, technical legislation creation, testing methods, vehicle tests, accelerated tests, mathematical modelling in testing methods.		303, IIIOIOIDINES,
Logication in the Ed and in the world, teerinical registration ordation, teering methods, verified teers, accelerated teers, mathematical modelling in tee	a.	

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.

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

15JZ3F

Code

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.

15JZ3I 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.

15JZ3N Foreign Language - German 3 Z 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 | Z | 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 | Z | 3 | Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation.

15JZ4F | Foreign Language - French 4 | Z,ZK | 3 | Grammar and 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.

15JZ4I Foreign Language - Italian 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.

15JZ4N Foreign Language - German 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 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 | 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 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.

15JZ4S Foreign Language - Spanish 4 Z,ZK 3

Grammar and stylistics. Selection of conversation and professional topics based on the language level and styly focus at the Faculty Improvement of language structure knowledge.

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:

Completion Credits

Name of the course

		1 -	
11CAL1	Calculus 1	Z,ZK	7
Sequence of real	numbers and its limit. Basic properties of mappings. Function of one real variable, its limit and derivative. Geometric properties of n-dim	ensional Euklidea	n space an
Cartes	ian coordinate system. Geometric meaning of the differential of functions several real variables, differential calculus of functions of sev	veral real variables	
11CAL2	Calculus 2	Z,ZK	5
Indefinite integral,	Newtonian integral, Riemannian integral of the function of one variable, improper Riemannian integral, Riemannian integral in Rn. Pa	rametric descriptio	n of regula
k-dimensional su	urfaces in Rn, Riemannian integral over regular surfaces. Line and surface integrals of the second type, Stokes theorems, ordinary diff	erential equations	of the first
	order, linear differential equations with constant coefficients and its systems		
11FYZ	Physics	Z,ZK	5
	Kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermodynamics.	'	'
11GIE	Geometry	KZ	3
Differential geom	etry of curves - parameterization, the arc of the curve, torsion and curvature, Frenet`s trihedron. Kinematics - a curve as a trajectory o	f the motion, the v	elocity, and
	acceleration of a particle moving on a curved path.		
11LA	Linear Algebra	Z,ZK	3
Vector spaces (lin	ear combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and the	ir solvability. Deter	minants an
	their applications. Scalar product, Similarity of matrices (eigenvalues and eigenvectors), Quadratic forms and their classifications	ion.	

441.0	Lineau Decembration	1/7	
11LP	Linear Programming	KZ	3
Formulation of the	problem of linear programming, transcription of some practical problems to the linear programming problems. Simplex and convex po	lyedra. Simplex m	ethod, basic
	solutions, duality principle in linear programming, stability of solution of linear programming problem. Traffic problem.		
11MSP	Modeling of Systems and Processes	Z,ZK	4
	tem, external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of differe	,	1
	linear system, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer function		
Linear and nom	Discretization of continuous systems. System interconnection.	on. Otability of Erri	systems.
440747		7.71	
11STAT	Statistics	Z,ZK	4
Basics of probabil	ity Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Paramet	tric tests Nonparar	netric tests
	Regression and correlation analysis		
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 communicat	ion and methods for its assuring. Safety codes – linear codes, cyclic codes, BCH codes, Reed-Solomon codes. Transmission channe	els, detection of tra	nsmission
	errors, probability of undetected error. Design and assessment of detection codes; requirements of the European standard EN 5		
11\/11\/1			2
11Y1MM	Mathematical Models in Economy	KZ KZ	I .
I ne goal of the col	urse is to teach selected methods of linear programming, with theoretical procedures applicable for individual tasks and their program	=	The outcom
	of the course is the ability to implement and solve basic tasks from the queue theory, graph theory and both free and constrained op	timization.	
11Y1PV	Parametrical and Multicriterial Programming	KZ	2
Solution to the prob	lem of linear programming with a parameter in objective function, on right sides and in the matrix of coeficients of linear constraints. Co	omputation of effici	ent solution.
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 implemen	ntation using forma	ii techniques
	and practical usuage.		
11Y1TG	Graph Theory	KZ	2
Basic concepts and	terminology of graph theory, graph representation. Problems of graph theory, problem instance. Graph search algorithms, trees, mir	nimum spanning tr	ee, shortest
path problem, Euler	ian path, bipartite graph matching, flow networks, circulations, critical path method, traveling salesman problem. Problem of existence a	nd optimization an	d algorithms
, ,	for their solving. Computational complexity, dealing with NP-complete problems, heuristic approach.	•	J
11Y1ZM		KZ	2
	Foundation of MATLAB Programming		1
lo explain the princ	iple of algorithmization, flow charts, description of MATLAB environment and its settings, MATLAB help, mathematical operators, materials and its settings.	rices and elements	s operations,
	control flow, inputs and outputs, graphics, optimization and program code debugging.		
12MDE	Transport Models and Transport Excesses	Z,ZK	3
Parameters of the t	raffic 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	ssessment. Statistical characteristics of transport. Transport excesses, their analysis, the causes, identify and minimize the consequ	ences. Improvina	of transport
'	safety and fluency.	, ,	·
42DDOK		V7	2
12PPOK	Designing Roads, Highways and Motorways	KZ	3
Definition, types, of	Designing Roads, Highways and Motorways ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard	l speed. Route in r	ural areas.
Definition, types, of	Designing Roads, Highways and Motorways ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet	l speed. Route in r	ural areas.
Definition, types, of	Designing Roads, Highways and Motorways ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard	l speed. Route in r	ural areas.
Definition, types, of	Designing Roads, Highways and Motorways ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet	l speed. Route in r	ural areas.
Definition, types, of Range of vision for 12X31	Designing Roads, Highways and Motorways ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet intersections. Project 1	speed. Route in r ty device. Crossing	rural areas. gs, junctions,
Definition, types, of Range of vision for 12X31 12X32	Designing Roads, Highways and Motorways ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet intersections. Project 1 Project 2	d speed. Route in r ty device. Crossing Z Z	rural areas. ps, junctions, 2 2
Definition, types, c Range of vision for 12X31 12X32 12X33	Designing Roads, Highways and Motorways ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet intersections. Project 1	z z z	ural areas. us, junctions, 2 2 2
Definition, types, of Range of vision for 12X31 12X32	Designing Roads, Highways and Motorways ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet intersections. Project 1 Project 2	d speed. Route in r ty device. Crossing Z Z	rural areas. ps, junctions, 2 2
Definition, types, c Range of vision for 12X31 12X32 12X33 12Y1C1	Designing Roads, Highways and Motorways ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet intersections. Project 1 Project 2 Project 3	z z z KZ	ural areas. us, junctions, 2 2 2 2 2
Definition, types, c Range of vision for 12X31 12X32 12X33 12Y1C1 The course is dev	Designing Roads, Highways and Motorways ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet intersections. Project 1 Project 2 Project 3 Designing Roads in Civil 3D I	z z z KZ	ural areas. s, junctions, 2 2 2 2 sign of this
Definition, types, c Range of vision for 12X31 12X32 12X33 12Y1C1 The course is dev	Designing Roads, Highways and Motorways ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet intersections. Project 1 Project 2 Project 3 Designing Roads in Civil 3D I roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The	z z z KZ	ural areas. s, junctions, 2 2 2 2 sign of this
Definition, types, of Range of vision for 12X31 12X32 12X33 12Y1C1 The course is developarticular linear but the Range of Particular linear but the Range of Range of Particular linear but the Range of Range of Particular linear but the Range of R	Designing Roads, Highways and Motorways ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet intersections. Project 1 Project 2 Project 3 Designing Roads in Civil 3D I roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The explanation of the traffic building design in the real-life profession.	Z Z Z KZ h the complete descourse also include	ural areas. ps, junctions, 2 2 2 2 sign of this des a basic
Definition, types, of Range of vision for 12X31 12X32 12X33 12Y1C1 The course is developarticular linear but 12Y1C2	Designing Roads, Highways and Motorways ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet intersections. Project 1 Project 2 Project 3 Designing Roads in Civil 3D I roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The explanation of the traffic building design in the real-life profession. Designing Roads in Civil 3D II	Z Z Z KZ h the complete descourse also includ	2 2 2 sign of this des a basic
Definition, types, of Range of vision for 12X31 12X32 12X33 12Y1C1 The course is developarticular linear but 12Y1C2 The course is developed to the course is	Designing Roads, Highways and Motorways ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet intersections. Project 1 Project 2 Project 3 Designing Roads in Civil 3D I roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The explanation of the traffic building design in the real-life profession. Designing Roads in Civil 3D II roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through the straffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through	Z Z Z KZ h the complete des	ural areas. ps, junctions, 2 2 2 2 sign of this des a basic 2 sign of this
Definition, types, of Range of vision for 12X31 12X32 12X33 12Y1C1 The course is developarticular linear but 12Y1C2 The course is developed to the course is	Designing Roads, Highways and Motorways ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet intersections. Project 1 Project 2 Project 3 Designing Roads in Civil 3D I roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The explanation of the traffic building design in the real-life profession. Designing Roads in Civil 3D II roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The	Z Z Z KZ h the complete des	ural areas. ps, junctions, 2 2 2 2 sign of this des a basic 2 sign of this
Definition, types, of Range of vision for 12X31 12X32 12X33 12Y1C1 The course is developarticular linear but 12Y1C2 The course is developarticular linear but particular linear but particular linear but 12Y1C2 The course is developarticular linear but 12X1C2 The course is developarticular linear linear but 12X1C2 The course is developarticular linear	Designing Roads, Highways and Motorways ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet intersections. Project 1 Project 2 Project 3 Designing Roads in Civil 3D I roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The explanation of the traffic building design in the real-life profession. Designing Roads in Civil 3D II roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through the straffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through	Z Z Z KZ h the complete des	ural areas. ps, junctions, 2 2 2 2 sign of this des a basic 2 sign of this
Definition, types, of Range of vision for 12X31 12X32 12X33 12Y1C1 The course is developarticular linear but 12Y1C2 The course is developed to the course is	Designing Roads, Highways and Motorways ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet intersections. Project 1 Project 2 Project 3 Designing Roads in Civil 3D I roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The explanation of the traffic building design in the real-life profession. Designing Roads in Civil 3D II roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The	Z Z Z KZ h the complete des	ural areas. ps, junctions, 2 2 2 2 sign of this des a basic 2 sign of this
Definition, types, or Range of vision for 12X31 12X32 12X33 12Y1C1 The course is developarticular linear but 12Y1C2 The course is developarticular linear but 12Y1DS	Designing Roads, Highways and Motorways ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet intersections. Project 1 Project 2 Project 3 Designing Roads in Civil 3D I roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The explanation of the traffic building design in the real-life profession. Designing Roads in Civil 3D II roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through the straffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The improved and developed. Students learn to design intersections.	z Z Z X KZ h the complete descourse also include KZ h the complete descourse also include KZ	ural areas. ps, junctions, 2 2 2 sign of this les a basic 2 sign of this d skills are
Definition, types, or Range of vision for 12X31 12X32 12X33 12Y1C1 The course is developarticular linear but 12Y1C2 The course is developarticular linear but 12Y1DS	Designing Roads, Highways and Motorways ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet intersections. Project 1 Project 2 Project 3 Designing Roads in Civil 3D I roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The explanation of the traffic building design in the real-life profession. Designing Roads in Civil 3D II roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The improved and developed. Students learn to design intersections. Project Documentation in Practice ation creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process.	z Z Z X KZ h the complete descourse also include KZ h the complete descourse also include KZ	ural areas. ps, junctions, 2 2 2 sign of this les a basic 2 sign of this d skills are
Definition, types, of Range of vision for 12X31 12X32 12X33 12Y1C1 The course is developarticular linear by 12Y1C2 The course is developarticular linear by 12Y1DS Project documents	Designing Roads, Highways and Motorways ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet intersections. Project 1 Project 2 Project 3 Designing Roads in Civil 3D I roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The explanation of the traffic building design in the real-life profession. Designing Roads in Civil 3D II roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The improved and developed. Students learn to design intersections. Project Documentation in Practice ation creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process. creation of some project documentation parts.	z Z Z X KZ h the complete descourse also include KZ Budget and pricin	ural areas. ps, junctions, 2 2 2 sign of this des a basic 2 sign of this deskills are 2 g. Practical
Definition, types, of Range of vision for 12X31 12X32 12X33 12Y1C1 The course is developarticular linear but 12Y1C2 The course is developarticular linear but 12Y1DS Project documentar 12Y1HD	Designing Roads, Highways and Motorways ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet intersections. Project 1 Project 2 Project 3 Designing Roads in Civil 3D I roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The explanation of the traffic building design in the real-life profession. Designing Roads in Civil 3D II roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The improved and developed. Students learn to design intersections. Project Documentation in Practice ation creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process. creation of some project documentation parts. Traffic Noise	z Z Z Z KZ h the complete decourse also include KZ KZ KZ KZ KZ KZ KZ KZ KZ	ural areas. ps, junctions, 2 2 2 2 sign of this des a basic 2 sign of this desid skills are 2 g. Practical
Definition, types, of Range of vision for 12X31 12X32 12X33 12Y1C1 The course is developarticular linear but 12Y1C2 The course is developarticular linear but 12Y1DS Project documentar 12Y1HD Acoustic introduction	Designing Roads, Highways and Motorways ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet intersections. Project 1 Project 2 Project 3 Designing Roads in Civil 3D I roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The explanation of the traffic building design in the real-life profession. Designing Roads in Civil 3D II roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through the design of the traffic building design in the real-life profession. Designing Roads in Civil 3D II roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The improved and developed. Students learn to design intersections. Project Documentation in Practice ation creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process. creation of some project documentation parts. Traffic Noise on, basic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regulation	z Z Z Z KZ h the complete decourse also include KZ b the complete decourse also include KZ S C C C C C C C C C C C C C C C C C C C	ural areas. ps, junctions, 2 2 2 2 sign of this des a basic 2 sign of this desid skills are 2 g. Practical 2 ic climate in
Definition, types, of Range of vision for 12X31 12X32 12X33 12Y1C1 The course is developarticular linear but 12Y1C2 The course is developarticular linear but 12Y1DS Project documentar 12Y1HD Acoustic introduction	Designing Roads, Highways and Motorways ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet intersections. Project 1 Project 2 Project 3 Designing Roads in Civil 3D I roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The explanation of the traffic building design in the real-life profession. Designing Roads in Civil 3D II roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through the design of roads as such, by the means of a 3D software. Students go through the design of roads as such, by the means of a 3D software. Students go through the design of roads as such, by the means of a 3D software. Students go through the design of roads as such, by the means of a 3D software. Students go through the design of roads as such, by the means of a 3D software. Students go through the design of roads as such, by the means of a 3D software. Students go through the design of roads as such, by the means of a 3D software. Students go through the design of roads as such, by the means of a 3D software. Students go through the design of roads as such, by the means of a 3D software. Students go through the design of roads as such, by the means of a 3D software. Students go through the design of roads as such, by the means of a 3D software. Students go through the design of roads as such, by the means of a 3D software. Students go through the design of roads as such, by the means of a 3D software. Students go through the design of roads as such, by the means of a 3D software. Students go through the design of roads as such, b	z Z Z Z KZ h the complete decourse also include KZ b the complete decourse also include KZ S C C C C C C C C C C C C C C C C C C C	ural areas. ps, junctions, 2 2 2 2 sign of this des a basic 2 sign of this desid skills are 2 g. Practical 2 ic climate in
Definition, types, of Range of vision for 12X31 12X32 12X33 12Y1C1 The course is developarticular linear but 12Y1C2 The course is developarticular linear but 12Y1DS Project documentar 12Y1HD Acoustic introduction	Designing Roads, Highways and Motorways ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet intersections. Project 1 Project 2 Project 3 Designing Roads in Civil 3D I roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The explanation of the traffic building design in the real-life profession. Designing Roads in Civil 3D II roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through the design of the traffic building design in the real-life profession. Designing Roads in Civil 3D II roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The improved and developed. Students learn to design intersections. Project Documentation in Practice ation creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process. creation of some project documentation parts. Traffic Noise on, basic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regulation	z Z Z Z KZ h the complete decourse also include KZ b the complete decourse also include KZ S C C C C C C C C C C C C C C C C C C C	ural areas. ps, junctions, 2 2 2 2 sign of this des a basic 2 sign of this desid skills are 2 g. Practical 2 ic climate in
Definition, types, of Range of vision for 12X31 12X32 12X33 12Y1C1 The course is developarticular linear but 12Y1C2 The course is developarticular linear but 12Y1DS Project documentar 12Y1HD Acoustic introduction	Designing Roads, Highways and Motorways ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet intersections. Project 1 Project 2 Project 3 Designing Roads in Civil 3D I roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The explanation of the traffic building design in the real-life profession. Designing Roads in Civil 3D II roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through the design of roads as such, by the means of a 3D software. Students go through the design of roads as such, by the means of a 3D software. Students go through the design of roads as such, by the means of a 3D software. Students go through the design of roads as such, by the means of a 3D software. Students go through the design of roads as such, by the means of a 3D software. Students go through the design of roads as such, by the means of a 3D software. Students go through the design of roads as such, by the means of a 3D software. Students go through the design of roads as such, by the means of a 3D software. Students go through the design of roads as such, by the means of a 3D software. Students go through the design of roads as such, by the means of a 3D software. Students go through the design of roads as such, by the means of a 3D software. Students go through the design of roads as such, by the means of a 3D software. Students go through the design of roads as such, by the means of a 3D software. Students go through the design of roads as such, by the means of a 3D software. Students go through the design of roads as such, b	z Z Z Z KZ h the complete decourse also include KZ b the complete decourse also include KZ S C C C C C C C C C C C C C C C C C C C	ural areas. ps, junctions, 2 2 2 2 sign of this des a basic 2 sign of this desid skills are 2 g. Practical 2 ic climate in
Definition, types, of Range of vision for Range of vision for 12X31 12X32 12X33 12Y1C1 The course is developarticular linear but 12Y1C2 The course is developarticular linear but 12Y1DS Project documentar 12Y1HD Acoustic introduction area, principles 12Y1KN	Designing Roads, Highways and Motorways ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet intersections. Project 1 Project 2 Project 3 Designing Roads in Civil 3D I roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The explanation of the traffic building design in the real-life profession. Designing Roads in Civil 3D II roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The improved and developed. Students learn to design intersections. Project Documentation in Practice ation creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process. creation of some project documentation parts. 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.	z Z Z Z KZ h the complete decourse also include KZ Budget and pricin KZ S. Creation acoust of interest. Method	ural areas. ps, junctions, 2 2 2 2 sign of this des a basic 2 sign of this desid skills are 2 g. Practical 2 ic climate in dology of
Definition, types, or Range of vision for 12X31 12X32 12X33 12Y1C1 The course is deveraged particular linear but 12Y1C2 The course is deveraged particular linear but 12Y1DS Project documentar 12Y1HD Acoustic introduction area, principles 12Y1KN Combined transp	Designing Roads, Highways and Motorways ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet intersections. Project 1 Project 2 Project 3 Designing Roads in Civil 3D I roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The explanation of the traffic building design in the real-life profession. Designing Roads in Civil 3D II roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The improved and developed. Students learn to design intersections. Project Documentation in Practice ation creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process. Creation of some project documentation parts. 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. Combined Transportation ort strategy and legislation. Load units. Means of transport in combined transport. Combined transport systems. Transshipping areas	z Z Z Z KZ h the complete decourse also include KZ Budget and pricin KZ S. Creation acoust of interest. Method	ural areas. ps, junctions, 2 2 2 2 sign of this des a basic 2 sign of this ad skills are 2 g. Practical 2 ic climate in dology of 2 ic centres.
Definition, types, or Range of vision for Range of vision for 12X31 12X32 12X33 12Y1C1 The course is developarticular linear but 12Y1C2 The course is developarticular linear but 12Y1DS Project documentar 12Y1HD Acoustic introduction area, principles 12Y1KN Combined transp 12Y1PC	Designing Roads, Highways and Motorways ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet intersections. Project 1 Project 2 Project 3 Designing Roads in Civil 3D I roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The explanation of the traffic building design in the real-life profession. Designing Roads in Civil 3D II roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The improved and developed. Students learn to design intersections. Project Documentation in Practice ation creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process. creation of some project documentation parts. 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. Combined Transportation ort strategy and legislation. Load units. Means of transport in combined transport. Combined transport systems. Transshipping areas Pedestrian and Cycling Transport	z Z Z KZ h the complete decourse also include KZ Budget and pricin KZ S. Creation acoust of interest. Method KZ Multimodal logist KZ Multimodal logist	ural areas. ps, junctions, 2 2 2 2 sign of this des a basic 2 sign of this ad skills are 2 g. Practical 2 ic climate in dology of 2 ic centres. 2
Definition, types, or Range of vision for 12X31 12X32 12X33 12Y1C1 The course is deveraged particular linear but 12Y1C2 The course is deveraged particular linear but 12Y1DS Project documentar 12Y1HD Acoustic introduction area, principles 12Y1KN Combined transp 12Y1PC Routes for pedestria	Designing Roads, Highways and Motorways ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet intersections. Project 1 Project 2 Project 3 Designing Roads in Civil 3D I roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The explanation of the traffic building design in the real-life profession. Designing Roads in Civil 3D II roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The improved and developed. Students learn to design intersections. Project Documentation in Practice ation creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process. creation of some project documentation parts. 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. Combined Transportation ort strategy and legislation. Load units. Means of transport nooment transport. Combined transport systems. Transshipping areas Pedestrian and Cycling Transport	speed. Route in it by device. Crossing a speed. Route in it by device. Crossing a speed. Route in it by device. Crossing a speed a spe	ural areas. ps, junctions, 2 2 2 2 sign of this des a basic 2 sign of this ad skills are 2 g. Practical 2 ic climate in dology of 2 ic centres. 2 parameters
Definition, types, or Range of vision for 12X31 12X32 12X33 12Y1C1 The course is deveraged particular linear but 12Y1C2 The course is deveraged particular linear but 12Y1DS Project documentar 12Y1HD Acoustic introduction area, principles 12Y1KN Combined transp 12Y1PC Routes for pedestria	Designing Roads, Highways and Motorways whership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet intersections. Project 1 Project 2 Project 3 Designing Roads in Civil 3D I roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The explanation of the traffic building design in the real-life profession. Designing Roads in Civil 3D II roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through allding, 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. Project Documentation in Practice ation creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process. creation of some project documentation parts. Traffic Noise Traffic Noise Traffic Noise Traffic Noise Traffic 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. Combined Transportation ort strategy and legislation. Load units. Means of transport in combined transport. Combined transport systems. Transshipping areas Pedestrian crossings. Modifications for blind, dim-sighted and disabled people. Design of cycle routes network. Ways of cycle route attention of cyclists from other transport modes. Cycle tracks and its design - o	speed. Route in it by device. Crossing a speed. Route in it by device. Crossing a speed. Route in it by device. Crossing a speed a spe	ural areas. ps, junctions, 2 2 2 2 sign of this des a basic 2 sign of this ad skills are 2 g. Practical 2 ic climate in dology of 2 ic centres. 2 parameters
Definition, types, or Range of vision for Range of vision for 12X31 12X32 12X33 12Y1C1 The course is developarticular linear but 12Y1C2 The course is developarticular linear but 12Y1DS Project documentar 12Y1HD Acoustic introduction area, principles 12Y1KN Combined transp 12Y1PC Routes for pedestria for cyclists. Separations of the second seco	Designing Roads, Highways and Motorways whership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet intersections. Project 1 Project 2 Project 3 Designing Roads in Civil 3D I roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The explanation of the traffic building design in the real-life profession. Designing Roads in Civil 3D II roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through a students in the real-life profession. Designing Roads in Civil 3D II roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through a students in the real-life profession. Posigning Roads in Civil 3D II roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through a students learn to design intersections. Project Documentation in Practice ation creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process. creation of some project documentation parts. 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. Combined Transportation ort strategy and legislation. Load units. Means of transport in combined t	speed. Route in reproduced in the produce. Crossing and produced in the complete decourse also included in the complete decourse and pricin and pricin accounts of interest. Method interest. Metho	ural areas. ps, junctions, 2 2 2 2 sign of this des a basic 2 sign of this ad skills are 2 g. Practical 2 ic climate in dology of 2 ic centres. 2 parameters ort modes,
Definition, types, crowder of vision for 12X31 12X32 12X33 12Y1C1 The course is deveraged particular linear but 12Y1C2 The course is deveraged particular linear but 12Y1DS Project documentar 12Y1HD Acoustic introduction area, principles 12Y1KN Combined transp 12Y1PC Routes for pedestria for cyclists. Separate	Designing Roads, Highways and Motorways whership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet intersections. Project 1 Project 2 Project 3 Designing Roads in Civil 3D I roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The explanation of the traffic building design in the real-life profession. Designing Roads in Civil 3D II roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through it is studing, 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. Project Documentation in Practice ation creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process. creation of some project documentation parts. 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. Combined Transportation ort strategy and legislation. Load units. Means of transport in combined transport. Combined transport systems. Transshipping areas Pedestrian crossings. Modifications for blind, dim-sighted and disabled people. Design of cycle routes network. Ways of cycle route ation of cyclists from other transport modes. Cycle tracks and it	speed. Route in it by device. Crossing a speed. Route in it by device. Crossing a speed. Route in it by device. Crossing a speed a spe	ural areas. ps, junctions, 2 2 2 2 sign of this des a basic 2 sign of this ad skills are 2 g. Practical 2 ic climate in dology of 2 parameters ort modes, 2
Definition, types, crowder of vision for 12X31 12X32 12X33 12Y1C1 The course is deveraged particular linear but 12Y1C2 The course is deveraged particular linear but 12Y1DS Project documentar 12Y1HD Acoustic introduction area, principles 12Y1KN Combined transp 12Y1PC Routes for pedestria for cyclists. Separate	Designing Roads, Highways and Motorways whership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet intersections. Project 1 Project 2 Project 3 Designing Roads in Civil 3D I roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The explanation of the traffic building design in the real-life profession. Designing Roads in Civil 3D II roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through a students in the real-life profession. Designing Roads in Civil 3D II roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through a students in the real-life profession. Posigning Roads in Civil 3D II roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through a students learn to design intersections. Project Documentation in Practice ation creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process. creation of some project documentation parts. 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. Combined Transportation ort strategy and legislation. Load units. Means of transport in combined t	speed. Route in it by device. Crossing a speed. Route in it by device. Crossing a speed. Route in it by device. Crossing a speed a spe	ural areas. ps, junctions, 2 2 2 2 sign of this des a basic 2 sign of this ad skills are 2 g. Practical 2 ic climate in dology of 2 parameters ort modes, 2
Definition, types, crowder of vision for 12X31 12X32 12X33 12Y1C1 The course is deveraged particular linear by 12Y1C2 The course is deveraged particular linear by 12Y1DS Project documentar 12Y1HD Acoustic introduction area, principles 12Y1KN Combined transp 12Y1PC Routes for pedestriate for cyclists. Separate 12Y1PD Assessment of transp	Designing Roads, Highways and Motorways whership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet intersections. Project 1 Project 2 Project 3 Designing Roads in Civil 3D I roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The explanation of the traffic building design in the real-life profession. Designing Roads in Civil 3D II roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through it is studing, 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. Project Documentation in Practice ation creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process. creation of some project documentation parts. 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. Combined Transportation ort strategy and legislation. Load units. Means of transport in combined transport. Combined transport systems. Transshipping areas Pedestrian crossings. Modifications for blind, dim-sighted and disabled people. Design of cycle routes network. Ways of cycle route ation of cyclists from other transport modes. Cycle tracks and it	speed. Route in reproduced in the produce. Crossing and produced in the complete descourse also included in the complete descourse also included in the complete despreviously acquired in the complete despreviously	ural areas. ps, junctions, 2 2 2 2 sign of this des a basic 2 sign of this ed skills are 2 g. Practical 2 ic climate in dology of 2 ic centres. 2 a parameters ort modes, 2 assessment
Definition, types, crowder of vision for 12X31 12X32 12X33 12Y1C1 The course is deveraged particular linear by 12Y1C2 The course is deveraged particular linear by 12Y1DS Project documentar 12Y1HD Acoustic introduction area, principles 12Y1KN Combined transp 12Y1PC Routes for pedestriate for cyclists. Separate 12Y1PD Assessment of transp	Designing Roads, Highways and Motorways were ship, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet intersections. Project 1 Project 2 Project 3 Designing Roads in Civil 3D I roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The explanation of the traffic building design in the real-life profession. Designing Roads in Civil 3D II roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through indicing, 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. Designing Roads in Civil 3D II roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through indicing, 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. Project Documentation in Practice ation creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process. creation of some project documentation parts. 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 studi	speed. Route in reproduced in the produce. Crossing and produced in the complete descourse also included in the complete descourse also included in the complete despreviously acquired in the complete despreviously	ural areas. ps, junctions, 2 2 2 2 sign of this des a basic 2 sign of this ad skills are 2 g. Practical 2 ic climate in dology of 2 ic centres. 2 a parameters ort modes, 2 assessment
Definition, types, or Range of vision for Range of vision for 12X31 12X32 12X33 12Y1C1 The course is deveraged particular linear by 12Y1C2 The course is deveraged particular linear by 12Y1DS Project documentar 12Y1HD Acoustic introduction area, principles 12Y1KN Combined transport structures 12Y1PD Assessment of transport structures	Designing Roads, Highways and Motorways whership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet intersections. Project 1 Project 2 Project 3 Designing Roads in Civil 3D I roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The explanation of the traffic building design in the real-life profession. Designing Roads in Civil 3D II roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The improved and developed. Students learn to design intersections. Project Documentation in Practice ation creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process. creation of some project documentation parts. Traffic Noise In Traffic Noise In June 10 A Country of the security of th	A speed. Route in it by device. Crossing a course of the complete decourse also include the course	ural areas. ps, junctions, 2 2 2 2 sign of this des a basic 2 sign of this ad skills are 2 g. Practical 2 ic climate in dology of 2 parameters ort modes, 2 assessment buildings on
Definition, types, or Range of vision for Range of vision for 12X31 12X32 12X33 12Y1C1 The course is developarticular linear but 12Y1C2 The course is developarticular linear but 12Y1DS Project documentar 12Y1HD Acoustic introduction area, principles 12Y1KN Combined transport structures 12Y1PD Assessment of transport structures 12Y1PU	Designing Roads, Highways and Motorways wereship, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet intersections. Project 1 Project 2 Project 3 Designing Roads in Civil 3D I roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The explanation of the traffic building design in the real-life profession. Designing Roads in Civil 3D II Toted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The improved and developed. Students learn to design intersections. Project Documentation in Practice ation creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process. creation of some project documentation parts. Traffic Noise un, 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. Combined Transport and Cycling Transport ans. Pedestrian crossings. Modifications for blind, dim-sighted and disabled people. Design of cycle routes network. Ways of cycle route attended to the proper transport structures and conductive in the preparation of linear structures. Practical examples of as the environment. Organization Disposition of Railway St	A speed. Route in it by device. Crossing the project of the complete decourse also include the course	ural areas. ps, junctions, 2 2 2 2 sign of this des a basic 2 sign of this desired skills are 2 g. Practical 2 ic climate in dology of 2 parameters ort modes, 2 assessment buildings on
Definition, types, or Range of vision for Range of vision for 12X31 12X32 12X33 12Y1C1 The course is developarticular linear by 12Y1C2 The course is developarticular linear by 12Y1DS Project documentar 12Y1HD Acoustic introduction area, principles 12Y1KN Combined transport structures for cyclists. Separation 12Y1PD Assessment of transport structures 12Y1PU Connecting station	Designing Roads, Highways and Motorways whership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet intersections. Project 1 Project 2 Project 3 Designing Roads in Civil 3D I roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The explanation of the traffic building design in the real-life profession. Designing Roads in Civil 3D II roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The improved and developed. Students learn to design intersections. Project Documentation in Practice ation creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process. creation of some project documentation parts. Traffic Noise In Traffic Noise In June 10 A Country of the security of th	A speed. Route in reproduced in the produce. Crossing and produced in the complete decourse also included in the complete decourse and pricing in the complete decourse in the complete decour	ural areas. ps, junctions, 2 2 2 2 sign of this des a basic 2 sign of this desired skills are 2 g. Practical 2 ic climate in dology of 2 parameters ort modes, 2 assessment buildings on

12Y1RU	Railway Lines Reconstruction	KZ	2
	ne operational, maintaining lines and stations, geometrical alignment of railway line, vehicles for railway superstructure and substructure.		
recepting railway iii	and organising possesions, preparation of railway lines reconstruction and maintenance, process of railway line reconstruction		scrieduling
10\/1011		KZ	2
12Y1SU	Road Management and Maintenance //ith ownership of roads in the Czech Republic and the administration of the road at the state and county level. It is presented developr		
•			· · · · · · · · · · · · · · · · · · ·
medium and long-to	erm strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and repair	methods are disci	ussed in the
10)(1)(0	classroom as well as investment activity in highway engineering.	177	
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 w		- 1
of waterways in Eu	rope, a network of waterways in the Czech Republic. Construction of the waterway and its equipment. Management of waterways and it	its operation. The I	egal regime
	in inland navigation, navigation rules of operation, navigation maps.		
12Y1ZU	Principles of Urbanism	KZ	2
Survey on history	of city and settlement building. Functional components and their mutual relations (working, living, recreation, transportation). Spacial	arrangement of se	ettlements.
	Types of towns or cities with a certain prevailing function, forms of their development. Brief overview of land-use planning.		
12ZTS	Railway Lines and Stations	Z,ZK	4
Rail transport. Ra	allway track geometry parameters. Route layout of railway lines. Railway line construction - railway substructure and superstructure. S	patial layout of rail	way lines.
	Railway control systems in relation to infrastructure. Operating and carriage points. Railway lines net and category. Traction in rail tr	ansport.	
12ZYDI	Introduction to Transportation Engineering	Z,ZK	2
Role of transportati	on in land-use planning. Basic terms in transportation engineering. Traffic survey and traffic prognosis. Introduction to topic of roads, p	ublic mass transpo	rt. Negative
	impacts of transportation to environment and safety.		
14ASD	Algorithm and Data Structures	KZ	3
	niliarized with selected basic and derived data structures, algorithms, their properties and their design procedure. Students will analyze		_
	et task and the resulting algorithm write by means of flowcharts, practice in reading algorithms recorded by means of the flowchart an		
	algebra with forming the conditions for the algorithms.		
14DATS	Database Systems	KZ	2
	f database systems, conceptual model, relational data model, the principles of normal forms, relational database design, security and		
Basic concepts c	queries, relational algebra, SQL language, client / server, multilayer architectures, distributed database systems. Access to data via t		database
14DMG		KZ	2
_	Datamining		_
	ces and knowledge, data warehouses and OLAP technology for data mining, data preprocessing in the process of knowledge acquisities of appearance (along the process) mining appearance to a Powering along the process of knowledge acquisities and data was the processing of the process of knowledge acquisities and data was the processing of the process of knowledge acquisities and data was the processing in the process of knowledge acquisities and data was the processing in the process of knowledge acquisities and acquisities and data was the process of knowledge acquisities and data was the p	-	- 1
mining characteris	tics of concepts (classes), mining association rules from relational db. and data warehousing, classification (decisions tree, Bayesian	cob., using neural	networks).
4.44600	Prediction. Cluster analysis. Mining in complex structured data, multimedia dbf., www.	177	
14KSP	Constructing with Computer Aid	KZ	2
-	m determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic common work		
and CA systems.	Co-ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting possible	ilites, AutoCAD en	vironment
	profiles, drawings with raster foundaments).		
14MPG	Modern Programming Approaches	KZ	2
_	Modern Programming Approaches t oriented programming, polymorphism, references, memory allocation, inheritage, generic programming, operator overloading, STL I		
Principles of object	Modern Programming Approaches	library, object impl	ementation
Principles of object	Modern Programming Approaches t oriented programming, polymorphism, references, memory allocation, inheritage, generic programming, operator overloading, STL I of abstract data types, graph and graph algorithm implementation focused on logistic problems. Programming	library, object impl	ementation 2
Principles of object	Modern Programming Approaches t oriented programming, polymorphism, references, memory allocation, inheritage, generic programming, operator overloading, STL I of abstract data types, graph and graph algorithm implementation focused on logistic problems.	library, object impl	ementation 2
Principles of object 14PRG The Course Progr	Modern Programming Approaches t oriented programming, polymorphism, references, memory allocation, inheritage, generic programming, operator overloading, STL I of abstract data types, graph and graph algorithm implementation focused on logistic problems. Programming	library, object impl KZ nming language is	ementation 2 expanded
Principles of object 14PRG The Course Progr	Modern Programming Approaches t oriented programming, polymorphism, references, memory allocation, inheritage, generic programming, operator overloading, STL I of abstract data types, graph and graph algorithm implementation focused on logistic problems. Programming ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python program	library, object impl KZ nming language is	ementation 2 expanded
Principles of object 14PRG The Course Progr	Modern Programming Approaches t oriented programming, polymorphism, references, memory allocation, inheritage, generic programming, operator overloading, STL I of abstract data types, graph and graph algorithm implementation focused on logistic problems. Programming ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python program rticipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and search working with date and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML).	library, object impl KZ nming language is	ementation 2 expanded
Principles of object 14PRG The Course Proginere so that the paid	Modern Programming Approaches t oriented programming, polymorphism, references, memory allocation, inheritage, generic programming, operator overloading, STL I of abstract data types, graph and graph algorithm implementation focused on logistic problems. Programming ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python program rticipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and search working with date and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). Project 1	KZ nming language is ning, tuples, sets, o	ementation 2 expanded dictionaries,
14PRG The Course Progress of the the the part of the	Modern Programming Approaches t oriented programming, polymorphism, references, memory allocation, inheritage, generic programming, operator overloading, STL I of abstract data types, graph and graph algorithm implementation focused on logistic problems. Programming ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python program rticipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and search working with date and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). Project 1 Project 2	KZ ming language is ning, tuples, sets, or Z Z	ementation 2 expanded dictionaries, 2 2
14PRG The Course Progress of the the part of the the part of the p	Modern Programming Approaches t oriented programming, polymorphism, references, memory allocation, inheritage, generic programming, operator overloading, STL I of abstract data types, graph and graph algorithm implementation focused on logistic problems. Programming ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python program rticipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and search working with date and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). Project 1 Project 2 Project 3	KZ nming language is ning, tuples, sets, or Z Z Z	ementation 2 expanded dictionaries, 2 2 2 2
14PRG The Course Progress of the the part of the the part of the p	Modern Programming Approaches t oriented programming, polymorphism, references, memory allocation, inheritage, generic programming, operator overloading, STL I of abstract data types, graph and graph algorithm implementation focused on logistic problems. Programming ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python program rticipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and search working with date and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). Project 1 Project 2 Project 3 Animation and Visualization	KZ mining language is ning, tuples, sets, or Z Z Z KZ	ementation 2 expanded dictionaries, 2 2 2 2 2
Principles of object 14PRG The Course Programmer so that the parameter in	Modern Programming Approaches t oriented programming, polymorphism, references, memory allocation, inheritage, generic programming, operator overloading, STL in of abstract data types, graph and graph algorithm implementation focused on logistic problems. Programming ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python programming skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and search working with date and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). Project 1 Project 2 Project 3 Animation and Visualization tions and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and Spa	KZ ming language is ning, tuples, sets, or Z Z Z KZ ce Warp objects. A	ementation 2 expanded dictionaries, 2 2 2 2 Atmospheric
Principles of object 14PRG The Course Programmer so that the parameter so the parameter so that the parameter so the parameter so that the parameter so that the parameter so thad the parameter so that the parameter so the parameter so the pa	Modern Programming Approaches t oriented programming, polymorphism, references, memory allocation, inheritage, generic programming, operator overloading, STL in of abstract data types, graph and graph algorithm implementation focused on logistic problems. Programming ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python programming sains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and search working with date and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). Project 1 Project 2 Project 3 Animation and Visualization tions and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and Spas, rendering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animation	KZ ming language is ning, tuples, sets, or Z Z Z KZ ce Warp objects. A susing Inverse Kin	ementation 2 expanded dictionaries, 2 2 2 2 Atmospheric ematics.
Principles of object 14PRG The Course Programmer so that the parameter so the parameter so that the parameter so the parameter so that the parameter so that the parameter so thad the parameter so that the parameter so the parameter so the pa	Modern Programming Approaches t oriented programming, polymorphism, references, memory allocation, inheritage, generic programming, operator overloading, STL in of abstract data types, graph and graph algorithm implementation focused on logistic problems. Programming ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python programming sains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and search working with date and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). Project 1 Project 2 Project 3 Animation and Visualization tions and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and Spass, rendering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animation Barrierless Transport	KZ ming language is ning, tuples, sets, or Z Z Z KZ ce Warp objects. A susing Inverse Kin KZ	ementation 2 expanded dictionaries, 2 2 2 2 Atmospheric ematics. 2
Principles of object 14PRG The Course Programmer so that the parameter so the parameter so that the parameter so the parameter so that the parameter so that the parameter so thad the parameter so that the parameter so the parameter so that t	Modern Programming Approaches t oriented programming, polymorphism, references, memory allocation, inheritage, generic programming, operator overloading, STL in of abstract data types, graph and graph algorithm implementation focused on logistic problems. Programming ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python programming sains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and search working with date and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). Project 1 Project 2 Project 3 Animation and Visualization tions and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and Spass, rendering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animation Barrierless Transport tless accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students of the programming, operator overloading, STL in the programming, operator overloading, STL in the programming and properties on logistic problems. Programming Programming Programming Programming In the programming programming, operator overloading, STL in the programming and properties on logistic problems. Programming Programmin	KZ ming language is ning, tuples, sets, or Z Z Z KZ ce Warp objects. A using Inverse Kin KZ will gain theoretica	ementation 2 expanded dictionaries, 2 2 2 2 Atmospheric ematics. 2 I knowledge
Principles of object 14PRG The Course Programmer so that the parameter so the parameter so that the parameter so the parameter so that the parameter so that the parameter so thad the parameter so that the parameter so the parameter so that t	Modern Programming Approaches t oriented programming, polymorphism, references, memory allocation, inheritage, generic programming, operator overloading, STL in of abstract data types, graph and graph algorithm implementation focused on logistic problems. Programming ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python programming sains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and search working with date and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). Project 1 Project 2 Project 3 Animation and Visualization tions and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and Spass, rendering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animation Barrierless Transport rless accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students of the properties of the Python programming and properties of the Python programming and properties of the Python program in the Python program in the Properties of the Python program in the Properties of the Python program in the Properties of the Python program in t	KZ ming language is ning, tuples, sets, or Z Z Z KZ ce Warp objects. A using Inverse Kin KZ will gain theoretica	ementation 2 expanded dictionaries, 2 2 2 2 Atmospheric ematics. 2 I knowledge
Principles of object 14PRG The Course Programmer so that the parameter so the parameter so that the parameter so the parameter so that the parameter so that the parameter so thad the parameter so that the parameter so the parameter so the pa	Modern Programming Approaches t oriented programming, polymorphism, references, memory allocation, inheritage, generic programming, operator overloading, STL in of abstract data types, graph and graph algorithm implementation focused on logistic problems. Programming ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python programming shills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and search working with date and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). Project 1 Project 2 Project 3 Animation and Visualization tions and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and Spass, rendering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animation Barrierless Transport less accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students worment roads, railway stations, public transport stops, terminal buildings, vehicles, public transport, information and orientation systems. Theoretical knowledge will be supplemented by practical examples.	KZ ming language is ning, tuples, sets, or Z Z Z KZ ce Warp objects. A susing Inverse Kin KZ will gain theoretica and transportation	ementation 2 expanded dictionaries, 2 2 2 2 Atmospheric ematics. 2 Il knowledge technology.
Principles of object 14PRG The Course Programmer so that the parameter so the parameter so that the parameter so the parameter so that the parameter so that the parameter so thad the parameter so that the parameter so the parameter so that t	Modern Programming Approaches t oriented programming, polymorphism, references, memory allocation, inheritage, generic programming, operator overloading, STL in of abstract data types, graph and graph algorithm implementation focused on logistic problems. Programming ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python programming sains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and search working with date and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). Project 1 Project 2 Project 3 Animation and Visualization tions and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and Spass, rendering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animation Barrierless Transport rless accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students of the properties of the Python programming and properties of the Python programming and properties of the Python program in the Python program in the Properties of the Python program in the Properties of the Python program in the Properties of the Python program in t	KZ ming language is ning, tuples, sets, or Z Z Z KZ ce Warp objects. A using Inverse Kin KZ will gain theoretica	ementation 2 expanded dictionaries, 2 2 2 2 Atmospheric ematics. 2 I knowledge
Principles of object 14PRG The Course Programmer so that the parameter so the parameter so that the parameter so the parameter so that the parameter so that the parameter so thad the parameter so that the parameter so the parameter so the pa	Modern Programming Approaches t oriented programming, polymorphism, references, memory allocation, inheritage, generic programming, operator overloading, STL in of abstract data types, graph and graph algorithm implementation focused on logistic problems. Programming ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python programming shills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and search working with date and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). Project 1 Project 2 Project 3 Animation and Visualization tions and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and Spass, rendering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animation Barrierless Transport less accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students worment roads, railway stations, public transport stops, terminal buildings, vehicles, public transport, information and orientation systems. Theoretical knowledge will be supplemented by practical examples.	KZ ming language is ning, tuples, sets, or z Z Z Z KZ ce Warp objects. A using Inverse Kin KZ will gain theoretical and transportation KZ	ementation 2 expanded dictionaries, 2 2 2 2 Atmospheric ematics. 2 Il knowledge technology.
Principles of object 14PRG The Course Programmer so that the parameter so the parameter so that the parameter so the parameter so that the parameter so that the parameter so thad the parameter so that the parameter so the parameter so the pa	Modern Programming Approaches t oriented programming, polymorphism, references, memory allocation, inheritage, generic programming, operator overloading, STL to f abstract data types, graph and graph algorithm implementation focused on logistic problems. Programming ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python program riticipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and search working with date and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). Project 1 Project 2 Project 3 Animation and Visualization tions and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and Spass, rendering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animation. Barrierless Transport tless accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students of the properties of transport stops, terminal buildings, vehicles, public transport, information and orientation systems. Biometric Methods	KZ ming language is ning, tuples, sets, or z Z Z Z KZ ce Warp objects. A using Inverse Kin KZ will gain theoretical and transportation KZ nd geometry, iris re	ementation 2 expanded dictionaries, 2 2 2 2 Atmospheric ematics. 2 Il knowledge technology. 2 ecognition,
Principles of object 14PRG The Course Programmer so that the parameter so the parameter so that the parameter so the parameter so that the parameter so that the parameter so thad the parameter so that the parameter so the parameter so the pa	Modern Programming Approaches t oriented programming, polymorphism, references, memory allocation, inheritage, generic programming, operator overloading, STL to of abstract data types, graph and graph algorithm implementation focused on logistic problems. Programming ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python program riticipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and search working with date and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). Project 1 Project 2 Project 3 Animation and Visualization tions and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and Spass, rendering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animation. Barrierless Transport riess accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students of the public transport stops, terminal buildings, vehicles, public transport, information and orientation systems are Theoretical knowledge will be supplemented by practical examples. Biometric Methods rms, authentication methods, principles and performance measurement of biometric systems, overview of biometric technologies, had	KZ ming language is ning, tuples, sets, or z Z Z Z KZ ce Warp objects. A using Inverse Kin KZ will gain theoretical and transportation KZ nd geometry, iris re	ementation 2 expanded dictionaries, 2 2 2 2 Atmospheric ematics. 2 Il knowledge technology. 2 ecognition,
Principles of object 14PRG The Course Programmer so that the parameter so the parameter so that the parameter so the parameter so that the parameter so that the parameter so thad the parameter so that the parameter so the parameter so the pa	Modern Programming Approaches 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. Programming ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python program riticipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and search working with date and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). Project 1 Project 2 Project 3 Animation and Visualization tions and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and Spass, rendering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animation. Barrierless Transport less accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students of the state of the public transport stops, terminal buildings, vehicles, public transport, information and orientation systems. Theoretical knowledge will be supplemented by practical examples. Biometric Methods rms, authentication methods, principles and performance measurement of biometric systems, overview of biometric technologies, hand the properties of the properties on the wrist, ear biometrics, fingerprint recognition, skin spectroscopy, behavioral method, 2D and 3D face recognition, vein patterns on the wrist, ear biometrics, fingerprint recognition, skin spectroscopy, behavioral method, 2D and 3D face recognition, vein patterns on the wrist, ear biometrics, fingerprint recognition, skin spectroscopy, behavioral method, 2D and 3D face recognition, vein patterns on the wrist, ear biometrics, fingerprint recognition, skin spectroscopy, behavioral method.	KZ ming language is ning, tuples, sets, or z Z Z Z KZ ce Warp objects. A using Inverse Kin KZ will gain theoretical and transportation KZ nd geometry, iris re	ementation 2 expanded dictionaries, 2 2 2 2 Atmospheric ematics. 2 Il knowledge technology. 2 ecognition,
Principles of object 14PRG The Course Proghere so that the parameter so the parameter so that the parameter so the parameter so that the parameter so the parameter so that the	Modern Programming Approaches 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. Programming ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python program ticipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and search working with date and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). Project 1 Project 2 Project 3 Animation and Visualization tions and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and Spass, rendering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animation. Barrierless Transport less accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students of the state of the sta	KZ ming language is ning, tuples, sets, or z Z Z Z KZ ce Warp objects. A using Inverse Kin KZ will gain theoretical and transportation KZ nd geometry, iris methods, the use or KZ	ementation 2 expanded dictionaries, 2 2 2 2 Atmospheric ematics. 2 Il knowledge technology. 2 ecognition, f biometrics 2
Principles of object 14PRG The Course Proghere so that the parameter so the parameter so that the parameter so the parameter so that the parameter so the parameter so that the	Modern Programming Approaches 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. Programming ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python program riticipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and search working with date and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). Project 1 Project 2 Project 3 Animation and Visualization tions and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and Spas, rendering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animation Barrierless Transport less accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students working with supplemented by practical examples. Biometric Methods Theoretical knowledge will be supplemented by practical examples. Biometric Methods Transport applications, safety and risks of biometric technologies. Computer Hardware	KZ ming language is ning, tuples, sets, or z Z Z Z KZ ce Warp objects. A using Inverse Kin KZ will gain theoretical and transportation KZ nd geometry, iris methods, the use or KZ	ementation 2 expanded dictionaries, 2 2 2 2 Atmospheric ematics. 2 Il knowledge technology. 2 ecognition, f biometrics 2
Principles of object 14PRG The Course Proghere so that the parameter so the parameter so that the parameter so the parameter so that the parameter so the parameter so that the	Modern Programming Approaches 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. Programming ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python program ricipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and search working with date and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). Project 1 Project 2 Project 3 Animation and Visualization tions and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and Spass, rendering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animation Barrierless Transport less accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students of the summent roads, railway stations, public transport stops, terminal buildings, vehicles, public transport, information and orientation systems in Theoretical knowledge will be supplemented by practical examples. Biometric Methods Transport Methods Transport applications, safety and risks of biometric technologies. Computer Hardware arithmetic and logical units, I/O subsystem.	KZ ming language is hing, tuples, sets, or tuples, sets,	ementation 2 expanded dictionaries, 2 2 2 2 Atmospheric ematics. 2 Il knowledge technology. 2 ecognition, ff biometrics 2 ontrollers,
Principles of object 14PRG The Course Proghere so that the parameter so the parameter so that the parameter so the parameter so that the parameter so the parameter so that the	Modern Programming Approaches 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. Programming ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python program riticipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and search working with date and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). Project 1 Project 2 Project 3 Animation and Visualization tions and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and Spas, rendering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animation Barrierless Transport Pless accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students of the properties of the public transport stops, terminal buildings, vehicles, public transport, information and orientation systems. Theoretical knowledge will be supplemented by practical examples. Biometric Methods rms, authentication methods, principles and performance measurement of biometric systems, overview of biometric technologies, han enthod, 2D and 3D face recognition, vein patterns on the wrist, ear biometrics, fingerprint recognition, skin spectroscopy, behavioral in transport applications, safety and risks of biometric technologies. Computer Hardware secture, basics of logical circuits design and their realization using FPGA. In detail, description of computer architecture and separate parithmetic and logical units, I/O subsystem. Modeling Complex Assemblies and Models in Parametric Modeller	KZ ming language is ning, tuples, sets, or z Z Z Z KZ ce Warp objects. A using Inverse Kin KZ will gain theoretical and transportation KZ nd geometry, iris renethods, the use or KZ	ementation 2 expanded dictionaries, 2 2 2 2 Atmospheric ematics. 2 Il knowledge technology. 2 ecognition, ff biometrics 2 ontrollers, 2
Principles of object 14PRG The Course Proghere so that the parameter so the parameter so that the parameter so the parameter so that the parameter so the parameter so that the	Modern Programming Approaches 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. Programming ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python program tricipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and search working with date and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). Project 1 Project 2 Project 3 Animation and Visualization tions and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and Spas, rendering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animation Barrierless Transport less accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students on the state of the properties of the process of the p	KZ ming language is ning, tuples, sets, or z Z Z Z KZ ce Warp objects. A using Inverse Kin KZ will gain theoretical and transportation KZ nd geometry, iris renethods, the use or KZ	ementation 2 expanded dictionaries, 2 2 2 2 Atmospheric ematics. 2 Il knowledge technology. 2 ecognition, of biometrics 2 ontrollers, 2
Principles of object 14PRG The Course Proghere so that the parameter so the parameter so that the parameter so the parameter so that the parameter so the parameter so that the	Modern Programming Approaches 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. Programming ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python program ticipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and search working with date and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). Project 1 Project 2 Project 3 Animation and Visualization tions and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and Spas, rendering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animation Barrierless Transport less accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students on the state of transport and properties and performance measurement of biometric systems, overview of biometric technologies, han nethod, 2D and 3D face recognition, evin patterns on the wrist, ear biometrics, fingerprint recognition, skin spectroscopy, behavioral in transport applications, safety and risks of biometric technologies. Computer Hardware cture, basics of logical circuits design and their realization using FPGA. In detail, description of computer architecture and separate parithmetic and logical units, I/O subsystem. Modeling Complex Assemblies and Models in Parametric Modeller gramming - tools and methodology of working subassemblies and assemblies, sheet metal parts modelling, welded assemblies, pipel Photorealistic output rendering - physical and material properties, lighting sources. MKP - visual example.	KZ ming language is hing, tuples, sets, or tuples, sets,	ementation 2 expanded dictionaries, 2 2 2 2 atmospheric ematics. 2 Il knowledge technology. 2 ecognition, of biometrics 2 ontrollers, 2 ion lines.
Principles of object 14PRG The Course Proghere so that the parameter so the parameter so that the parameter so the parameter so that the parameter so the parameter so that the	Modern Programming Approaches 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. Programming ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python program ricipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and search working with date and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). Project 1 Project 2 Project 2 Project 3 Animation and Visualization tions and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and Spas, rendering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animation Barrierless Transport less accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students worment roads, railway stations, public transport stops, terminal buildings, vehicles, public transport, information and orientation systems. Theoretical knowledge will be supplemented by practical examples. Biometric Methods rms, authentication methods, principles and performance measurement of biometric systems, overview of biometric technologies, han intransport applications, safety and risks of biometric recognition, skin spectroscopy, behavioral material prospectives. In the programming in transport and their realization using FPGA. In detail, description of computer architecture and separate parithmetic and logical units, I/O subsystem. Modeling Complex Assemblies and assemblies, sheet metal parts modelling, welded assemblies, pipel Photorealistic output rendering - physical and material properties, lighting sources. MKP - visual example. Object - oriented programming in JAVA	KZ ming language is hing, tuples, sets, or z Z Z Z KZ ce Warp objects. A susing Inverse Kin KZ will gain theoretica and transportation KZ nd geometry, iris repethods, the use or KZ warts designing - compared to KZ incompared to KZ material KZ warts designing - compared to KZ incompared to KZ material KZ kZ incompared to KZ kZ incompared to KZ kZ incompared to KZ incompared to KZ kZ incompared to KZ kZ incompared to KZ kZ incompared to KZ	ementation 2 expanded dictionaries, 2 2 2 2 atmospheric ematics. 2 Il knowledge technology. 2 ecognition, of biometrics 2 ontrollers, 2 ion lines. 2
Principles of object 14PRG The Course Proghere so that the parameter so the parameter so that the parameter so the parameter so that the parameter so the parameter so that the	Modern Programming Approaches 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. Programming ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python program ricipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and search working with date and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). Project 1 Project 2 Project 3 Animation and Visualization tions and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and Spass, rendering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animation Barrierless Transport less accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students of the surface of the programming in the supplemented by practical examples. Biometric Methods Transport Methods Transport applications, safety and risks of biometric exchnologies. Computer Hardware Interpretation of the programming in PACA. In detail, description of computer architecture and separate parithmetic and logical units, I/O subsystem. Modeling Complex Assemblies and Models in Parametric Modeller Transming - tools and methodology of working subassemblies and assemblies, sheet metal parts modelling, welded assemblies, pipel Photorealistic output rendering - physical and material properties, lighting sources. MKP - visual example. Object - oriented programming in JAVA Encapsulation. Classes. Attributes. Access modifiers. Methods and overloading. Special methods (constructors, getters / setters). Bare	KZ ming language is hing, tuples, sets, or tuples, sets,	ementation 2 expanded dictionaries, 2 2 2 2 Atmospheric ematics. 2 Il knowledge technology. 2 ecognition, of biometrics 2 ontrollers, 2 son lines. 2 s. Reference
Principles of object 14PRG The Course Proghere so that the paragraph of t	Modern Programming Approaches t oriented programming, polymorphism, references, memory allocation, inheritage, generic programming, operator overloading, STL to of abstract data types, graph and graph algorithm implementation focused on logistic problems. Programming ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python program riticipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and search working with date and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). Project 1 Project 2 Project 3 Animation and Visualization tions and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and Spas, rendering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animation Barrierless Transport less accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students volument roads, railway stations, public transport stops, terminal buildings, vehicles, public transport, information and orientation systems. Biometric Methods Theoretical knowledge will be supplemented by practical examples. Biometric Methods Biometric Methods Tins, authentication methods, principles and performance measurement of biometric systems, overview of biometric technologies, hainethod, 2D and 3D face recognition, vein patterns on the wrist, ear biometrics, fingerprint recognition, skin spectroscopy, behavioral in transport applications, safety and risks of biometric technologies. Computer Hardware coture, basics of logical circuits design and their realization using FPGA. In detail, description of computer architecture and separate parthmetic and logical units, I/O subsystem. Modeling Complex Assemblies and Models in Parametric Modeller gramming - tools and methodology of	KZ ming language is ning, tuples, sets, or z Z Z Z Ce Warp objects. A using Inverse Kin KZ will gain theoretica and transportation KZ methods, the use or kZ wars designing - compared to the compared to	ementation 2 expanded dictionaries, 2 2 2 2 Atmospheric ematics. 2 Il knowledge technology. 2 ecognition, of biometrics 2 ontrollers, 2 s. Reference is functions.
Principles of object 14PRG The Course Proghere so that the paragraph of t	toriented programming, polymorphism, references, memory allocation, inheritage, generic programming, operator overloading, STL in of abstract data types, graph and graph algorithm implementation focused on logistic problems. Programming ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python program riticipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and search working with date and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). Project 1 Project 2 Project 3 Animation and Visualization tions and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and Spas, rendering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animation Barrierless Transport less accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students on the state of the stat	Ibrary, object implication of KZ Imming language is a sing, tuples, sets, or Z Z Z Z Ice Warp objects. A susing Inverse Kin KZ Will gain theoretical and transportation KZ Ind geometry, iris remethods, the use of KZ Parts designing - compared to KZ Indication of KZ	ementation 2 expanded dictionaries, 2 2 2 2 Atmospheric ematics. 2 Il knowledge technology. 2 ecognition, of biometrics 2 ontrollers, 2 ion lines. 2 s. Reference is functions. 2
Principles of object 14PRG The Course Proghere so that the paragraph of t	to riented programming, polymorphism, references, memory allocation, inheritage, generic programming, operator overloading, STL to of abstract data types, graph and graph algorithm implementation focused on logistic problems. Programming ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python program riticipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and search working with date and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). Project 1 Project 2 Project 2 Project 3 Animation and Visualization tions and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and Spas, rendering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animation Barrierless Transport less accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students varieties are reminably systems and systems. Theoretical knowledge will be supplemented by practical examples. Biometric Methods Ins., authentication methods, principles and performance measurement of biometric systems, overview of biometric technologies, has neithod, 2D and 3D face recognition, vein patterns on the wrist, ear biometrics, fingerprint recognition, skin spectroscopy, behavioral in transport applications, safety and risks of biometric technologies. Computer Hardware International objects and Models in Parametric Modeller Tramming - tools and methodology of working subassemblies and sesemblies, sheet metal parts modelling, welded assemblies, pipel Photorealistic output rendering - physical and material properties, lighting sources. MKP - visual example. Object - oriented programming in JAVA Encapsulation, Classes, Attributes, Access modifiers, Methods and overloading, Special methods (constru	KZ mining language is ining, tuples, sets, or ining, sets, or ining, tuples, sets, or ining, tuples, sets, or ining,	ementation 2 expanded dictionaries, 2 2 2 2 Atmospheric ematics. 2 Il knowledge technology. 2 ecognition, of biometrics 2 controllers, 2 s. Reference is functions. 2 OS boot,
Principles of object 14PRG The Course Proghere so that the paragraph of t	toriented programming, polymorphism, references, memory allocation, inheritage, generic programming, operator overloading, STL in of abstract data types, graph and graph algorithm implementation focused on logistic problems. Programming ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python program riticipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and search working with date and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). Project 1 Project 2 Project 3 Animation and Visualization tions and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and Spas, rendering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animation Barrierless Transport less accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students on the state of the stat	KZ mining language is ining, tuples, sets, or ining, sets, or ining, tuples, sets, or ining, tuples, sets, or ining,	ementation 2 expanded dictionaries, 2 2 2 2 Atmospheric ematics. 2 Il knowledge technology. 2 ecognition, of biometrics 2 controllers, 2 s. Reference is functions. 2 OS boot,

14Y1P2	Computer Aid of Transportation Projecting 2	KZ	2
	pplication for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, dat utes, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transitio		
modification (attrib	section). Basics of 3D modelling.	ir curve, cross-and	a longitudina
14Y1PA	3D Modeling in AutoCAD	KZ	2
	arametric 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.		1
14Y1PG	Computer Graphics	KZ	2
	graphic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with editi	ng programs (with	1
14Y1PI	level scope) using layers, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphic Corporate Information System	KZ	2
	n-knowledge, components of information system, syntatic and semantic sense of data, structure of corporate information system, pa		1
	duction, storage, etc.), corporate information politic and information control, risks of information system operation, legal environment of state information system, information system security, data protection, safety politics.		-
14Y1PJ	C Programming Language	KZ	2
	Iguage. Preprocessor, basics of the C language (data types, syntax, commands), functions, pointes, dynamical memory allocation, strir Implementations of abstract data types (FIFO, LIFO, list), programming techniques (sorting, searching, recursion), using bitwise of	ng, files, structures	s and unions
14Y1PZ	Advanced Data Processing in Spreadsheets	KZ	2
	familiar with principles of working in a spreadsheet. Graphic layout of the table appearance, formatting of numbers, insertion of formula familiar with principles of working in a spreadsheet.		1
	etection. Working with large spreadsheets, filters, advanced filters, database functions. Pivot tables and charts, conditional formatting, s		_
	data analysis. Examples and questions from various companies and training.	<u> </u>	
14Y1TI	Creating Interactive Internet Applications	KZ	2
Possibilities of scri	oting language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions. You in PHP language.	r own application	programmed
14Y1UP	Editing of Theses in MS Word	KZ	2
	introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, crea		
	phs, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless ec		
, , , ,	so that they are able to concentrate mainly on writing a thesis.	J	
14Y1VM Object oriented	Development of Applications for Mobile Devices programming, Java programming language, development environment, operating system Android, development application - widgets	KZ containers threa	2 ads menu
	permissions, services, GUI.	,	,,
14Y1W1	Webdesign 1	KZ	2
	the basics of communication HTTP, URL and addressing, markup languages HTML and XHTML, HTML tags, rules of web accessibilit the basics of web browsers, creating one to three column layout pages, sites validation, conditional comments. Topics will be practice	•	
14Y1W2	Webdesign 2	KZ	2
Students will learn	advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, web set directives. Topics will be practiced on practical examples.	ver installation +	configuration
14Y1WG	Webdesign	KZ	2
Students will lear	n the basics of HTTP communication, URL and addressing, HTML5 markup language, advanced CSS3 techniques, accessible and usebdesign, 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
	Java SE Platform. IDE Installation and First Project. Comments. Variables and Type System. Operators. User Input and Parsing. Chaematical Methods. Terms. Relational Operators and Switches. Cycles for, while, foreach. Field - declaration, initialization, methods for		
4 4 \ / 4 7 \ 4	parameters, return value, recursion. Program creation.	1/7	
14Y1ZM Basics of work at p	Fundamentals of parametric and adaptive modeling roducts 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.	KZ D sketches. Impo	2 rt and expor
15DPLG	Transportation Psychology	Z	2
Subject of psychological	pgy and its basic concepts. Information intake, decision-making and behaviour. Performance. Engineering psychology and vehicle consilel route and traffic conditions, accidents and traffic incidents. Selection and training of the staff. Work and leisure. Age as a factor in tr	ruction. Psycholog	gical aspects
15JZ1A	Foreign Language - English 1	7	3
	tures and Style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and co stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles		-
15JZ2A	Foreign Language - English 2	Z,ZK	3
	ures and style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and co stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles	mmunicative skills	1
15JZ3F	Foreign Language - French 3	Z	3
Grammar and styl	istics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of I d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work		_
45 170.	features. Practice of oral and written presentation.	_	
15JZ3I	Foreign Language - Italian 3	Z	3
Crommor =	istics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of I d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work		_
-		,	
and perceptive an	features. Practice of oral and written presentation.		2
and perceptive an		Z	3 e knowledge

15JZ3R	,		1
	Foreign Language - Russian 3	Z	3
	istics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lad communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work was a communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work was a communicative skills, vocabulary development.		_
and perceptive and	features. Practice of oral and written presentation.	with (professional)	text and its
15JZ3S	Foreign Language - Spanish 3	Z	3
	istics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of R		_
	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v		-
	features. Practice of oral and written presentation.		
15JZ4F	Foreign Language - French 4	Z,ZK	3
Grammar and styli	istics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la	anguage structure	knowledge
and perceptive and	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v	vith (professional)	text and its
	features. Practice of oral and written presentation.		
15JZ4I	Foreign Language - Italian 4	Z,ZK	3
· · · · · · · · · · · · · · · · · · ·	istics. 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.		_
and perceptive and	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work values features. Practice of oral and written presentation.	with (professional)	text and its
15JZ4N	Foreign Language - German 4	Z.ZK	3
	istics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la	,	1 -
•	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v		•
	features. Practice of oral and written presentation.	, u	
15JZ4R	Foreign Language - Russian 4	Z,ZK	3
Grammar and styli	istics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la	anguage structure	knowledge
and perceptive and	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v	with (professional)	text and its
	features. Practice of oral and written presentation.		
15JZ4S	Foreign Language - Spanish 4	Z,ZK	3
	istics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la		-
and perceptive and	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v	vith (professional)	text and its
. = \ / = .	features. Practice of oral and written presentation.		_
15X31	Project 1	Z	2
15X32	Project 2	Z	2
15X33	Project 3	Z	2
15Y1BO	Work Safety and Health Protection in Transportation	KZ	2
Fundamental legis	Stative, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation. H	ealth protection p	rogrammes,
	health insurance of home and foreign business trips, statistics, working practice.		
15Y1DZ	History of Railway	KZ	2
Horse-drawn railw	History of Railway ways, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repu	KZ ublic", electric trac	tion, World
Horse-drawn railw	History of Railway ways, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repuway development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connecti	KZ ublic", electric trac	tion, World
Horse-drawn railw War II railways, railv	History of Railway ways, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repulway development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connection railway accidents, railway junctions. Excursions and projections.	KZ ublic", electric trac ons, railway lines	tion, World construction
Horse-drawn railw War II railways, railw 15Y1EH	History of Railway ways, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repulway development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connection railway accidents, railway junctions. Excursions and projections. European Integration within Historical Context	KZ ublic", electric trac ons, railway lines	tion, World construction
Horse-drawn railw War II railways, railv 15Y1EH Versailles system,	History of Railway ways, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repular development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connection railway accidents, railway junctions. Excursions and projections. European Integration within Historical Context formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism. Li	KZ ublic", electric trac ons, railway lines KZ ttle Entente, its pr	tion, World construction 2 inciples and
Horse-drawn railw War II railways, railv 15Y1EH Versailles system,	History of Railway ways, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repulation way development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connection railway accidents, railway junctions. Excursions and projections. European Integration within Historical Context formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism. Lifter Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and it	KZ ublic", electric trac ons, railway lines KZ ttle Entente, its pr	tion, World construction 2 inciples and
Horse-drawn railw War II railways, railw 15Y1EH Versailles system, goals. Europe afte	History of Railway ways, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repularly development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connection railway accidents, railway junctions. Excursions and projections. European Integration within Historical Context formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism. Lifter Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and it New quality of French-German relationship - a driving power of starting European integration.	KZ ublic", electric trac ons, railway lines KZ ttle Entente, its pr ss consequences	tion, World construction 2 inciples and for Europe.
Horse-drawn railw War II railways, railw 15Y1EH Versailles system, goals. Europe afte	History of Railway ways, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repularly development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connection railway accidents, railway junctions. Excursions and projections. European Integration within Historical Context formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism. Lifter Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and it New quality of French-German relationship - a driving power of starting European integration. French Area Studies and Transportation	KZ ublic", electric trac ons, railway lines KZ ttle Entente, its pr s consequences KZ	tion, World construction 2 inciples and for Europe.
Horse-drawn railw War II railways, railw 15Y1EH Versailles system, goals. Europe afte 15Y1FD France - geograp	History of Railway ways, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repularly development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connection railway accidents, railway junctions. Excursions and projections. European Integration within Historical Context formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism. Lifter Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and it New quality of French-German relationship - a driving power of starting European integration.	KZ ublic", electric traceons, railway lines KZ ttle Entente, its press consequences KZ fic, specialised te	tion, World construction 2 inciples and for Europe.
Horse-drawn railw War II railways, railw 15Y1EH Versailles system, goals. Europe afte 15Y1FD France - geograp	History of Railway ways, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repular development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connection railway accidents, railway junctions. Excursions and projections. European Integration within Historical Context formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism. Lieter Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and it New quality of French-German relationship - a driving power of starting European integration. French Area Studies and Transportation ohy and regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air traffich society and culture. Current political system. System of education, studying in France. Selected authors of French literature. French	KZ ublic", electric traceons, railway lines KZ ttle Entente, its press consequences KZ fic, specialised tech gastronomy.	tion, World construction 2 inciples and for Europe. 2 rminology.
Horse-drawn railw War II railways, railw 15Y1EH Versailles system, goals. Europe afte 15Y1FD France - geograp Frer 15Y1HD	History of Railway ways, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repular development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connection railway accidents, railway junctions. Excursions and projections. European Integration within Historical Context formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism. Lieser Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and it New quality of French-German relationship - a driving power of starting European integration. French Area Studies and Transportation only and regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air traf	KZ ublic", electric traceons, railway lines KZ ttle Entente, its press consequences KZ fic, specialised tech gastronomy. KZ	tion, World construction 2 inciples and for Europe. 2 rminology.
Horse-drawn railw War II railways, railw 15Y1EH Versailles system, goals. Europe afte 15Y1FD France - geograp Frer 15Y1HD History of city mass	History of Railway ways, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Report way development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connection railway accidents, railway junctions. Excursions and projections. European Integration within Historical Context formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism. Lieter Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and it New quality of French-German relationship - a driving power of starting European integration. French Area Studies and Transportation only and regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air traffich society and culture. Current political system. System of education, studying in France. Selected authors of French literature. French History of City Mass Transport	KZ ublic", electric traceons, railway lines KZ ttle Entente, its press consequences KZ ffic, specialised tech gastronomy. KZ and developments	tion, World construction 2 inciples and for Europe. 2 rminology.
Horse-drawn railw War II railways, railw 15Y1EH Versailles system, goals. Europe afte 15Y1FD France - geograp Frer 15Y1HD History of city mass	History of Railway ways, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repular development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connection railway accidents, railway junctions. Excursions and projections. European Integration within Historical Context formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism. Lie er Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and it New quality of French-German relationship - a driving power of starting European integration. French Area Studies and Transportation ohy and regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air traffich society and culture. Current political system. System of education, studying in France. Selected authors of French literature. French History of City Mass Transport s transport in the world, development of tram, bus and trolley-bus systems. History of transport networks in the world, current trends as	KZ ublic", electric traceons, railway lines KZ ttle Entente, its press consequences KZ ffic, specialised tech gastronomy. KZ and developments	tion, World construction 2 inciples and for Europe. 2 rminology.
Horse-drawn railw War II railways, railw 15Y1EH Versailles system, goals. Europe afte 15Y1FD France - geograp Frer 15Y1HD History of city mass cleara	History of Railway ways, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repulary development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connection railway accidents, railway junctions. Excursions and projections. European Integration within Historical Context formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism. Lie er Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and it New quality of French-German relationship - a driving power of starting European integration. French Area Studies and Transportation only and regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air traffich society and culture. Current political system. System of education, studying in France. Selected authors of French literature. French History of City Mass Transport s transport in the world, development of tram, bus and trolley-bus systems. History of transport networks in the world, current trends and ance systems. History of city transport in Prague and Brno. History of tram, bus and trolley-bus operation systems in the Czech Reput	KZ ublic", electric traceons, railway lines KZ ttle Entente, its press consequences KZ fic, specialised tech gastronomy. KZ and developments blic and Slovakia. KZ	tion, World construction 2 inciples and for Europe. 2 rminology. 2 of tariff and
Horse-drawn railw War II railways, railw 15Y1EH Versailles system, goals. Europe afte 15Y1FD France - geograp Frer 15Y1HD History of city mass cleara 15Y1HE Basic knowledge	History of Railway ways, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repulary development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connection railway accidents, railway junctions. Excursions and projections. European Integration within Historical Context formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism. Lie er Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and it New quality of French-German relationship - a driving power of starting European integration. French Area Studies and Transportation only and regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air traffich society and culture. Current political system. System of education, studying in France. Selected authors of French literature. French History of City Mass Transport s transport in the world, development of tram, bus and trolley-bus systems. History of transport networks in the world, current trends and ance systems. History of city transport in Prague and Brno. History of tram, bus and trolley-bus operation systems in the Czech Reput Work Hygiene and Ergonomics in Traffic	KZ ublic", electric traceons, railway lines KZ ttle Entente, its press consequences KZ ffic, specialised tech gastronomy. KZ and developments blic and Slovakia. KZ factors on health of	tion, World construction 2 inciples and for Europe. 2 rminology. 2 of tariff and 2 of workers.
Horse-drawn railw War II railways, railw 15Y1EH Versailles system, goals. Europe afte 15Y1FD France - geograp Frer 15Y1HD History of city mass cleara 15Y1HE Basic knowledge	History of Railway ways, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repulsive Way development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connection railway accidents, railway junctions. Excursions and projections. European Integration within Historical Context formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism. Liver Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and it New quality of French-German relationship - a driving power of starting European integration. French Area Studies and Transportation ohy and regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air traffich society and culture. Current political system. System of education, studying in France. Selected authors of French literature. French History of City Mass Transport s transport in the world, development of tram, bus and trolley-bus systems. History of transport networks in the world, current trends a sance systems. History of city transport in Prague and Brno. History of tram, bus and trolley-bus operation systems in the Czech Reput Work Hygiene and Ergonomics in Traffic of occupational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of these	KZ ublic", electric traceons, railway lines KZ ttle Entente, its press consequences KZ ffic, specialised tech gastronomy. KZ and developments blic and Slovakia. KZ factors on health of	tion, World construction 2 inciples and for Europe. 2 rminology. 2 of tariff and 2 of workers.
Horse-drawn railw War II railways, railw 15Y1EH Versailles system, goals. Europe afte 15Y1FD France - geograp Frer 15Y1HD History of city mass cleara 15Y1HE Basic knowledge	History of Railway ways, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repulsive Way development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connection railway accidents, railway junctions. Excursions and projections. European Integration within Historical Context formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism. Lie er Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and it New quality of French-German relationship - a driving power of starting European integration. French Area Studies and Transportation Only and regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air traffich society and culture. Current political system. System of education, studying in France. Selected authors of French literature. French History of City Mass Transport s transport in the world, development of tram, bus and trolley-bus systems. History of transport networks in the world, current trends a cance systems. History of city transport in Prague and Brno. History of tram, bus and trolley-bus operation systems in the Czech Reput Work Hygiene and Ergonomics in Traffic of occupational hygiene and ergonomics, and their application in transport. Working environment. Adaptation of technology to position of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technology to position and the position of technology to position and the position of technology to position and the position of technology to position of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technology to position and transport in the position and transport in the position of technology to p	KZ ublic", electric traceons, railway lines KZ ttle Entente, its press consequences KZ ffic, specialised tech gastronomy. KZ and developments blic and Slovakia. KZ factors on health of	tion, World construction 2 inciples and for Europe. 2 rminology. 2 of tariff and 2 of workers.
Horse-drawn railw War II railways, railw 15Y1EH Versailles system, goals. Europe afte 15Y1FD France - geograp Frer 15Y1HD History of city mass cleara 15Y1HE Basic knowledge Creation and prote	History of Railway ways, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repulary development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connection railway accidents, railway junctions. Excursions and projections. European Integration within Historical Context formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism. Liester Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and in New quality of French-German relationship - a driving power of starting European integration. French Area Studies and Transportation Only and regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air traffich society and culture. Current political system. System of education, studying in France. Selected authors of French literature. French History of City Mass Transport Is transport in the world, development of tram, bus and trolley-bus systems. History of transport networks in the world, current trends a cance systems. History of city transport in Prague and Brno. History of tram, bus and trolley-bus operation systems in the Czech Reput Work Hygiene and Ergonomics in Traffic For occupational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of these rection of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technology to perform the field of transportation; relevant legislature.	KZ ublic", electric traceons, railway lines KZ tttle Entente, its press consequences KZ fic, specialised tech gastronomy. KZ and developments blic and Slovakia. KZ factors on health obssibilities and ski	tion, World construction 2 inciples and for Europe. 2 rminology. 2 of tariff and 2 pf workers.
Horse-drawn railw War II railways, railw 15Y1EH Versailles system, goals. Europe afte 15Y1FD France - geograp Frer 15Y1HD History of city mass cleara 15Y1HE Basic knowledge Creation and prote 15Y1HL Beginnings of flying	History of Railway ways, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Reputago development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connectivations and projections. European Integration within Historical Context formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism. Liether Hitter's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and it New quality of French-German relationship - a driving power of starting European integration. French Area Studies and Transportation only and regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air traffich society and culture. Current political system. System of education, studying in France. Selected authors of French literature. Frence History of City Mass Transport stransport in the world, development of tram, bus and trolley-bus systems. History of transport networks in the world, current trends a sance systems. History of city transport in Prague and Brno. History of tram, bus and trolley-bus operation systems in the Czech Reputagor of working conditions that do not damage public health. Mutual links: man-machine-environment factors, and the influence of these exterior of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technology to perform the field of transportation; relevant legislature. History of Civil Aviation g, development of aircrafts lighter than air. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of amous aviators. Helicopters. CSA airplanes. Development of aircrafts in Czechoslovakia between the years 1945-1989. Classic era of	KZ ublic", electric traceons, railway lines KZ tttle Entente, its press consequences KZ fic, specialised tech gastronomy. KZ and developments blic and Slovakia. KZ factors on health obssibilities and ski	tion, World construction 2 inciples and for Europe. 2 rminology. 2 of tariff and 2 pf workers. Ils of a man 2 ch Republic.
Horse-drawn railw War II railways, railw 15Y1EH Versailles system, goals. Europe afte 15Y1FD France - geograp Frer 15Y1HD History of city mass cleara 15Y1HE Basic knowledge Creation and prote 15Y1HL Beginnings of flying World airports. Fa	History of Railway ways, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repulary development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connection railway accidents, railway junctions. Excursions and projections. European Integration within Historical Context	KZ ublic", electric trace ons, railway lines on KZ ttle Entente, its press consequences KZ fic, specialised tech gastronomy. KZ and developments oblic and Slovakia. KZ factors on health obssibilities and ski	tion, World construction 2 inciples and for Europe. 2 rminology. 2 of tariff and workers. Ils of a man 2 ch Republic era of civil
Horse-drawn railw War II railways, railw 15Y1EH Versailles system, goals. Europe afte 15Y1FD France - geograp Frer 15Y1HD History of city mass cleara 15Y1HE Basic knowledge Creation and prote 15Y1HL Beginnings of flying	History of Railway ways, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repulary development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connection railway accidents, railway junctions. Excursions and projections. European Integration within Historical Context formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism. Lifer Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and in New quality of French-German relationship - a driving power of starting European integration. French Area Studies and Transportation only and regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air traffich society and culture. Current political system. System of education, studying in France. Selected authors of French literature. French History of City Mass Transport stransport in the world, development of tram, bus and trolley-bus systems. History of transport networks in the world, current trends a cance systems. History of city transport in Prague and Brno. History of tram, bus and trolley-bus operation systems in the Czech Reput Work Hygiene and Ergonomics in Traffic of occupational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of these election of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technology to perform the field of transportation; relevant legislature. History of Civil Aviation g, development of aircrafts lighter than air. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of aviation. Modern era of civil aviation. Airline companies. Supersonic flying. Modern History in Context: Every Day Life and Tra	KZ ublic", electric traceons, railway lines KZ tttle Entente, its press consequences KZ fic, specialised tech gastronomy. KZ and developments blic and Slovakia. KZ factors on health obssibilities and ski	tion, World construction 2 inciples and for Europe. 2 rminology. 2 of tariff and 2 pf workers. Ils of a man.
Horse-drawn railw War II railways, railw 15Y1EH Versailles system, goals. Europe afte 15Y1FD France - geograp Frer 15Y1HD History of city mass cleara 15Y1HE Basic knowledge Creation and prote 15Y1HL Beginnings of flying World airports. Fa	History of Railway ways, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repulary development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connection railway accidents, railway junctions. Excursions and projections. European Integration within Historical Context formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism. Lieter Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and it New quality of French-German relationship - a driving power of starting European integration. French Area Studies and Transportation The stransport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air traffich society and culture. Current political system. System of education, studying in France. Selected authors of French literature. French History of City Mass Transport History of City Mass Transport to the world, development of tram, bus and trolley-bus systems. History of transport in the world, development of tram, bus and Brno. History of tram, bus and trolley-bus operation systems in the Czech Repular Work Hygiene and Ergonomics in Traffic of occupational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of these action of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technology to perfect examples from the field of transportation; relevant legislature. History of Civil Aviation g, development of aircrafts lighter than air. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of aircraf	KZ ublic", electric trace ons, railway lines on KZ ttle Entente, its press consequences. KZ fic, specialised tech gastronomy. KZ and developments olic and Slovakia. KZ factors on health obssibilities and ski	tion, World construction 2 inciples and for Europe. 2 rminology. 2 of tariff and 2 of workers. Ils of a man 2 ch Republic era of civil
Horse-drawn railw War II railways, railw 15Y1EH Versailles system, goals. Europe afte 15Y1FD France - geograp Frer 15Y1HD History of city mass cleara 15Y1HE Basic knowledge Creation and prote 15Y1HL Beginnings of flying World airports. Fa	History of Railway ways, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repulary development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connection railway accidents, railway junctions. Excursions and projections. European Integration within Historical Context formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism. Lier Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and in New quality of French-German relationship - a driving power of starting European integration. French Area Studies and Transportation French Area Studies and Transportation Thistory of City Mass Transport. Road traffic, motorways, railway traffic, TGV, air traffich society and culture. Current political system. System of education, studying in France. Selected authors of French literature. French History of City Mass Transport In the world, development of tram, bus and trolley-bus systems. History of transport networks in the world, current trends a lance systems. History of city transport in Prague and Brno. History of tram, bus and trolley-bus operation systems in the Czech Reput Work Hygiene and Ergonomics in Traffic of occupational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of these exiction of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technology to predict the practical examples from the field of transportation; relevant legislature. History of Civil Aviation g, development of aircrafts lighter than air. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of a amous aviators. Helicopters. CSA airplanes. Development of aircrafts in Czechoslovakia between the years 1945-1989. Classic	KZ ublic", electric trace ons, railway lines on KZ ttle Entente, its press consequences. KZ fic, specialised tech gastronomy. KZ and developments olic and Slovakia. KZ factors on health obssibilities and ski	tion, World construction 2 inciples and for Europe. 2 rminology. 2 of tariff and 2 of workers. Ils of a man. 2 ch Republic. era of civil
Horse-drawn railw War II railways, railw 15Y1EH Versailles system, goals. Europe afte 15Y1FD France - geograp Frer 15Y1HD History of city mass cleara 15Y1HE Basic knowledge Creation and prote 15Y1HL Beginnings of flying World airports. Fa	History of Railway ways, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repulary development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connection railway accidents, railway junctions. Excursions and projections. European Integration within Historical Context formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism. Lier Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and in New quality of French-German relationship - a driving power of starting European integration. French Area Studies and Transportation French Area Studies and Transportation French Area Studies and Transport in Road traffic, motorways, railway traffic, TGV, air trainch society and culture. Current political system. System of education, studying in France. Selected authors of French literature. French History of City Mass Transport In the world, development of tram, bus and trolley-bus systems. History of transport networks in the world, current trends a race systems. History of city transport in Prague and Brno. History of tram, bus and trolley-bus operation systems in the Czech Reput Work Hygiene and Ergonomics in Traffic Of occupational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of these rection of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technology to prefer the precipitation of transport than air. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of aircrafts lighter than air. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of aviations. Modern era of civil aviation. Airline companies. Supersonic flying. Modern History in Context: Every Day Life	KZ ublic", electric trace ons, railway lines on KZ ttle Entente, its press consequences. KZ fic, specialised tech gastronomy. KZ and developments olic and Slovakia. KZ factors on health obssibilities and ski	tion, World construction 2 inciples and for Europe. 2 rminology. 2 of tariff and 2 of workers. Ils of a man 2 ch Republic era of civil
Horse-drawn railw War II railways, railw 15Y1EH Versailles system, goals. Europe afte 15Y1FD France - geograp Frer 15Y1HD History of city mass cleara 15Y1HE Basic knowledge Creation and prote 15Y1HL Beginnings of flying World airports. Fa	History of Railway ways, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repulary development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connectivations. Excursions and projections. European Integration within Historical Context formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism. Lier Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and in New quality of French-German relationship - a driving power of starting European integration. French Area Studies and Transportation Prench Area Studies and Transportation Transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air traffich society and culture. Current political system. System of education, studying in France. Selected authors of French literature. French History of City Mass Transport s transport in the world, development of tram, bus and trolley-bus systems. History of transport networks in the world, current trends a ance systems. History of city transport in Prague and Brno. History of tram, bus and trolley-bus operation systems in the Czech Reput Work Hygiene and Ergonomics in Traffic of occupational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of these excition of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technology to perfect examples from the field of transportation; relevant legislature. History of Civil Aviation g, development of aircrafts lighter than air. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of aircrafts heavier than air. Czechoslovak aviation	KZ ublic", electric trace ons, railway lines on KZ ttle Entente, its press consequences. KZ fic, specialised tech gastronomy. KZ and developments olic and Slovakia. KZ factors on health obssibilities and ski	tion, World construction 2 inciples and for Europe. 2 rminology. 2 of tariff and 2 of workers. Ils of a man. 2 ch Republic. era of civil 2 ccussion on
Horse-drawn railw War II railways, railw 15Y1EH Versailles system, goals. Europe after 15Y1FD France - geograph Frent 15Y1HD History of city mass cleara 15Y1HE Basic knowledge Creation and prote 15Y1HL Beginnings of flying World airports. Fater 15Y1MK 15Y1NE Recent economic	History of Railway ways, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repulary development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connection railway accidents, railway junctions. Excursions and projections. European Integration within Historical Context formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism. Lier Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and in New quality of French-German relationship - a driving power of starting European integration. French Area Studies and Transportation Only and regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air traffich society and culture. Current political system. System of education, studying in France. Selected authors of French literature. French History of City Mass Transport In the world, development of tram, bus and trolley-bus systems. History of transport networks in the world, current trends a cance systems. History of city transport in Prague and Brrno. History of tram, bus and trolley-bus operation systems in the Czech Reput Work Hygiene and Ergonomics in Traffic of occupational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of these tection of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technology to perform the field of transportation; relevant legislature. History of Civil Aviation g, development of aircrafts lighter than air. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of aviation. Modern era of civil aviation. Airline companies. Supers	KZ ublic", electric trace ons, railway lines on KZ ttle Entente, its press consequences. KZ fic, specialised tech gastronomy. KZ and developments olic and Slovakia. KZ factors on health obssibilities and ski	tion, World construction 2 inciples and for Europe. 2 rminology. 2 of tariff and 2 construction 3 construction 4 construc
Horse-drawn railw War II railways, railw 15Y1EH Versailles system, goals. Europe afte 15Y1FD France - geograp Frer 15Y1HD History of city mass cleara 15Y1HE Basic knowledge Creation and prote 15Y1HL Beginnings of flying World airports. Fa 15Y1MK 15Y1NE Recent economic 15Y1ZV Historical prologue,	History of Railway ways, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repulary development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connection railway accidents, railway junctions. Excursions and projections. European Integration within Historical Context formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism. Lifer Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and it New quality of French-German relationship - a driving power of starting European integration. French Area Studies and Transportation Only and regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air traffich society and culture. Current political system. System of education, studying in France. Selected authors of French literature. French History of City Mass Transport In the world, development of tram, bus and trolley-bus systems. History of transport networks in the world, current trends a sance systems. History of city transport in Prague and Brno. History of tram, bus and trolley-bus operation systems in the Czech Reput Work Hygiene and Ergonomics in Traffic of occupational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of these tection of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technology to peractical examples from the field of transportation; relevant legislature. History of Civil Aviation g, development of aircrafts lighter than air. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of aviation. Airline companies. Supersonic flying	KZ ublic", electric trace ons, railway lines of KZ ttle Entente, its press consequences KZ fic, specialised tech gastronomy. KZ and developments olic and Slovakia. KZ factors on health obssibilities and skin KZ irrports in the Czer aviation. Golden KZ alysis of texts. Dis KZ ty of the internation	tion, World construction 2 inciples and for Europe. 2 rminology. 2 of tariff and 2 of workers. Ils of a man 2 ch Republic era of civil 2 coussion on
Horse-drawn railw War II railways, railw Var II railways, railw 15Y1EH Versailles system, goals. Europe afte 15Y1FD France - geograp Free 15Y1HD History of city mass cleara 15Y1HE Basic knowledge Creation and prote 15Y1HL Beginnings of flying World airports. Fa 15Y1MK 15Y1NE Recent economic 15Y1ZV Historical prologue,	History of Railway ways, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repulary development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connection railway accidents, railway junctions. Excursions and projections. European Integration within Historical Context formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism. Lier Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and in New quality of French-German relationship - a driving power of starting European integration. French Area Studies and Transportation only and regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air traffich society and culture. Current political system. System of education, studying in France. Selected authors of French literature. French society and culture. Current political systems. System of education, studying in France. Selected authors of French literature. French stransport in the world, development of tram, bus and trolley-bus systems. History of city transport in Prague and Brno. History of tram, bus and trolley-bus operation systems in the Czech Reput Work Hygiene and Ergonomics in Traffic of occupational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of these incition of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technology to peractical examples from the field of transportation; relevant legislature. History of Civil Aviation g, development of aircrafts lighter than air. Beginnings of aircrafts heavier than air. Czechoslovakia between the years 1945-1989. Classic era of aviation. Modern era of civil aviation. Airline companies. Supersonic flyi	KZ ublic", electric trace ons, railway lines of KZ ttle Entente, its press consequences KZ fic, specialised tech gastronomy. KZ and developments olic and Slovakia. KZ factors on health obssibilities and skin KZ irrports in the Czer aviation. Golden KZ alysis of texts. Dis KZ ty of the internation	tion, World construction 2 inciples and for Europe. 2 rminology. 2 of tariff and 2 of workers. Ils of a man 2 ch Republic era of civil 2 coussion on
Horse-drawn railw War II railways, railw Var II railways, railw 15Y1EH Versailles system, goals. Europe afte 15Y1FD France - geograp Free 15Y1HD History of city mass cleara 15Y1HE Basic knowledge Creation and prote 15Y1HL Beginnings of flying World airports. Fa 15Y1MK 15Y1NE Recent economic 15Y1ZV Historical prologue, in the end of 19th	History of Railway ways, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repway development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connection railway accidents, railway junctions. Excursions and projections. European Integration within Historical Context formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism. Lier Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and in New quality of French-German relationship - a driving power of starting European integration. French Area Studies and Transportation Only and regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air traffich society and culture. Current political system. System of education, studying in France. Selected authors of French literature. French Science and culture. Current political system. System of education, studying in France. Selected authors of French literature. French Science systems. History of city transport in Prague and Brno. History of tram, bus and trolley-bus operation systems in the Czech Reput Work Hygiene and Ergonomics in Traffic of occupational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of these exciton of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technology to perfect the practical examples from the field of transportation; relevant legislature. History of Civil Aviation g, development of aircrafts lighter than air. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of amous aviators. Helicopters. CSA airplanes. Development of aircrafts in Czechoslovak aviation pioneers. Development of amous aviators. Hel	KZ ublic", electric trace ons, railway lines of KZ ttle Entente, its press consequences KZ fic, specialised tech gastronomy. KZ and developments olic and Slovakia. KZ factors on health obssibilities and skin KZ factors in the Czer faviation. Golden KZ alysis of texts. Distance causes and consequences	tion, World construction 2 inciples and for Europe. 2 rminology. 2 of tariff and 2 of workers. Ils of a man. 2 ch Republic. era of civil 2 coussion on 2 conal relations sequences.
Horse-drawn railw War II railways, railw T5Y1EH Versailles system, goals. Europe afte 15Y1FD France - geograp Free T5Y1HD History of city mass cleara 15Y1HE Basic knowledge Creation and prote 15Y1HL Beginnings of flying World airports. Fa 15Y1NE Recent economic 15Y1ZV Historical prologue, in the end of 19th	History of Railway ways, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repulary development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connection railway accidents, railway junctions. Excursions and projections. European Integration within Historical Context formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism. Lifer Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and its reflicted in the Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and its reflicted in the Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and its erit Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and its erit Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWIII. Cold war and its erit Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWIII. Cold war and its sights, city public transportation. French Area Studies and Transportation. French Area Studies and Transportation. French Area Studies and Transport to Road traffic, motorways, railway traffic, TGV, air traffic, motorways, railway traffic, TGV, air traffic and society and culture. Current political system. System of education, studying in France. Selected authors of French literature. French History of city transport in Pransport to the world, current trends a success year. History of city transport in Prague and Bron. History of tram, bus and trolley-bus operation systems in the Czech Reput Work Hygiene and Ergonomics in Traffic of occupational hyg	KZ ublic", electric trace ons, railway lines on KZ ttle Entente, its preserved to gastronomy. KZ and developments olic and Slovakia. KZ factors on health obssibilities and skin KZ irrports in the Czer aviation. Golden KZ alysis of texts. Distance causes and conserved trace on the conserved to the internation of the causes and conserved trace on the conserved trace of the conserved tra	tion, World construction 2 inciples and for Europe. 2 rminology. 2 of tariff and 2 of workers. Ils of a man 2 ch Republic era of civil 2 cussion on 2 chall relations sequences.
Horse-drawn railw War II railways, railw 15Y1EH Versailles system, goals. Europe afte 15Y1FD France - geograp Free 15Y1HD History of city mass cleara 15Y1HE Basic knowledge Creation and prote 15Y1HL Beginnings of flying World airports. Fa 15Y1NE Recent economic 15Y1ZV Historical prologue, in the end of 19th	History of Railway ways, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repway development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connection railway accidents, railway junctions. Excursions and projections. European Integration within Historical Context formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism. Lier Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and it New quality of French-German relationship - a driving power of starting European integration. French Area Studies and Transportation only and regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air trainch society and culture. Current political system. System of education, studying in France. Selected authors of French literature. French History of City Mass Transport In the world, development of tram, bus and trolley-bus systems. History of transport networks in the world, current trends a nace systems. History of city transport and Ergonomics in Traffic of occupational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of these tection of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technology to potential to the standard of the standard programment of aircrafts lighter than air. Beginnings of aircrafts heavier than air. Czechoslovaki aviation pioneers. Development of aircrafts lead of transportation; relevant legislature. History of Civil Aviation g, development of aircrafts lighter than air. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of aviation. Modern era of civil aviation. Airline companies. Supersonic flying. M	KZ ublic", electric trace ons, railway lines on KZ ttle Entente, its preserved to gastronomy. KZ and developments olic and Slovakia. KZ factors on health of possibilities and skin kZ irrports in the Czer aviation. Golden KZ alysis of texts. Distance causes and conserved to kZ esign. Drive. Electric trace on the conserved to kZ esign. Drive. Electric trace on the conserved trace of the	tion, World construction 2 inciples and for Europe. 2 rminology. 2 of tariff and 2 of workers. Ils of a man 2 ch Republicera of civil 2 coussion on 2 chall relations sequences.
Horse-drawn railw War II railways, railw Var II railways, railw 15Y1EH Versailles system, goals. Europe afte 15Y1FD France - geograp Free 15Y1HD History of city mass cleara 15Y1HE Basic knowledge Creation and prote 15Y1HL Beginnings of flying World airports. Fa 15Y1NE Recent economic 15Y1ZV Historical prologue, in the end of 19th 16DPO Vehicle. Functions	History of Railway ways, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Rep way development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connecti railway accidents, railway junctions. Excursions and projections. European Integration within Historical Context formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism. Li er Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and it New quality of French-German relationship - a driving power of starting European integration. French Area Studies and Transportation by and regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air traf nch society and culture. Current political system. System of education, studying in France. Selected authors of French literature. French History of City Mass Transport s transport in the world, development of tram, bus and trolley-bus systems. History of transport networks in the world, current trends a sance systems. History of city transport networks in the world, current trends a sance systems. History of city transport networks in the world, current trends and services of cocupational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of these of occupational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of these oction of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technology to per Practical examples from the field of transportation; relevant legislature. History of Civil Aviation g, development of aircrafts lighter than air. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneer	KZ ublic", electric trace ons, railway lines on KZ ttle Entente, its preserved to gastronomy. KZ and developments olic and Slovakia. KZ factors on health obssibilities and skin kZ factors in the Czer aviation. Golden KZ alysis of texts. Distance causes and constance of kZ esign. Drive. Elect Safety.	tion, World construction 2 inciples and for Europe. 2 rminology. 2 of tariff and 2 of workers. Ils of a man. 2 ch Republic. era of civil 2 cussion on 2 chall relations sequences.
Horse-drawn railw War II railways, railw Var II railways, railw 15Y1EH Versailles system, goals. Europe afte 15Y1FD France - geograp Free 15Y1HD History of city mass cleara 15Y1HE Basic knowledge Creation and prote 15Y1HL Beginnings of flying World airports. Fa 15Y1NE Recent economic 15Y1ZV Historical prologue, in the end of 19th 16DPO Vehicle. Functions	History of Railway ways, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repway development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connection railway accidents, railway junctions. Excursions and projections. European Integration within Historical Context formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism. Lier Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and it New quality of French-German relationship - a driving power of starting European integration. French Area Studies and Transportation only and regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air trainch society and culture. Current political system. System of education, studying in France. Selected authors of French literature. French History of City Mass Transport In the world, development of tram, bus and trolley-bus systems. History of transport networks in the world, current trends a nace systems. History of city transport and Ergonomics in Traffic of occupational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of these tection of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technology to potential to the standard of the standard programment of aircrafts lighter than air. Beginnings of aircrafts heavier than air. Czechoslovaki aviation pioneers. Development of aircrafts lead of transportation; relevant legislature. History of Civil Aviation g, development of aircrafts lighter than air. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of aviation. Modern era of civil aviation. Airline companies. Supersonic flying. M	KZ ublic", electric trace ons, railway lines on KZ ttle Entente, its preserved to general section of the consequences of the consequences of the consequences of the gastronomy. KZ and developments oblic and Slovakia. KZ factors on health of the constitution of the constitution. Golden of the consequence of the con	tion, World construction 2 inciples and for Europe. 2 rminology. 2 of tariff and 2 of workers. Ills of a man 2 ch Republic era of civil 2 cussion on 2 tric traction.

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 drivi	ng inertial of the vehicles. Types of energy - kinetic, static, heat, chemical and others. Ways of energy change into kinetic energy	-	jine, electric
16V1IC	drive, steam engine, air engine. Energy accumulation means, accumulator, flywheel, fuel cell. Energy recuperation. WTW anal		
16Y1IS	Interactive simulators and simulations	KZ	2 mothods
	d application of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical more of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and intera		memous.
16Y1KS	Quality and Reliability of Vehicles	KZ	2
	heory in design, development, production and operation of vehicles. Definition and possible approach to quality and reliability. Ke		1
-	ysis), QFD (Quality Function Deployment), DFx (Design for Assamly, Manufacturying, Quality, Services) and other methods u		
	Knowledge-based systems of quality and reliability, data collection.		
16Y1PV	Operation, Construction and Maintenance of Vehicles	KZ	2
l l	fluction. Vehicle maintenance. Vehicle diagnostics. Maintenence and repair plans. Engine maintenance and emission measureme		1
	General principles of engine diagnostics.		
16Y1RE	Control and Electronic Vehicle Systems	KZ	2
	regulation. Tools for analytical solution, linear system description. Basic types of a regulator (PID), properties, advantages, disadva		1
and hybrid drive cont	rol. Electric drive. Vehicle communication bus (CAN, LIN, FlexRay, ISObus, KWP2000 protocole etc.). Vehicle electronic control,	safety, communic	ation and
	comfort systems.		
16Y1VT	Development in Railroad Vehicles	KZ	2
Railroad vehicles trac	tion. Railroad vehicle parametres regulation. Control and driving of railroad vehicles. Importance in heavy duty and personal tran	sportation. Critica	al situation
	assesment. New materials in design. International standardization.		
16Y1ZG	Introduction into Applied Computer Graphics	KZ	2
	sion and applications with emphasis on transport, including development and research. Colours, colour perception, colour sche		
and 3D generation, el	ementary algorithms for graphic data workout. Visualisation principles and tasks, technics, graphics and visualisation HW basics	s. Introduction to 2	2D and 3D
40)/471	graphics software.	1/7	
16Y1ZL	Vehicle Testing, Legislation and Construction	KZ	2
	ke costruction, aggregate computing, driving resistance, build and parameters of traction, constructional arrangement of personal c n in the EU and in the world, technical legislation creation, testing methods, vehicle tests, accelerated tests, mathematical mode		s, motorbike
17EDPO		Z,ZK	5
-	Economics of Transport Company ty, marginal costs, function of supply and demand, market equilibrium, perfect competition and types of market arrangement. Tra		_
· -	ivironment, balance sheet, costs, revenue, profit and maximalization of profit. Financial management in transport, business plan	•	-
17EMY	Management Science	Z	2
	onomical-mathematical models before its application in concrete technical and economical cases. The basic mathematical meth	-	
	sees of problems are formulated and different methods used in qualitatively distinct real situations are introduced. The tasks of in		
17FEU	Public Administration and Financing in Transport	Z,ZK	4
To get a basic overvie	w of the EU regional policy and its practical execution on the level of the member state, specific ability to find and analyze inform	nation about the E	U support
	programmes.		
17GEDS	Geography of Transport Systems	KZ	2
-	on of the transport system. Sociogeographic regionalization and its relation to transport. Transport and local and regional develo	•	
eoretical and methodol	ogical framework. Mobility research - travel behavior, mode choice and the influence onto "modal-split." Modal competition. Practica	I use of transport-	geographic
	analysis in transportation planning.		
17IVD	Integration of Public Transport	ZK	4
	policy, planning, contracts, funding, clearing of traffic receipts, tariff systems, traffic and carriage controls, legal conditions within	·	
17LGT	Logistics	Z,ZK	6
ogistics definition, bas	ic concepts, store, warehouse, transport and handling equipment, logistics technology, logistics centers, information and intellige	ent logistics syste	ms, logistic
47N4AC	City.	7 71/	
17MAS	Small and Medium Enterprise Small and medium enterprise - plans, market, analysis, finance, management, decision making, survival, growth.	Z,ZK	3
47145144		1/7	
17MEKA	Methods of Economics Analysis	KZ	2
ne techniques of econo	omical analysis in the domain of analysis of dependencies, analysis and construction of time series and comparsion of statistical indices.	values using diff	erencies an
17MRZ		Z	2
	Managerial Decision Making nto two main sections. The first section deals with individual-level processes that influence managers' decisions. The second sec		
ne course is divided if	is, group or organizational) forces that affect managers' decisions.	tion considers co	nective (tria
17PAZ	Carriage and Forwarding	Z	2
l I	and forwarding, waybills and documents; transport modes, multimodal transport, tariffs and prices in transport, rights and obligat		1
	forwarders, duty and tariff agreements, INCOTERMS, insurance in transport.		
17RAC	Rationalization and Quality of Transport	Z,ZK	7
l l	ortation funding, cost calculation, efficiency, transport rationalization, quality management, standards and quality standardization,	,	I
	transport and logistics, marketing and transport quality, quality costs, quality measurement and monitoring, statistics in quality m		-
-	on the customer.	•	-
17RPT	Project Management	Z,ZK	5
I	ect management, project management standards, organizational structures in the project management, projects in transport and		
	their specifics, feasibility study and CBA, project evaluation, PPP projects.		
470EID	Public Administration and Financing in Transport	Z,ZK	4
17SFID	r dono / diffinitionation and r marioning in manoport	-, `	

17TEDL	Transport Technology and Logistics	KZ	3
Basic terms in tran	sport technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and freight trans	sport, organisation	of traffic in
each transport m	odus, technologic factors of the side of operator and client, organisation of city transport, logistic technologies and their aplication usi	ng various transpo	ort modus.
17TGA Basic terms of	Graph Theory and its Applications in Transport graph theory, paths in graphs, flows in networks, location problems, design problems on graphs, optimum routing, use of graphs in o	Z,ZK ther scientific disc	4 iplines.
17TVD	Technology of Public Transport	Z,ZK	5
	ints a detailed description of new knowledge and basic principles of hierarchical planning of public transport system accenting the ge quantified transport demand. The course would be oriented on multiple and multi-level optimisation of passenger public transport	neral transport pla	
17X31	Project 1	Z	2
17X31	Project 2	Z	2
	•		
17X33	Project 3	Z	2
17Y1EV	Public Sector Economy	KZ	2
tax system of the C	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	om EU funds, progi	ram HDM-4.
	Logistics of Passenger and Freight Air Transport ssenger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial transair cargo. Information systems in air transport. Global distribution systems.		2 sengers and
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 at the application of marketing.	nd the resulting dif	fferences in
17Y10F	Personal Finance	KZ	2
	budget, financing of basic living needs), debt (loans and credits, payment instruments, interest and fees, debt trap), financing of hous		
consumer loans, re	financing), savings and investments (investment horizon, return, risk, investment strategy), insurance (insurance types, suitability and a (retirement savings and insurance).	adequacy), securir	ng the future
17Y1PM	Personnel Management	KZ	2
	ces, work group, man as personality, planning, choice, evaluation and education of human sources, work adaptation, teamwork, inter		l
17Y1SK	Urban and Regional Rail Transport Systems	KZ	2
	transport demand, modal-split, distribution of passenger flows on public regional transport lines. Optimization of line management, lines.		l
_	e timetable. Vehicle circulation creation. Optimizing driver shifts and arranging them in turnus. Effects of barrier-free and public transport	_	_
47)/401	marketing.	1/7	
17Y1SL	Sociology of Human Resources	KZ	2
numan resources a	and their importance, work group as a special kind of social group, communication, personal management, modern management, hum of the organization.	an resources piani	ning, culture
17Y1ST			
		V7	,
	Titan Simulation	KZ ct. Students set au	rice and
Titan is a manag	pement game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same produc	ct. Students set a	price and
Titan is a manag	l l	ct. Students set a	price and
Titan is a manag determine the quar	pement game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same production, plan budgets for marketing, research and development. They become familiar with the consequences of financial corporate reports and they use this information for other business decisions.	ct. Students set a positions	price and
Titan is a manag determine the quar	pement game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same productity and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequences	ct. Students set a position of their decisions	by the form
Titan is a manage determine the quares 18MTY Basic course of mares	pement game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same production and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequences of financial corporate reports and they use this information for other business decisions. Materials Science and Engineering	ct. Students set a part of their decisions Z,ZK re. However the market	by the form 3 ain attention
Titan is a manage determine the quares 18MTY Basic course of mares	pement game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same productive and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequences of financial corporate reports and they use this information for other business decisions. Materials Science and Engineering terials science and engineering explains mechanical properties of structural materials based on their bonding forces and microstructure.	ct. Students set a part of their decisions Z,ZK re. However the market	by the form 3 ain attention
Titan is a manage determine the quares 18MTY Basic course of mares	pement game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same productive and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequences of financial corporate reports and they use this information for other business decisions. Materials Science and Engineering terials science and engineering explains mechanical properties of structural materials based on their bonding forces and microstructures the most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and com-	ct. Students set a part of their decisions Z,ZK re. However the market	by the form 3 ain attention
Titan is a manage determine the quare 18MTY Basic course of mains paid to metals as	pement game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same productive and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequences of financial corporate reports and they use this information for other business decisions. Materials Science and Engineering terials science and engineering explains mechanical properties of structural materials based on their bonding forces and microstructures the most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and come to degradation processes in materials, to defectoscopy and to main mechanical tests. Elasticity and Strength ession. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolted as	ct. Students set a position of their decisions Z,ZK re. However the manaposites. Attention Z,ZK	by the form 3 ain attention is also paid
Titan is a manage determine the quare 18MTY Basic course of mains paid to metals as 18PZP Tension and compressions of the paid to metals as 18PZP	pement game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same productive and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequences of financial corporate reports and they use this information for other business decisions. Materials Science and Engineering terials science and engineering explains mechanical properties of structural materials based on their bonding forces and microstructure them the most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and come to degradation processes in materials, to defectoscopy and to main mechanical tests. Elasticity and Strength ession. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolted a Analysis of deflection curve of beams. Torsion of circular cross sections. Combined loading. Stability.	ct. Students set a position of their decisions Z,ZK re. However the management of the position of the positi	orice and by the form 3 ain attention is also paid 3 f structures.
Titan is a manage determine the quare 18MTY Basic course of mains paid to metals as 18PZP Tension and compression 18SAT	pement game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same productive and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequences of financial corporate reports and they use this information for other business decisions. Materials Science and Engineering terials science and engineering explains mechanical properties of structural materials based on their bonding forces and microstructure the most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and come to degradation processes in materials, to defectoscopy and to main mechanical tests. Elasticity and Strength ession. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolted a Analysis of deflection curve of beams. Torsion of circular cross sections. Combined loading. Stability. Structural Analysis	ct. Students set a part of their decisions Z,ZK re. However the management of the	orice and by the form 3 ain attention is also paid 3 f structures.
Titan is a manage determine the quare 18MTY Basic course of mains paid to metals as 18PZP Tension and compression and compression and compression and system of the second system	pement game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same productive and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequences of financial corporate reports and they use this information for other business decisions. Materials Science and Engineering terials science and engineering explains mechanical properties of structural materials based on their bonding forces and microstructure the most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and come to degradation processes in materials, to defectoscopy and to main mechanical tests. Elasticity and Strength ession. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolted a Analysis of deflection curve of beams. Torsion of circular cross sections. Combined loading. Stability. Structural Analysis of forces in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determinated.	ct. Students set a process of their decisions Z,ZK re. However the management of t	orice and by the form 3 ain attention is also paid 3 f structures. 4 le girders.
Titan is a manage determine the quare 18MTY Basic course of mains paid to metals as 18PZP Tension and compression and compression and compression and system of the second system	pement game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same productive and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequences of financial corporate reports and they use this information for other business decisions. Materials Science and Engineering terials science and engineering explains mechanical properties of structural materials based on their bonding forces and microstructure the most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and come to degradation processes in materials, to defectoscopy and to main mechanical tests. Elasticity and Strength ession. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolted a Analysis of deflection curve of beams. Torsion of circular cross sections. Combined loading. Stability. Structural Analysis of forces in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determinate work. Kinematic method for calculation of reactions of statically determinate systems. Determination of axial forces in truss constructions.	ct. Students set a process of their decisions Z,ZK re. However the management of t	orice and by the form 3 ain attention is also paid 3 f structures. 4 le girders.
Titan is a manage determine the quare 18MTY Basic course of mains paid to metals as 18PZP Tension and compression and compress	pement game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same productive and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequences of financial corporate reports and they use this information for other business decisions. Materials Science and Engineering terials science and engineering explains mechanical properties of structural materials based on their bonding forces and microstructures the most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and common to degradation processes in materials, to defectoscopy and to main mechanical tests. Elasticity and Strength ession. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolted a Analysis of deflection curve of beams. Torsion of circular cross sections. Combined loading. Stability. Structural Analysis of forces in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determinate systems. Determination of axial forces in truss constructions. Of planar shapes. Fiber polygons and chains.	ct. Students set a part of their decisions Z,ZK re. However the management of their decisions of th	orice and by the form 3 ain attention is also paid 3 f structures. 4 le girders. aracteristics
Titan is a manage determine the quare 18MTY Basic course of marking paid to metals as 18PZP Tension and compression and compre	pement game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same productive and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequences of financial corporate reports and they use this information for other business decisions. Materials Science and Engineering terials science and engineering explains mechanical properties of structural materials based on their bonding forces and microstructurs the most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and common to degradation processes in materials, to defectoscopy and to main mechanical tests. Elasticity and Strength ession. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolted a Analysis of deflection curve of beams. Torsion of circular cross sections. Combined loading. Stability. Structural Analysis of forces in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determinate vork. Kinematic method for calculation of reactions of statically determinate systems. Determination of axial forces in truss constructions. Of planar shapes. Fiber polygons and chains. Technical Documentation	ct. Students set a part of their decisions Z,ZK re. However the management of their decisions of th	orice and by the form 3 ain attention is also paid 3 f structures. 4 le girders. aracteristics
Titan is a manage determine the quare 18MTY Basic course of marking paid to metals as 18PZP Tension and compression and compre	pement game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same productive and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequences of financial corporate reports and they use this information for other business decisions. Materials Science and Engineering terials science and engineering explains mechanical properties of structural materials based on their bonding forces and microstructurs the most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and common to degradation processes in materials, to defectoscopy and to main mechanical tests. Elasticity and Strength ession. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolted a Analysis of deflection curve of beams. Torsion of circular cross sections. Combined loading. Stability. Structural Analysis of forces in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determinate vork. Kinematic method for calculation of reactions of statically determinate systems. Determination of axial forces in truss constructions. Of planar shapes. Fiber polygons and chains. Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional	ct. Students set a part of their decisions Z,ZK re. However the management of their decisions of th	orice and by the form 3 ain attention is also paid 3 f structures. 4 le girders. aracteristics
Titan is a manage determine the quare 18MTY Basic course of mains paid to metals as 18PZP Tension and compression and compression and compression and compression and system of Principle of virtual was 18TED Technical standard	pement game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same productive and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequences of financial corporate reports and they use this information for other business decisions. Materials Science and Engineering terials science and engineering explains mechanical properties of structural materials based on their bonding forces and microstructures the most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and come to degradation processes in materials, to defectoscopy and to main mechanical tests. Elasticity and Strength ession. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolted a Analysis of deflection curve of beams. Torsion of circular cross sections. Combined loading. Stability. Structural Analysis of forces in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determinate systems. Determination of axial forces in truss constructions. Of planar shapes. Fiber polygons and chains. Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional arrangement of drawing sheets.	ct. Students set a part of their decisions Z,ZK re. However the man oposites. Attention Z,ZK and welded joints of the part	orice and by the form 3 ain attention is also paid 3 f structures. 4 le girders. aracteristics 2 accuracy,
Titan is a manage determine the quare 18MTY Basic course of mains paid to metals as 18PZP Tension and compression and compression and compression and system of Principle of virtual was 18TED Technical standard 18X31	pement game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same productive and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequences of financial corporate reports and they use this information for other business decisions. Materials Science and Engineering terials science and engineering explains mechanical properties of structural materials based on their bonding forces and microstructures the most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and come to degradation processes in materials, to defectoscopy and to main mechanical tests. Elasticity and Strength ession. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolted and Analysis of deflection curve of beams. Torsion of circular cross sections. Combined loading. Stability. Structural Analysis of forces in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determinate vork. Kinematic method for calculation of reactions of statically determinate systems. Determination of axial forces in truss constructions. For planar shapes. Fiber polygons and chains. Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional arrangement of drawing sheets. Project 1	ct. Students set a part of their decisions Z,ZK re. However the man oposites. Attention Z,ZK and welded joints of the part	orice and by the form 3 ain attention is also paid 3 f structures. 4 le girders. aracteristics 2 accuracy,
Titan is a manage determine the quare 18MTY Basic course of mains paid to metals as 18PZP Tension and compression and compress	pement game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same productive and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequences of financial corporate reports and they use this information for other business decisions. Materials Science and Engineering terials science and engineering explains mechanical properties of structural materials based on their bonding forces and microstructures the most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and come to degradation processes in materials, to defectoscopy and to main mechanical tests. Elasticity and Strength ession. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolted and Analysis of deflection curve of beams. Torsion of circular cross sections. Combined loading. Stability. Structural Analysis of forces in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determinate systems. Determination of axial forces in truss constructions. Of planar shapes. Fiber polygons and chains. Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional arrangement of drawing sheets. Project 1 Project 2	ct. Students set a properties of their decisions Z,ZK re. However the management of the management o	3 ain attention is also paid 3 f structures. 4 le girders. aracteristics 2 accuracy, 2
Titan is a manage determine the quare 18MTY Basic course of mains paid to metals as 18PZP Tension and compression and compress	gement game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same productive and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequences of financial corporate reports and they use this information for other business decisions. Materials Science and Engineering terials science and engineering explains mechanical properties of structural materials based on their bonding forces and microstructures the most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and come to degradation processes in materials, to defectoscopy and to main mechanical tests. Elasticity and Strength ession. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolted and Analysis of deflection curve of beams. Torsion of circular cross sections. Combined loading. Stability. Structural Analysis of forces in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determinate ork. Kinematic method for calculation of reactions of statically determinate systems. Determination of axial forces in truss constructions. Of planar shapes. Fiber polygons and chains. Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional arrangement of drawing sheets. Project 1 Project 2 Project 3	ct. Students set a properties of their decisions Z,ZK The However the management of their decisions Z,ZK The However the management of	orice and by the form 3 ain attention is also paid 3 f structures. 4 le girders. aracteristics 2 accuracy, 2 2
Titan is a manage determine the quare 18MTY Basic course of mains paid to metals as 18PZP Tension and compression and compress	pement game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same productivity and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequences of financial corporate reports and they use this information for other business decisions. Materials Science and Engineering terials science and engineering explains mechanical properties of structural materials based on their bonding forces and microstructures the most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and come to degradation processes in materials, to defectoscopy and to main mechanical tests. Elasticity and Strength ession. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolted a Analysis of deflection curve of beams. Torsion of circular cross sections. Combined loading. Stability. Structural Analysis of forces in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determinate work. Kinematic method for calculation of reactions of statically determinate systems. Determination of axial forces in truss constructions of planar shapes. Fiber polygons and chains. Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional arrangement of drawing sheets. Project 1 Project 2 Project 3 Anatomy, Mobility and Safety of Man	ct. Students set a proof their decisions Z,ZK re. However the manaposites. Attention Z,ZK and welded joints of Z,ZK be beams and simple Cross-sectional ch KZ I and geometrical Z Z KZ	orice and by the form 3 ain attention is also paid 3 f structures. 4 le girders. aracteristics 2 accuracy, 2 2 2 2
Titan is a manage determine the quare 18MTY Basic course of mains paid to metals as 18PZP Tension and compression and compress	pement game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same productity and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequences of financial corporate reports and they use this information for other business decisions. Materials Science and Engineering terials science and engineering explains mechanical properties of structural materials based on their bonding forces and microstructures the most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and come to degradation processes in materials, to defectoscopy and to main mechanical tests. Elasticity and Strength ession. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolted a Analysis of deflection curve of beams. Torsion of circular cross sections. Combined loading. Stability. Structural Analysis of forces in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determinate vork. Kinematic method for calculation of reactions of statically determinate systems. Determination of axial forces in truss constructions of planar shapes. Fiber polygons and chains. Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional arrangement of drawing sheets. Project 1 Project 2 Project 3 Anatomy, Mobility and Safety of Man natomical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circulation of the control of t	ct. Students set a proof their decisions Z,ZK re. However the manaposites. Attention Z,ZK and welded joints of the beams and simple the cross-sectional characteristical the composites. Attention to the composite of the comp	aracteristics 2 accuracy, 2 2 2 m. Structure
Titan is a manage determine the quare 18MTY Basic course of mains paid to metals as 18PZP Tension and compression and compress	pement game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same productive and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequences of financial corporate reports and they use this information for other business decisions. Materials Science and Engineering terials science and engineering explains mechanical properties of structural materials based on their bonding forces and microstructure them to the most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and come to degradation processes in materials, to defectoscopy and to main mechanical tests. Elasticity and Strength ession. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolted a Analysis of deflection curve of beams. Torsion of circular cross sections. Combined loading. Stability. Structural Analysis of forces in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determinate vork. Kinematic method for calculation of reactions of statically determinate systems. Determination of axial forces in truss constructions, of planar shapes. Fiber polygons and chains. Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional arrangement of drawing sheets. Project 1 Project 2 Project 3 Anatomy, Mobility and Safety of Man natomical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circulation of muscular-skeletal system. Injury of human organs and musculo-skeletal system during traffic accidents. Mobility of ill and injured muscles.	ct. Students set a proof their decisions Z,ZK re. However the manaposites. Attention Z,ZK and welded joints of the beams and simple the cross-sectional characteristical the composites. Attention to the composite of the comp	aracteristics 2 accuracy, 2 2 2 m. Structure
Titan is a manage determine the quare 18MTY Basic course of mains paid to metals as 18PZP Tension and compression and compress	pement game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same productity and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequences of financial corporate reports and they use this information for other business decisions. Materials Science and Engineering terials science and engineering explains mechanical properties of structural materials based on their bonding forces and microstructures the most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and come to degradation processes in materials, to defectoscopy and to main mechanical tests. Elasticity and Strength ession. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolted a Analysis of deflection curve of beams. Torsion of circular cross sections. Combined loading. Stability. Structural Analysis of forces in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determinate work. Kinematic method for calculation of reactions of statically determinate systems. Determination of axial forces in truss constructions, of planar shapes. Fiber polygons and chains. Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional arrangement of drawing sheets. Project 1 Project 2 Project 3 Anatomy, Mobility and Safety of Man natomical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circulation of muscular-skeletal system. Injury of human organs and musculo-skeletal system during traffic accidents. Mobility of ill and injured meaning process. Protective means and traffic safety regulations.	ct. Students set a proof their decisions Z,ZK re. However the manaposites. Attention Z,ZK and welded joints of their decisions Z,ZK and welded joints of their decisions Experimental of their decisions of their decis	aracteristics 2 accuracy, 2 2 2 m. Structure
Titan is a manage determine the quare 18MTY Basic course of mains paid to metals as 18PZP Tension and compression and compress	pement game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same productive and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequences of financial corporate reports and they use this information for other business decisions. Materials Science and Engineering terials science and engineering explains mechanical properties of structural materials based on their bonding forces and microstructure them to the most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and come to degradation processes in materials, to defectoscopy and to main mechanical tests. Elasticity and Strength ession. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolted a Analysis of deflection curve of beams. Torsion of circular cross sections. Combined loading. Stability. Structural Analysis of forces in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determinate vork. Kinematic method for calculation of reactions of statically determinate systems. Determination of axial forces in truss constructions, of planar shapes. Fiber polygons and chains. Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional arrangement of drawing sheets. Project 1 Project 2 Project 3 Anatomy, Mobility and Safety of Man natomical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circulation of muscular-skeletal system. Injury of human organs and musculo-skeletal system during traffic accidents. Mobility of ill and injured muscles.	ct. Students set a proof their decisions Z,ZK re. However the manaposites. Attention Z,ZK and welded joints of the beams and simple the cross-sectional characteristics. Attention KZ I and geometrical Z Z KZ and nervous systeman and his treatm KZ	orice and by the form 3 ain attention is also paid 3 f structures. 4 le girders. aracteristics 2 accuracy, 2 2 2 m. Structure ent. Human
Titan is a manage determine the quare 18MTY Basic course of mains paid to metals as 18PZP Tension and compression and compress	pement game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same productive and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequences of financial corporate reports and they use this information for other business decisions. Materials Science and Engineering terials science and engineering explains mechanical properties of structural materials based on their bonding forces and microstructures the most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and come to degradation processes in materials, to defectoscopy and to main mechanical tests. Elasticity and Strength ession. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolted a Analysis of deflection curve of beams. Torsion of circular cross sections. Combined loading. Stability. Structural Analysis of forces in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determinate ork. Kinematic method for calculation of reactions of statically determinate systems. Determination of axial forces in truss constructions of planar shapes. Fiber polygons and chains. Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional arrangement of drawing sheets. Project 1 Project 2 Project 3 Anatomical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circulation of muscular-skeletal system. Injury of human organs and musculo-skeletal system during traffic accidents. Mobility of ill and injured meaning point prostheses. Protective means and traffic safety regulations. Experimental Methods in Mechanics	ct. Students set a proof their decisions Z,ZK re. However the manaposites. Attention Z,ZK and welded joints of their decisions Z,ZK and welded joints of their decisions Experimental of their decisions of their decis	orice and by the form 3 ain attention is also paid 3 f structures. 4 le girders. aracteristics 2 accuracy, 2 2 2 m. Structure ent. Human 2 s. Design of
Titan is a manage determine the quare 18MTY Basic course of mains paid to metals as 18PZP Tension and compression and compress	perment game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same productive, and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequences of financial corporate reports and they use this information for other business decisions. Materials Science and Engineering terials science and engineering explains mechanical properties of structural materials based on their bonding forces and microstructures the most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and come to degradation processes in materials, to defectoscopy and to main mechanical tests. Elasticity and Strength ession. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolted a Analysis of deflection curve of beams. Torsion of circular cross sections. Combined loading. Stability. Structural Analysis of forces in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determinate ork. Kinematic method for calculation of reactions of statically determinate systems. Determination of axial forces in truss constructions. of planar shapes. Fiber polygons and chains. Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional arrangement of drawing sheets. Project 1 Project 2 Project 3 Anatomy, Mobility and Safety of Man natomical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circulation of muscular-skeletal system. Injury of human organs and musculo-skeletal system during traffic accidents. Mobility of ill and injured mechanics in prostheses. Protective means and traffic safety regulations. Experimental Methods in Mechanics ole of experimental mechanics. Sensors for mechanical te	ct. Students set a proof their decisions Z,ZK re. However the manaposites. Attention Z,ZK and welded joints of their decisions Z,ZK and welded joints of their decisions Experimental of their decisions of their decis	orice and by the form 3 ain attention is also paid 3 f structures. 4 le girders. aracteristics 2 accuracy, 2 2 2 m. Structure ent. Human 2 s. Design of
Titan is a manage determine the quare 18MTY Basic course of mains paid to metals as 18PZP Tension and compression and compress	perment game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same productity and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequences of financial corporate reports and they use this information for other business decisions. Materials Science and Engineering terials science and engineering explains mechanical properties of structural materials based on their bonding forces and microstructures the most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and come to degradation processes in materials, to defectoscopy and to main mechanical tests. Elasticity and Strength ession. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolted an Analysis of deflection curve of beams. Torsion of circular cross sections. Combined loading. Stability. Structural Analysis of forces in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determinate systems. Determination of axial forces in truss constructions. Fiber polygons and chains. Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional arrangement of drawing sheets. Project 1 Project 2 Project 2 Project 2 Project 3 Anatomy, Mobility and Safety of Man natomical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circulation of muscular-skeletal system. Injury of human organs and musculo-skeletal system during traffic accidents. Mobility of ill and injured mechanics is possible to the properties of the protective means and traffic safety regulations. Experimental Methods in Mechanics ole of experimental mechanics. Sensors for mechanical testing. Overview of experimental methods. Destructive	ct. Students set a proof their decisions Z,ZK re. However the manaposites. Attention Z,ZK and welded joints of their decisions Z,ZK and welded joints of their decisions Experimental of their decisions of their decis	orice and by the form 3 ain attention is also paid 3 f structures. 4 le girders. aracteristics 2 accuracy, 2 2 2 m. Structure ent. Human 2 s. Design of
Titan is a manage determine the quare 18MTY Basic course of mains paid to metals as 18PZP Tension and compression and compress	perment game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same productity and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequences of financial corporate reports and they use this information for other business decisions. Materials Science and Engineering terials science and engineering explains mechanical properties of structural materials based on their bonding forces and microstructures the most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and come to degradation processes in materials, to defectoscopy and to main mechanical tests. Elasticity and Strength ession. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolted a Analysis of deflection curve of beams. Torsion of circular cross sections. Combined loading. Stability. Structural Analysis of forces in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determinate systems. Determination of axial forces in truss constructions. Of planar shapes. Fiber polygons and chains. Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional arrangement of drawing sheets. Project 1 Project 2 Project 2 Project 2 Project 3 Anatomy, Mobility and Safety of Man natomical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circulation of muscular-skeletal system. Injury of human organs and musculo-skeletal system during traffic accidents. Mobility of ill and injured mechanics of the prostheses. Protective means and traffic safety regulations. Experimental Methods in Mechanics ole of experimental mechanics. Sensors for mechanical testing. Overview of experimental methods. Destructive a	ct. Students set a proof their decisions Z,ZK re. However the manaposites. Attention Z,ZK and welded joints of their decisions Z,ZK a beams and simple the beams and simple their decisions KZ I and geometrical Z Z KZ and nervous systeman and his treatm KZ teesting of materials tigue and lifetime proof.	aracteristics 2 accuracy, 2 2 2 m. Structure ent. Human 2 s. Design of orediction.
Titan is a manage determine the quare 18MTY Basic course of mains paid to metals as 18PZP Tension and compression and compress	perment game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same productity and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequences of financial corporate reports and they use this information for other business decisions. Materials Science and Engineering terials science and engineering explains mechanical properties of structural materials based on their bonding forces and microstructures the most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and come to degradation processes in materials, to defectoscopy and to main mechanical tests. Elasticity and Strength ession. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolted a Analysis of deflection curve of beams. Torsion of circular cross sections. Combined loading. Stability. Structural Analysis of forces in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determinate systems. Determination of axial forces in truss constructions. of planar shapes. Fiber polygons and chains. Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional arrangement of drawing sheets. Project 1 Project 2 Project 3 Anatomy, Mobility and Safety of Man natomical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circulation of muscular-skeletal system. Injury of human organs and musculo-skeletal system during traffic accidents. Mobility of ill and injured methods in prostations. Sensors for mechanical testing. Overview of experimental methods. Destructive and non-destructive recovery and sample preparation. Tensile and bending tests. Electrical resistance strain gages. Optical based strain measu	ct. Students set a proof their decisions Z,ZK re. However the manaposites. Attention Z,ZK and welded joints of their decisions Z,ZK a beams and simple the cross-sectional characteristics. Z Z KZ and nervous system and his treatm KZ testing of materials tigue and lifetime processes attention.	aracteristics 2 accuracy, 2 2 2 m. Structure ent. Human 2 s. Design of orediction.
Titan is a manage determine the quare 18MTY Basic course of mains paid to metals as 18PZP Tension and compression of the second	perment game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same productitly and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequences of financial corporate reports and they use this information for other business decisions. Materials Science and Engineering Entials science and engineering explains mechanical properties of structural materials based on their bonding forces and microstructure is the most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and come to degradation processes in materials, to defectoscopy and to main mechanical tests. Elasticity and Strength ession. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolted a Analysis of deflection curve of beams. Torsion of circular cross sections. Combined loading. Stability. Structural Analysis Of forces in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determinate systems. Determination of axial forces in truss constructions. of planar shapes. Fiber polygons and chains. Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional arrangement of drawing sheets. Project 1 Project 2 Project 3 Anatomy, Mobility and Safety of Man natomical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circulation of muscular-skeletal system. Injury of human organs and musculo-skeletal system during traffic accidents. Mobility of ill and injured in joint prostheses. Protective means and traffic safety regulations. Experimental Methods in Mechanics ole of experimental mechanics. Sensors for mechanical testing. Overview of experimental methods. Destructive and non-destructive acdures	ct. Students set a proof their decisions Z,ZK re. However the manaposites. Attention Z,ZK and welded joints of their decisions Z,ZK a beams and simple the cross-sectional chatch in the cross-section chatch in the cross-section chatch in the cross-section chatch in the cross-section chatch in the cro	aracteristics 2 accuracy, 2 2 2 m. Structure ent. Human 2 s. Design of orediction. 2 tition is paid
Titan is a manage determine the quare 18MTY Basic course of mains paid to metals as 18PZP Tension and compression of the second	perment game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same productity and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequences of financial corporate reports and they use this information for other business decisions. Materials Science and Engineering terials science and engineering explains mechanical properties of structural materials based on their bonding forces and microstructur, the most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and come to degradation processes in materials, to defectoscopy and to main mechanical tests. Elasticity and Strength ession. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolted a Analysis of deflection curve of beams. Torsion of circular cross sections. Combined loading. Stability. Structural Analysis of forces in plane and space. Calculation of reactions of statically determinate systems. Determination of axial forces in truss constructions of planar shapes. Fiber polygons and chains. Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional arrangement of drawing sheets. Project 1 Project 1 Project 2 Project 3 Anatomy, Mobility and Safety of Man natomical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circulation of muscular-skeletal system. Injury of human organs and musculo-skeletal system during traffic accidents. Mobility of ill and injured m joint prostheses. Protective means and traffic safety regulations. Experimental Methods in Mechanics lest preparation. Tensile and bending tests. Electrical resistance strain gages. Optical based strain measurement. Far lastrumented hardness testing. Introduction to electron microscopy.	ct. Students set a proof their decisions Z,ZK re. However the manaposites. Attention Z,ZK re. Beams and simp Cross-sectional ch KZ I and geometrical Z Z Z KZ and nervous systeman and his treatm KZ resting of materials tigue and lifetime properties. KZ composites, atter selection charts. KZ nt and adaptation of	arice and by the form 3 ain attention is also paid 3 f structures. 4 le girders. aracteristics 2 accuracy, 2 2 2 2 m. Structure ent. Human 2 s. Design of orediction. 2 ation is paid 2 of geometry

18Y1UK	Introduction of Rail Vehicles	KZ	2
	ics and parameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion tra		٠ ا
track resistance. 10	tal running resistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehicle - and electric drive. Design concept rail vehicles and drive of wheel set.	nyaromecnanic, ny	arodynamic
20SYSA	Systems Analysis	Z,ZK	5
	em sciences, system viewpoint, terminology, typical system analysis tasks, system identification, system interface and interface tasks	,	
-	strong functions and processes, genetic code, system identity, system architecture. Tools for system analysis - Petri nets, decision tal		
	tasks. Soft and hard systems, methods for soft system analysis.		
20UITS	Introduction to Intelligent Transport Systems	Z,ZK	7
0,	gislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamentals of infor		
systems for ITS. Pr	inciples and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real examples	of possible applica	ations of the
20724	principles of ITS.	7	
20X31	Project 1	Z	2
20X32	Project 2	Z	2
20X33	Project 3	Z	2
20Y1AE	Applied Electronics semiconductor components, their principles, characteristics and typical connection diagrams. Semiconductor PN junction diodes, trar	KZ	2
	semiconductor components, their principles, characteristics and typical connection diagrams. Semiconductor PN junction diodes, transistr ogic gates. Functions of basic electronic circuits and methods for their designs (rectifiers, voltage regulator with Zener diode, transistr		
ampimoro, baolo k	amplifier as an inverting and noninverting amplifier).	n do an ampimor, c	porational
20Y1AF	Alternative Forms of Transportation Project Financing	KZ	2
	such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt paym		budget but
the final debtor is n	ot a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of sec	urities as an alterna	ative source
	of transportation and telecomunication projects.		
20Y1EA	Environmental Aspects of Transport	KZ	2
-	where, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilistic		
	n pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transp		change.
20Y1EK Practical experience	Qualification in Electrical Engineering us with measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock hazard,	KZ symbols and labeli	
	allowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legislati		
3 /	in relation to health and safety and electrical engineering.		
20Y1LN	Location and Navigation	KZ	2
Description and e	examples of road networks, localization on the network. Routing algorithms, their properties and implementation. Description and examples of road networks, localization on the network.	mples of datasets	for finding
	transport connections, routing algorithms, their properties and implementation.		
20Y10I	Fare Collection and Information Systems restems in public transport and their components (on-board units, validators, turnstiles,). Information systems and their components	KZ	2
=	nels) and operators (cycles, location or current delay of vehicles,). The issue of tariff systems. Other examples of clearance syst		es, maps,
20Y1OK	Road Lighting	KZ	2
	itities and terms, street lighting components (luminaires, control cabinets for street lighting, street lighting cables), characteristics of lumi		
light distribution),	standards, measurement of illuminance and luminance in road lighting, tunnels, conceptual approach to street lighting design, lighting	g calculations in D	IALux and
	Relux, street lighting control systems.		
20Y1PK	Product Quality Management Processes	KZ	2
	of organization management. Management systems and international standards; quality management systems. Quality products, pro		
oi stanuarus ioi sys	tems management, management principles. Principles of process management, monitoring and measurement systems management. Upper for systems management. Process management principles. Metrology and testing. Product certification.	millorin iramework (oi statiuatus
20Y1SC	Sensors and Actuators	KZ	2
	s and actuators. Basics of measuring theory and actuating influence. The respective technologies and construction principles. Sensors o		
	state (temperature, humidity), chemical and particle flow values. Electrical, pneumatic and hydraulic actuators and solid phase el		
21X31	Project 1	Z	2
21X32	Project 2	Z	2
21X33	Project 3	Z	2
21Y1AM	Aeronautical Information Management (AIM)	KZ	2
	c overview of AIS and AIM. Transition from AIS to AIM. Regulatory base. Provision of AIS/AIM in the Czech Rep. AIP (Aeronautical Ir	-	
the Czech Rep. A	IRAC System. NOTAM messages.PIB (Pre-flight Informtion Bulletin). AIC (Aeoronautical Inf. Circulars). Aeronautical Charts. EAD (Eu	ropena AIS Databa	ase). QMS
24V4BC	(Quality Mng. System). ADQ (Aeronautical Data Quality). AIXM (Aeronautical Inf. Exchnage Format).	V7	
21Y1BC	Aviation safety and security f safety and security development in aviation. Modern tools for safety and security management. Research and development of safe	KZ	2
21Y1BS	Unmanned aircraft systems 1	KZ	2
	n Development. Aircraft design. Legislation in force in the Czech Republic. Planning and execution of the flight. Airspace division. Op-		
Unmanned Aviatio	procedures. Practical flights.		'
Onmanned Aviatio			
21Y1MP	Matlab for project-oriented study	KZ	2
21Y1MP The subject's sylla	bus is focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exercises	will be prepared a	ccording to
21Y1MP The subject's sylla particular examp	bus is focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exercises les, based on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improvement	will be prepared a nt of students' Mat	ccording to lab skills.
21Y1MP The subject's sylla particular examp 21Y1RZ	bus is focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exercises les, based on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improvement Human Resources Management	will be prepared a nt of students' Mat	ccording to lab skills.
21Y1MP The subject's sylla particular examp 21Y1RZ The position of l	bus is focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exercises les, based on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improvement Human Resources Management numan resources in the organization and related disciplines file. Substance, importance and challenges of human resources management	will be prepared a nt of students' Mat KZ ment. Internal and	ccording to lab skills. 2 external
21Y1MP The subject's sylla particular examp 21Y1RZ The position of l	bus is focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exercises les, based on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improvement Human Resources Management numan resources in the organization and related disciplines file. Substance, importance and challenges of human resources management. Human resource planning. Search, recruitment and selection of employees. Motivation, evaluation and rer	will be prepared a nt of students' Mat KZ ment. Internal and	ccording to lab skills. 2 external
21Y1MP The subject's sylla particular examp 21Y1RZ The position of lenvironment of hun	bus is focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exercises les, based on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improvement Human Resources Management human resources in the organization and related disciplines file. Substance, importance and challenges of human resources management. Human resource planning. Search, recruitment and selection of employees. Motivation, evaluation and rerudismissal and redundancies of employees. Education of employees. Planning career management.	will be prepared a ant of students' Mat KZ ment. Internal and nuneration of staff.	ccording to lab skills. 2 external Positioning,
21Y1MP The subject's sylla particular examp 21Y1RZ The position of lenvironment of hun	bus is focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exercises les, based on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improvement Human Resources Management numan resources in the organization and related disciplines file. Substance, importance and challenges of human resources management. Human resource planning. Search, recruitment and selection of employees. Motivation, evaluation and rer	will be prepared a ant of students' Mat KZ ment. Internal and nuneration of staff.	ccording to lab skills. 2 external Positioning,

21ZALD	Basics of Air Transport	KZ	2
• .	ology, basic rules. VFR/IFR. Basics of aerodynamics. Propulsion of aircraft. Aircraft design. Basics of navigation, radio navigation	•	•
Flight planning, optimization	on of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic management, gro	ound handling, sec	urity. Air crew.
	Airlines and economics. Space technologies.		
22X31	Project 1	Z	2
22X32	Project 2	Z	2
22X33	Project 3	Z	2
22Y1SZ	Forensic Expertise	KZ	2
Historical evolution of fore	ensic engineering, forensic activity, current legislature in the Czech Republic, different disciplines, notion of forensic, forensic	legislation, basic f	orensic acts,
expert role in the obtaining	ng proofs, forensic methodology. Notion of the evidence, general principles of evidence obtaining, metrology, protocol, eviden	nces collection, site	e inspection,
	forensic report, elements. Finding, expert testimony / report.		
23DPSP	Traffic Law and Related Regulations	Z	1
Analysis of selected lav	ws in transportation domain (e. g. Road Act, Road Transport Act, Civil Aviation Act, Railways Act, Inland Navigation Act), sele	ected EU transport	legislation.
23X31	Project 1	Z	2
23X32	Project 2	Z	2
23X33	Project 3	Z	2
23Y1DZ	Data and Their Processing for Engineering Fields Needs	KZ	2
23Y1DZ	Data and Their Processing for Engineering Fields Needs ms. data collection, data sets, data random uncertainty and data enistemic uncertainty, data processing, hazard, risk, value a	1	_
	ms, data collection, data sets, data random uncertainty and data epistemic uncertainty, data processing, hazard, risk, value	scales, analytical, e	_
Courses of risk, basic terr	ms, data collection, data sets, data random uncertainty and data epistemic uncertainty, data processing, hazard, risk, value heuristic methods, hazard determination and risk determination, methods for variants' creation, decision support system	scales, analytical, e	_
Courses of risk, basic terr	ms, data collection, data sets, data random uncertainty and data epistemic uncertainty, data processing, hazard, risk, value	scales, analytical, ens.	empirical and
Courses of risk, basic term 23Y1KM Theory and legal frame of	ms, data collection, data sets, data random uncertainty and data epistemic uncertainty, data processing, hazard, risk, value heuristic methods, hazard determination and risk determination, methods for variants' creation, decision support system Crisis Management	scales, analytical, ons. KZ e on: theory and po	empirical and 2 sition of crisis
Courses of risk, basic term 23Y1KM Theory and legal frame of	ms, data collection, data sets, data random uncertainty and data epistemic uncertainty, data processing, hazard, risk, value sheuristic methods, hazard determination and risk determination, methods for variants' creation, decision support system Crisis Management Crisis Management crisis management with direction to Rescue system (IZS). After introduction to safety domain, there are terms and knowledge	scales, analytical, ons. KZ e on: theory and po	empirical and 2 sition of crisis
Courses of risk, basic term 23Y1KM Theory and legal frame of management 23Y1KO	ms, data collection, data sets, data random uncertainty and data epistemic uncertainty, data processing, hazard, risk, value the heuristic methods, hazard determination and risk determination, methods for variants' creation, decision support system Crisis Management Crisis Management crisis management with direction to Rescue system (IZS). After introduction to safety domain, there are terms and knowledge tand its targets; IZS-crisis management-crisis planning; and basic legislation. Practical part is concentrated to responsibility	kzales, analytical, eas. KZ e on: theory and pomatrix compilation KZ	empirical and 2 sition of crisis
Courses of risk, basic term 23Y1KM Theory and legal frame of management 23Y1KO	ms, data collection, data sets, data random uncertainty and data epistemic uncertainty, data processing, hazard, risk, value heuristic methods, hazard determination and risk determination, methods for variants' creation, decision support system Crisis Management crisis management with direction to Rescue system (IZS). After introduction to safety domain, there are terms and knowledge t and its targets; IZS-crisis management-crisis planning; and basic legislation. Practical part is concentrated to responsibility Quantum Physics and Optoelectronics Ground of quantum physics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics compared	kzales, analytical, eas. KZ e on: theory and pomatrix compilation KZ	empirical and 2 sition of crisis
Courses of risk, basic term 23Y1KM Theory and legal frame of management 23Y1KO 23Y1OK	ms, data collection, data sets, data random uncertainty and data epistemic uncertainty, data processing, hazard, risk, value the heuristic methods, hazard determination and risk determination, methods for variants' creation, decision support system Crisis Management Crisis Management crisis management with direction to Rescue system (IZS). After introduction to safety domain, there are terms and knowledge than distangets; IZS-crisis management-crisis planning; and basic legislation. Practical part is concentrated to responsibility Quantum Physics and Optoelectronics	scales, analytical, ens. KZ e on: theory and pomatrix compilation KZ onents. KZ	2 sition of crisis 2
Courses of risk, basic term 23Y1KM Theory and legal frame of management 23Y1KO 23Y1OK	ms, data collection, data sets, data random uncertainty and data epistemic uncertainty, data processing, hazard, risk, value heuristic methods, hazard determination and risk determination, methods for variants' creation, decision support system Crisis Management crisis management with direction to Rescue system (IZS). After introduction to safety domain, there are terms and knowledge t and its targets; IZS-crisis management-crisis planning; and basic legislation. Practical part is concentrated to responsibility Quantum Physics and Optoelectronics Ground of quantum physics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics components and Infrastructures	scales, analytical, ens. KZ e on: theory and pomatrix compilation KZ onents. KZ	2 sition of crisis 2
Courses of risk, basic term 23Y1KM Theory and legal frame of management 23Y1KO 23Y1OK	ms, data collection, data sets, data random uncertainty and data epistemic uncertainty, data processing, hazard, risk, value heuristic methods, hazard determination and risk determination, methods for variants' creation, decision support system Crisis Management crisis management with direction to Rescue system (IZS). After introduction to safety domain, there are terms and knowledge t and its targets; IZS-crisis management-crisis planning; and basic legislation. Practical part is concentrated to responsibility Quantum Physics and Optoelectronics Ground of quantum physics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics composite protection of Critical Objects and Infrastructures stems, critical item, risks and their courses, criticality, vulnerability, connectivity, dependability, resilience, failure, protection, sa infrastructures.	scales, analytical, ens. KZ e on: theory and pomatrix compilation KZ onents. KZ	2 sition of crisis .
Courses of risk, basic term 23Y1KM Theory and legal frame of management 23Y1KO 23Y1OK Types of technological sys	ms, data collection, data sets, data random uncertainty and data epistemic uncertainty, data processing, hazard, risk, value heuristic methods, hazard determination and risk determination, methods for variants' creation, decision support system Crisis Management crisis management with direction to Rescue system (IZS). After introduction to safety domain, there are terms and knowledge t and its targets; IZS-crisis management-crisis planning; and basic legislation. Practical part is concentrated to responsibility Quantum Physics and Optoelectronics Ground of quantum physics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics composite protection of Critical Objects and Infrastructures stems, critical item, risks and their courses, criticality, vulnerability, connectivity, dependability, resilience, failure, protection, sa	KZ e on: theory and po matrix compilation KZ conents. KZ cot theory and po matrix compilation KZ cot KZ cot KZ fety of critical object KZ	2 sition of crisis 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
Courses of risk, basic term 23Y1KM Theory and legal frame of management 23Y1KO 23Y1KO 23Y1OK Types of technological systems of technolo	ms, data collection, data sets, data random uncertainty and data epistemic uncertainty, data processing, hazard, risk, value heuristic methods, hazard determination and risk determination, methods for variants' creation, decision support system Crisis Management crisis management with direction to Rescue system (IZS). After introduction to safety domain, there are terms and knowledge t and its targets; IZS-crisis management-crisis planning; and basic legislation. Practical part is concentrated to responsibility Quantum Physics and Optoelectronics Ground of quantum physics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics composite protection of Critical Objects and Infrastructures Stems, critical item, risks and their courses, criticality, vulnerability, connectivity, dependability, resilience, failure, protection, sa infrastructures. Negotiation and Cooperation	scales, analytical, ens. KZ e on: theory and pomatrix compilation KZ onents. KZ fety of critical object KZ mal and formal role	2 sition of crisis 2 2 2 2 2 2 2 2 2 in the team.
Courses of risk, basic term 23Y1KM Theory and legal frame of management 23Y1KO 23Y1KO 23Y1OK Types of technological systems of technolo	ms, data collection, data sets, data random uncertainty and data epistemic uncertainty, data processing, hazard, risk, value heuristic methods, hazard determination and risk determination, methods for variants' creation, decision support system Crisis Management crisis management with direction to Rescue system (IZS). After introduction to safety domain, there are terms and knowledge t and its targets; IZS-crisis management-crisis planning; and basic legislation. Practical part is concentrated to responsibility Quantum Physics and Optoelectronics Ground of quantum physics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics composite protection of Critical Objects and Infrastructures Stems, critical item, risks and their courses, criticality, vulnerability, connectivity, dependability, resilience, failure, protection, sa infrastructures. Negotiation and Cooperation station. The influence of personality traits on the negotiations. Negotiation and commanding. Teamwork. Variants teams. Infor	scales, analytical, ens. KZ e on: theory and pomatrix compilation KZ onents. KZ fety of critical object KZ mal and formal role	2 sition of crisis 2 2 2 2 2 2 a in the team.
Courses of risk, basic term 23Y1KM Theory and legal frame of management 23Y1KO 23Y1KO 23Y1OK Types of technological systems 23Y1VS Code of conduct for negotians	ms, data collection, data sets, data random uncertainty and data epistemic uncertainty, data processing, hazard, risk, value heuristic methods, hazard determination and risk determination, methods for variants' creation, decision support system Crisis Management crisis Management crisis management with direction to Rescue system (IZS). After introduction to safety domain, there are terms and knowledge t and its targets; IZS-crisis management-crisis planning; and basic legislation. Practical part is concentrated to responsibility Quantum Physics and Optoelectronics Ground of quantum physics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics composite terms, critical item, risks and their courses, criticality, vulnerability, connectivity, dependability, resilience, failure, protection, sa infrastructures. Negotiation and Cooperation tiation. The influence of personality traits on the negotiations. Negotiation and commanding. Teamwork. Variants teams. Inforthe essence of negotiation, the differences in negotiation in business and in crisis situations, the principle of "win both", speci	scales, analytical, ens. KZ e on: theory and pomatrix compilation KZ onents. KZ fety of critical object KZ mal and formal role	2 sition of crisis 2 2 2 2 2 2 a in the team.
Courses of risk, basic term 23Y1KM Theory and legal frame of management 23Y1KO 23Y1KO 23Y1OK Types of technological sys 23Y1VS Code of conduct for negotile principles of negotiation, to the conduct for the conduct	ms, data collection, data sets, data random uncertainty and data epistemic uncertainty, data processing, hazard, risk, value heuristic methods, hazard determination and risk determination, methods for variants' creation, decision support system Crisis Management crisis Management crisis management with direction to Rescue system (IZS). After introduction to safety domain, there are terms and knowledge t and its targets; IZS-crisis management-crisis planning; and basic legislation. Practical part is concentrated to responsibility Quantum Physics and Optoelectronics Ground of quantum physics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics composite terms, critical item, risks and their courses, criticality, vulnerability, connectivity, dependability, resilience, failure, protection, sa infrastructures. Negotiation and Cooperation tiation. The influence of personality traits on the negotiations. Negotiation and commanding. Teamwork. Variants teams. Inforthe essence of negotiation, the differences in negotiation in business and in crisis situations, the principle of "win both", specitrust.	scales, analytical, on s. KZ e on: theory and po matrix compilation KZ onents. KZ fety of critical object KZ mal and formal role fications and biddin	2 sition of crisis 2 2 ts and critical 2 e in the team. ng, the role of
Courses of risk, basic term 23Y1KM Theory and legal frame of management 23Y1KO 23Y1KO 23Y1OK Types of technological system of technological syst	ms, data collection, data sets, data random uncertainty and data epistemic uncertainty, data processing, hazard, risk, value heuristic methods, hazard determination and risk determination, methods for variants' creation, decision support system Crisis Management crisis Management crisis management with direction to Rescue system (IZS). After introduction to safety domain, there are terms and knowledge t and its targets; IZS-crisis management-crisis planning; and basic legislation. Practical part is concentrated to responsibility Quantum Physics and Optoelectronics Ground of quantum physics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics composite protection of Critical Objects and Infrastructures Stems, critical item, risks and their courses, criticality, vulnerability, connectivity, dependability, resilience, failure, protection, sa infrastructures. Negotiation and Cooperation Itation. The influence of personality traits on the negotiations. Negotiation and commanding. Teamwork. Variants teams. Inforthe essence of negotiation, the differences in negotiation in business and in crisis situations, the principle of "win both", specitrust. Basics of Law	scales, analytical, on s. KZ e on: theory and po matrix compilation KZ onents. KZ fety of critical object KZ mal and formal role fications and biddin Z olic, legal system a	2 sition of crisis. 2 2 2 2 2 a in the team. ng, the role of 2 nd in various
Courses of risk, basic term 23Y1KM Theory and legal frame of management 23Y1KO 23Y1KO 23Y1OK Types of technological system of technological syst	ms, data collection, data sets, data random uncertainty and data epistemic uncertainty, data processing, hazard, risk, value heuristic methods, hazard determination and risk determination, methods for variants' creation, decision support system Crisis Management crisis Management crisis management with direction to Rescue system (IZS). After introduction to safety domain, there are terms and knowledge t and its targets; IZS-crisis management-crisis planning; and basic legislation. Practical part is concentrated to responsibility Quantum Physics and Optoelectronics Ground of quantum physics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics composite terms, critical item, risks and their courses, criticality, vulnerability, connectivity, dependability, resilience, failure, protection, sa infrastructures. Negotiation and Cooperation tiation. The influence of personality traits on the negotiations. Negotiation and commanding. Teamwork. Variants teams. Inforthe essence of negotiation, the differences in negotiation in business and in crisis situations, the principle of "win both", specitrust. Basics of Law Exech legal system. The course is primarily intended to provide students with orientation in fundamentals of the Czech Reput	scales, analytical, on s. KZ e on: theory and po matrix compilation KZ onents. KZ fety of critical object KZ mal and formal role fications and biddin Z olic, legal system a	2 sition of crisis. 2 2 2 2 2 a in the team. ng, the role of 2 nd in various
Courses of risk, basic term 23Y1KM Theory and legal frame of management 23Y1KO 23Y1KO 23Y1OK Types of technological system of technological	ms, data collection, data sets, data random uncertainty and data epistemic uncertainty, data processing, hazard, risk, value heuristic methods, hazard determination and risk determination, methods for variants' creation, decision support system Crisis Management Crisis Management Crisis management with direction to Rescue system (IZS). After introduction to safety domain, there are terms and knowledge t and its targets; IZS-crisis management-crisis planning; and basic legislation. Practical part is concentrated to responsibility Quantum Physics and Optoelectronics Ground of quantum physics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics composite com	scales, analytical, on s. KZ e on: theory and po matrix compilation KZ onents. KZ fety of critical object KZ mal and formal role fications and biddin Z olic, legal system a	2 sition of crisis 2 2 cts and critical 2 e in the team. ng, the role of 2 nd in various

For updated information see http://bilakniha.cvut.cz/en/FF.html Generated: day 2024-05-18, time 15:40.