Study plan

Name of study plan: Bachelor TET-DOS Full-Time from 2024/25

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: 158

The role of the block: Z

Code of the group: 1S-BP-TET-20/21

Name of the group: 1st Sem. Bachelor Full-Time TET from 2020/21

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:

vote on the gi	ioup.					
Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11CAL1	Calculus 1 Olga Vraštilová, Tomáš Tasák, Magdalena Hykšová, Bohumil Ková, Ond ej Navrátil Bohumil Ková Ond ej Navrátil (Gar.)	Z,ZK	7	2P+4C+22B	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 Zuzana arská, Dagmar Ko árková, Jan Kruntorád	Z,ZK	2	1P+1C	Z	Z
18MTY	Materials Science and Engineering Jaromír Kylar, Veronika Drechslerová, Jaromír Kylar, Nela Kr má ová, Jitka ezní ková, Jaroslav Valach, Vít Malinovský, Veronika Drechslerová, Jaromír Kylar 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 Tomáš Brandejský, Michal Je ábek, Alena Kubá ová, Jan Procházka, Vít Fábera, Martin Fiala Vít Fábera Vít Fábera (Gar.)	KZ	3	0P+2C+8B	Z	Z
14KSP	Constructing with Computer Aid Vit Fábera, Radek Kratochvíl Lukáš Svoboda	KZ	2	0P+2C+8B	Z	Z
18TED	Technical Documentation Jitka ezní ková, Vít Malinovský Jitka ezní ková 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=1S-BP-TET-20/21 Name=1st Sem. Bachelor Full-Time TET from 2020/21

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. Indefinite integral, Newton in	tegral, Riemann ir	ntegral, improper
Riemann integral. First-	order differential equations, linear differential equations.		

11LA Linear Algebra Z,ZK 3
Vector spaces (linear combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and their solvability. Determinants and

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

	Introduction to Transportation Engineering	Z,ZK	2
Role of transport	tation in land-use planning. Basic terms in transportation engineering. Traffic survey and traffic prognosis. Introduction to topic of	roads, public mass trai	nsport. Negative
impacts of transp	portation to environment and safety.		
18MTY	Materials Science and Engineering	Z,ZK	3
Basic course of n	materials science and engineering explains mechanical properties of structural materials based on their bonding forces and mic	rostructure. 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 composites. Atten	tion is also paid
to degradation pr	rocesses in materials, to defectoscopy and to main mechanical tests.		
11GIE	Geometry	KZ	3
Differential geom	netry of curves - parameterization, the arc of the curve, torsion and curvature, Frenet`s trihedron. Kinematics - a curve as a traj	ectory of the motion, th	e velocity, and
acceleration of a	particle moving on a curved path.		
14ASD	Algorithm and Data Structures	KZ	3
Students will ana	alyze problems, design a theoretical solution to a given problem and write the resulting algorithm using flowcharts, practice read	ling algorithms written u	using flowcharts,
and use basic Bo	oolean algebra to construct constraints in algorithms. Students will be introduced to the basics of the Python programming lang	guage - variable, branch	ning, loops, they
will learn to work	with variables of basic data types (integer, floating point and string) and the list data structure in their programs.		
14KSP	Constructing with Computer Aid	KZ	_
14N3F	Constructing with Computer Aid	NZ	2
_	erm determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic com	1 1	_
"CAD systems" to		mon work rules in grap	hic applications
"CAD systems" to and CA systems.	erm determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic com	mon work rules in grap	hic applications
"CAD systems" to and CA systems.	term determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic com . Co-ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting	mon work rules in grap	hic applications
"CAD systems" to and CA systems. profiles, drawings 18TED	term determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic com . Co-ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting s with raster foundaments).	mon work rules in graph possibilites, AutoCAD	hic applications environment
"CAD systems" to and CA systems. profiles, drawings 18TED	term determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic combined. Co-ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting swith raster foundaments). Technical Documentation ards, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional standardization, technical drawings.	mon work rules in graph possibilites, AutoCAD	hic applications environment
"CAD systems" to and CA systems. profiles, drawings 18TED Technical standa	term determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic combined. Co-ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting swith raster foundaments). Technical Documentation ards, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimedrawing sheets.	mon work rules in graph possibilites, AutoCAD	hic applications environment
"CAD systems" to and CA systems. profiles, drawings 18TED Technical standa arrangement of d	term determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic combined. Co-ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting swith raster foundaments). Technical Documentation ards, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional standardization, technical drawings.	mon work rules in graph possibilites, AutoCAD KZ ensional and geometrica	hic applications environment 2 al accuracy,
"CAD systems" to and CA systems. profiles, drawings 18TED Technical standa arrangement of d 15DPLG Subject of psycho	term determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic com a Co-ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting swith raster foundaments). Technical Documentation ards, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimedrawing sheets. Transportation Psychology	mon work rules in graph possibilites, AutoCAD KZ ensional and geometrical Z icle construction. Psych	hic applications environment 2 al accuracy,
"CAD systems" to and CA systems. profiles, drawings 18TED Technical standa arrangement of d 15DPLG Subject of psycho	term determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic come. Co-ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting swith raster foundaments). Technical Documentation ards, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimedrawing sheets. Transportation Psychology ology and its basic concepts. Information intake, decision-making and behaviour. Performance. Engineering psychology and vehicles.	mon work rules in graph possibilites, AutoCAD KZ ensional and geometrical Z icle construction. Psych	hic applications environment 2 al accuracy,
"CAD systems" to and CA systems. profiles, drawings 18TED Technical standa arrangement of d 15DPLG Subject of psycho of travel route an 16UDOP	term determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic com. Co-ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting swith raster foundaments). Technical Documentation ards, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimedrawing sheets. Transportation Psychology ology and its basic concepts. Information intake, decision-making and behaviour. Performance. Engineering psychology and vehicle traffic conditions, accidents and traffic incidents. Selection and training of the staff. Work and leisure. Age as a factor in trans	mon work rules in graph possibilites, AutoCAD KZ ensional and geometrical Z icle construction. Psychoport operation.	hic applications environment 2 al accuracy, 2 ological aspects
"CAD systems" to and CA systems. profiles, drawings 18TED Technical standa arrangement of d 15DPLG Subject of psychological forms of travel route an 16UDOP Vehicles and transport of travel route and travel rout	term determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic com. Co-ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting swith raster foundaments). Technical Documentation ards, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimedrawing sheets. Transportation Psychology ology and its basic concepts. Information intake, decision-making and behaviour. Performance. Engineering psychology and vehicle traffic conditions, accidents and traffic incidents. Selection and training of the staff. Work and leisure. Age as a factor in trans	mon work rules in graph possibilites, AutoCAD KZ ensional and geometrical Z icle construction. Psychoport operation.	hic applications environment 2 al accuracy, 2 ological aspects
"CAD systems" to and CA systems. profiles, drawings 18TED Technical standa arrangement of d 15DPLG Subject of psychological forms of travel route an 16UDOP Vehicles and transport of travel route and travel rout	term determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic com. Co-ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting swith raster foundaments). Technical Documentation ards, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimedrawing sheets. Transportation Psychology ology and its basic concepts. Information intake, decision-making and behaviour. Performance. Engineering psychology and vehicle traffic conditions, accidents and traffic incidents. Selection and training of the staff. Work and leisure. Age as a factor in transportation systems. Functionality and setup. Movement and drive principles. Engines and their characteristics. Rail, road, air and setup. Introduction into Vehicles in the characteristics of the staff. Work and their characteristics. Rail, road, air and their characteristics. Rail, road, air and their characteristics.	mon work rules in graph possibilites, AutoCAD KZ ensional and geometrical Z icle construction. Psychoport operation.	hic applications environment 2 al accuracy, 2 ological aspects

Code of the group: 2S-BP-TET-20/21

Name of the group: 2nd Sem. Bachelor Full-Time TET from 2020/21

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	Name of the course / Name of the group of courses			1		
Code	(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 Magdalena Hykšová Ond ej Navrátil (Gar.)	Z,ZK	5	2P+3C+20B	L	Z
11STAT	Statistics Pavel Provinský, Evženie Uglickich, Pavla Pecherková, Michal Matowicki, Natálie Blahitka, Ivan Nagy, Jana Kuklová Pavla Pecherková Evženie Uglickich (Gar.)	Z,ZK	4	2P+2C+12B	L	Z
12ZTS	Railway Lines and Stations Lukáš Týfa, Martin Jacura, Petr Šatra, Tomáš Javo ík, Ond ej Trešl Lukáš Týfa (Gar.)	Z,ZK	4	2P+2C+10B	L	Z
18SAT	Structural Analysis Jaromír Kylar, Veronika Drechslerová, Nela Kr má ová, Jitka ezní ková, Daniel Kytý, Jan Vy ichl, Tomáš Doktor, Jan Falta, Jan Šleichrt Daniel Kytý (Gar.)	Z,ZK	4	2P+2C+14B	L	Z
20SYSA	Systems Analysis Zuzana B linová, Ji í R ži ka, Patrik Horaž ovský, Petr Bureš Zuzana B linová (Gar.)	Z,ZK	5	2P+2C+14B	L	Z
14PRG	Programming Alena Kubá ová, Jan Procházka, Martin Fiala, Jana Kaliková, Jan Kr ál, Lukáš Svoboda Jana Kaliková Jana Kaliková (Gar.)	KZ	2	0P+2C+8B	L	Z
17TEDL	Transport Technology and Logistics Vít Janoš, Michal Drábek, Zden k Michl, Rudolf Vávra, Stanislav Metelka 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, Sébastien Lán, Bo Stloukal	KZ	2	0P+2C+8B	L	Z
TV-2	Physical Education	Z	1		L	Z

Characteristics of the courses of this group of Study Plan: Code=2S-BP-TET-20/21 Name=2nd Sem. Bachelor Full-Time TET from 2020/21

11CAL2	Calculus 2	Z,ZK	5
Linear differential equat	ions and their systems, differential calculus of functions of several real variables. Riemann integral in Rn. Line and surface in	tograle	•

11STAT	Statistics	Z,ZK	4
Basics of probability	Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Para	metric tests Nonpar	ametric tests
Regression and corr	elation analysis		
12ZTS	Railway Lines and Stations	Z,ZK	4
Rail transport. Railwa	ay track geometry parameters. Route layout of railway lines. Railway line construction - railway substructure and superstructure	. Spatial layout of ra	ailway lines.
Railway control syste	ems in relation to infrastructure. Operating and carriage points. Railway lines net and category. Traction in rail transport.		
18SAT	Structural Analysis	Z,ZK	4
General system of fo	rces in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determin	ate beams and sim	ple girders.
Principle of virtual wo	rk. Kinematic method for calculation of reactions of statically determinate systems. Determination of axial forces in truss constructi	ons. Cross-sectiona	l characteristics
of planar shapes. Fit	er polygons and chains.		
20SYSA	Systems Analysis	Z,ZK	5
Introduction to system	n sciences, system viewpoint, terminology, typical system analysis tasks, system identification, system interface and interface t	asks, processes, sy	stem behaviour
and its analysis, stro	ng functions and processes, genetic code, system identity, system architecture. Tools for system analysis - Petri nets, decision	tables, algorithms f	or structural
tasks. Soft and hard	systems, methods for soft system analysis.		
14PRG	Programming	KZ	2
The Course Program	ıming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python prog	ramming language	is expanded
here so that the part	cipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and s	earching, tuples, se	ets, dictionaries,
working with date an	d time, regular expressions, functions and procedures, working with files (CSV, JSON, XML).		
17TEDL	Transport Technology and Logistics	KZ	3
Basic terms in transp	oort technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and freight	transport, organisa	tion of traffic in
each transport modu	s, technologic factors of the side of operator and client, organisation of city transport, logistic technologies and their aplication	using various trans	port modus.
21ZALD	Basics of Air Transport	KZ	2
History, definitions, te	rminology, basic rules. VFR/IFR. Basics of aerodynamics. Propulsion of aircraft. Aircraft design. Basics of navigation, radio naviga	tion. Weight, balanc	e, performance.
	nization of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic management,	ground handling, se	ecurity. Air crew.
Flight planning, optin		•	
	ics. Space technologies.		
		Z	1

Code of the group: 3S-BP-TET-24/25

Name of the group: 3rd Sem. Bachelor Full-Time TET from 2024/25

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:

Note on the 9	•	,				
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, Jana Kuklová, Pavel Demo, Zuzana Malá, Tomáš Vít Jana Kuklová Pavel Demo (Gar.)	Z,ZK	5	2P+2C+18E	Z	Z
12MDE	Transport Models and Transport Excesses Josef Kocourek, Tomáš Pad lek	Z,ZK	3	2P+1C+8E	Z	Z
11TGA	Graph Theory and its Applications in Transport Denisa Mocková, Dušan Teichmann Denisa Mocková Denisa Mocková (Gar.)	Z,ZK	4	2P+2C+12E	Z	Z
18PZP	Elasticity and Strength Jitka ezní ková, Daniel Kytý, Jan Vy ichl, Tomáš Doktor, Jan Šleichrt, Josef Jíra, Ond ej Jiroušek Ond ej Jiroušek Ond ej Jiroušek (Gar.)	Z,ZK	3	2P+1C+10E	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 Martin Langr	Z,ZK	7	3P+2C+20E	Z	Z
12PPOK	Designing Roads, Highways and Motorways Josef Kocourek, Tomáš Pad lek, Polina Zayats, Petr Kumpošt Josef Kocourek (Gar.)	KZ	3	1P+2C+10E	Z	Z
14DATS	Database Systems Jana Kaliková, Jan Kr ál Jana Kaliková Jana Kaliková (Gar.)	KZ	2	1P+1C+10E	Z	Z
15JZ1A	Foreign Language - English 1 Eva Rezlerová, Markéta Vojanová, Dana Boušová, Marie Michlová, Marek Tome ek, Jan Feit, Markéta Musilová, Peter Morpuss, Lenka Monková,	Z	3	0P+4C+10E	Z	Z

11FYZ	Physics	Z,ZK	5
Kinematics, dynar	mics, Newton's laws, force fields, mechanics of continuum, thermodynamics, introduction to electrostatics and e	electric current.	
12MDE	Transport Models and Transport Excesses	Z,ZK	3
raneport and ite a	assassment. Statistical characteristics of transport. Transport excesses, their analysis, the causes, identify and r	minimize the consequences Improving	aves. Quality of
	assessment. Statistical characteristics of transport. Transport excesses, their analysis, the causes, identify and r	minimize the consequences. Improving	
safety and fluency	у.		
safety and fluency	Graph Theory and its Applications in Transport	Z,ZK	g of transport
safety and fluency	у.	Z,ZK	g of transport
safety and fluency 11TGA Basic terms of gra	Graph Theory and its Applications in Transport	Z,ZK	g of transport
safety and fluency 11TGA Basic terms of gra 18PZP	y. Graph Theory and its Applications in Transport aph theory, paths in graphs, flows in networks, location problems, design problems on graphs, optimum routing,	use of graphs in other scientific discip	g of transport 4 olines. 3

20UITS	Introduction to Intelligent Transport Systems	Z,ZK	7				
Terminology and legislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamentals of information and telecommunication							
systems for ITS. Principles and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real examples of possible applications of the							
principles of ITS.							
12PPOK	12PPOK Designing Roads, Highways and Motorways KZ 3						
Definition, types, owner	ship, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standa	ard speed. Route	in rural areas.				
Range of vision for stop	ping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. S	afety device. Cros	ssings, junctions,				
intersections.							
14DATS	Database Systems	KZ	2				
Basic concepts of database systems, conceptual model, relational data model, the principles of normal forms, relational database design, security and integrity of data, database							
queries, relational algebra, SQL language, client / server, multilayer architectures, distributed database systems. Access to data via the WWW.							
15JZ1A	Foreign Language - English 1	Z	3				
Grammatical Structures	and Style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and	communicative s	kills Elementary				

Code of the group: 4S-BP-DOS-22/23

Name of the group: 4th Sem. Bachelor Full-Time TET-DOS from 2022/23 Requirement credits in the group: In this group you have to gain 16 credits

Requirement courses in the group: In this group you have to complete 4 courses

stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles of rhetoric.

Credits in the group: 16 Note on the group:

11010 011 1110	g					
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 Bohumil Ková Bohumil Ková (Gar.)	Z,ZK	4	2P+2C+12B	L	Z
16DOKY	Vehicle Technology Josef Mík, P emysl Toman, Josef Svoboda Josef Mík (Gar.)	Z,ZK	5	2P+2C	L	Z
18KIDY	Kinematics and Dynamics Jitka ezní ková, Tomáš Fíla, Petr Zlámal Tomáš Fíla (Gar.)	Z,ZK	4	2P+2C	L	Z
15JZ2A	Foreign Language - English 2 Eva Rezlerová, Markéta Vojanová, Marie Michlová, Marek Tome ek, Jan Feit, Markéta Musilová, Peter Morrouss, Lenka Monková, Jitka He manová	Z,ZK	3	0P+4C+10B	L	Z

Characteristics of the courses of this group of Study Plan: Code=4S-BP-DOS-22/23 Name=4th Sem. Bachelor Full-Time TET-DOS from 2022/23

11MSP	Modeling of Systems and Processes	Z,ZK	4			
System and subsystem	n, external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of di	fferential and differ	rential equations.			
Linear and nonlinear s	ystem, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer functic	n. Stability of LTI:	systems.			
Discretization of continuous systems. System interconnection.						
16DOKY	Vehicle Technology	Z,ZK	5			
Technical nomenclature in transportation technology. Vehicle in legislation. Design. Operation. Influence on environment. Vehicle and ecology. Traction engine characteristics -						
combustion engines, e	electric engines, change of energy principles. Powertrain construction. Power transmission. Brake systems.					
18KIDY	Kinematics and Dynamics	Z,ZK	4			
Friction. Motion along	a line and a curve. Kinematics of rigid body. Kinematics of the point mass and the system of mass points. Dynamics of a mass	point and a systen	n of mass points			
equation of motion. Me	ethod of Newton. D'Alembert principle. Free and forced vibration with one degree of freedom. Viscous damping. Impact theory.	Introduction to th	e solution of			
vibration with two deg	ees of freedom.					
15JZ2A	Foreign Language - English 2	Z,ZK	3			
Grammatical structure	s and style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and	d communicative s	kills. Elementary			
stylistics forms Oral a	nd written presentation of original research. Academic text principles and reading comprehension. Principles of thetoric					

Code of the group: 4S-BP-DOS-V1-22/23

Name of the group: 4th Sem. Bachelor Full-Time TET-DOS 1st alternative subject from 2022/23

Requirement credits in the group: In this group you have to gain 4 credits

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

Credits in the group: 4 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
11EMOP	Electromagnetic Field and Optics Old ich Hykš, Jana Kuklová, Zuzana Malá, Tomáš Vít Tomáš Vít Pavel Demo (Gar.)	Z,ZK	4	2P+2C	L	Z
12SDK	Highways, Motorways and Intersections Josef Kocourek, Tomáš Pad lek, Petr Kumpošt Tomáš Pad lek (Gar.)	Z,ZK	4	2P+2C	L	Z

Characteristics of the courses of this group of Study Plan: Code=4S-BP-DOS-V1-22/23 Name=4th Sem. Bachelor Full-Time TET-DOS 1st alternative subject from 2022/23

	.,,					
11EMOP	Electromagnetic Field and Optics	Z,ZK	4			
Electric field. Electric co	Electric field. Electric current. Magnetic field. Electromagnetic field. Optics. Basics of solid-state physics.					
12SDK	Highways, Motorways and Intersections	Z,ZK	4			
Roads and motorways i	etwork, transport output. Types of direction curves. Hairpin bend. Stopping sight distance and overtaking sight distance. Levels	of traffic service.	Design elements			
of crossroads and inter	of crossroads and intersections. Crossroads. Roundabouts. Intersections. Special types of junctions. Capacity of crossroads and intersections. Structure of pavement of roads and					
motorways. Road engir	neering structures. Assessment of route alternatives.					

Code of the group: 4S-BP-DOS-V2-22/23

Name of the group: 4th Sem. Bachelor Full-Time TET-DOS 2nd alternative subject from 2022/23

Requirement credits in the group: In this group you have to gain 3 credits

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

Credits in the group: 3 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
11MDSD	Collecting and Processing of Traffic Data Michal Matowicki, Ond ej P ibyl Ond ej P ibyl Ond ej P ibyl (Gar.)	KZ	3	2P+0C	L	Z
12PUSS	Organization Disposition of Railway Stations Martin Jacura Martin Jacura (Gar.)	KZ	3	2P+0C	L	Z

Characteristics of the courses of this group of Study Plan: Code=4S-BP-DOS-V2-22/23 Name=4th Sem. Bachelor Full-Time TET-DOS 2nd alternative subject from 2022/23

11MDSD	Collecting and Processing of Traffic Data	KZ	3				
Basic principles of traffi	Basic principles of traffic detection and data collection, specific problems of the field of traffic data. Data preprocessing and analysis for use in additional applications.						
12PUSS	Organization Disposition of Railway Stations	KZ	3				
Connecting station. Pas	Connecting station. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zone stations. Formation yards.						
Reserve stations. Techn	ology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic railway r	network.					

Code of the group: 4S-BP-DOS-V3-22/23

Name of the group: 4th Sem. Bachelor Full-Time TET-DOS 3rd alternative subject from 2022/23

Requirement credits in the group: In this group you have to gain 3 credits

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

Credits in the group: 3 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	
14PODP	Computer Aid of Transportation Projecting Drahomír Schmidt Drahomír Schmidt (Gar.)	KZ	3	0P+2C	L	Z	
18MECK	Mechanics of Constructions Petr Koudelka Petr Koudelka (Gar.)	KZ	3	2P+0C	L	Z	

Characteristics of the courses of this group of Study Plan: Code=4S-BP-DOS-V3-22/23 Name=4th Sem. Bachelor Full-Time TET-DOS 3rd alternative subject from 2022/23

ord alternative Su	bject from 2022/23							
14PODP	Computer Aid of Transportation Projecting	KZ	3					
Overview of CAx applic	Overview of CAx application for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, data exchange). Advanced blocks							
modification (attributes,	relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic trans	sition curve, cross	-and longitudinal					
section). Basics of 3D r	nodelling.							
18MECK	Mechanics of Constructions	KZ	3					
Energetic solution of ela	stic beam. Solution of statically indeterminate systems - force and deformation method. Stiffness and compliance matrix of a	system. Finite di	ference method.					
History and fundamenta	als of structural design. Characteristics of steel, design of steel structures. Introduction to mathematical theory of elasticity in	3D.						

Code of the group: 5S-BP-DOS-23/24

Name of the group: 5th Sem. Bachelor Full-Time TET-DOS from 2023/24 Requirement credits in the group: In this group you have to gain 10 credits

Requirement courses in the group: In this group you have to complete 2 courses

Credits in the group: 10 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
12ZELP	Railway Operation Jan Kruntorád, Martin Jacura, Tomáš Javo ík	Z,ZK	4	2P+2C	Z	Z
22DON	Traffic Accidents Tomáš Blodek, Tomáš Kohout, Michal Frydrýn, Tomáš Mi unek Tomáš Mi unek Tomáš Mi unek (Gar.)	Z,ZK	6	3P+2C	Z	Z

Characteristics of the courses of this group of Study Plan: Code=5S-BP-DOS-23/24 Name=5th Sem. Bachelor Full-Time TET-DOS from 2023/24

'	12ZELP	Railway Operation	Z,ZK	4
l	egislation in railway tra	nsport. Railway vehicles. Railway signals and signal devices. Railway traffic organisation and operation. Simplified railway tra	affic operation. Ra	ilway vehicles

Legislation in railway transport. Railway venicles. Railway signais and signal devices. Railway traffic organisation and operation. Simplified railway traffic operation. Railway venicles brakes. Railway vehicles marking. Operation intervals. Theoretical graph of train running.

22DON Traffic Accidents

Introduction to Road Accidents and Forensic Expertise; Rail, Water and Air Accidents; Road Accident Documentation and Documentation Technology; Accident Data Recorders - EDR Systems; Road Accident Trace Analysis and Fake Accidents; Simulation Programmes for Road Accident Analysis; Pedestrian and Cyclist Accidents; Vehicle technologies and systems and autonomous vehicles; Safe road layout and collision diagrams; Not giving right of way; Technical defects of vehicles; Restraints - passive road safety; Accidents at level crossings; Prevention (traffic education, awareness, repression)

Code of the group: 5S-BP-DOS-V1-23/24

Name of the group: 5th Sem. Bachelor Full-Time TET-DOS 1st alternative subject from 2023/24

Requirement credits in the group: In this group you have to gain 3 credits

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

Credits in the group: 3 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
12DOSI	Traffic Surveys and Simulations Petr Kumpošt	Z,ZK	3	1P+2C	Z	Z
18DYKS	Dynamics of Structures and Systems Ond ej Jiroušek, Tomáš Fíla, Stanislav Hra ov Stanislav Hra ov (Gar.) Hra ov (Gar.)	Z,ZK	3	2P+1C	Z	Z

Characteristics of the courses of this group of Study Plan: Code=5S-BP-DOS-V1-23/24 Name=5th Sem. Bachelor Full-Time TET-DOS 1st alternative subject from 2023/24

12DOSI	Traffic Surveys and Simulations	Z,ZK	3
Ways of data collection	in road transport. Traffic surveys. Automatic traffic counting. Preparation and implementation of traffic survey. Description of ir	ndividual approac	hes focused on
practical examples from	real measurements. Methods of data processing and evaluation. Principles of simulation, SW environment for creating traffic	c models. Traffic n	nodel design
procedure, calibration. F	Processing of a simple transport model based on real data.		

18DYKS Dynamics of Structures and Systems Z,ZK 3

Vibration of systems with multiple degrees of freedom. Natural modes and natural frequencies. Method of stiffness constants, method of elastic constants, other numerical methods. Systems with continuously distributed mass. Matrix form of equations of vibration. Finite element method in dynamics of structures. Solving vibrations by superposition of natural modes Subspace iteration methods. Introduction to nonlinear vibrations.

Code of the group: 5S-BP-DOS-V2-23/24

Name of the group: 5th Sem. Bachelor Full-Time TET-DOS 2nd alternative subject from 2023/24

Requirement credits in the group: In this group you have to gain 5 credits

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

Credits in the group: 5

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
12MKOD	City Rail Transport Ond ej Trešl	Z,ZK	5	2P+1C	Z	Z
16DYJV	Vehicle Dynamics Josef Mík, P emysl Toman, Josef Svoboda	Z,ZK	5	2P+1C	Z	Z

Characteristics of the courses of this group of Study Plan: Code=5S-BP-DOS-V2-23/24 Name=5th Sem. Bachelor Full-Time TET-DOS 2nd alternative subject from 2023/24

12MKOD	City Rail Transport	Z,ZK	5	
City and suburban rail t	ansport. Tram lines layout and city roads. Tram track geometry parameters. Tram track superstructure. Turnouts and other co	nstruction of tram	lines. Tram	
stops and turn space. Ur	nderground and its basic characteristics. Underground nets in the world and undeground history in Prague. Underground track g	eometry paramet	ers. Underground	
trook ouporatruotura an	A substructure. Underground stations. Suburban rail transport			

16DYJV Vehicle Dynamics

Application of mechanics. Wheel and axle suspension mechanism. Wheel to road positioning characteristics. Wheel - road contact. Skid and its characteristics. Longitudinal dynamics, acceleration and deceleration. Vertical dynamics, spring suspension, driving characteristics. Directional dynamics, gyroscopical characteristics. Driving stability conditions. Aerodynamic forces. Driving and feedback. ABS, ESP.

Code of the group: 5S-BP-DOS-V3-23/24

Name of the group: 5th Sem. Bachelor Full-Time TET-DOS 3rd alternative subject from 2023/24

Requirement credits in the group: In this group you have to gain 3 credits

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

Credits in the group: 3 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
12POSD	Assessment of Transport Structures Martin Höfler, Kristýna Neubergová Martin Höfler (Gar.)	KZ	3	2P+0C	Z	Z
18NUMM	Numerical Methods in Mechanics Ond ej Jiroušek, Radek Kolman Radek Kolman Radek Kolman (Gar.)	KZ	3	2P+0C	Z	Z

Characteristics of the courses of this group of Study Plan: Code=5S-BP-DOS-V3-23/24 Name=5th Sem. Bachelor Full-Time TET-DOS 3rd alternative subject from 2023/24

12POSD Assessment of Transport Structures ΚZ

EIA process - historical context, impact and variants, analysis of individual phases of EIA process, SEA, legislative framework in the Czech Republic, EU directives, implementation of EU directives, public participation, process in practice. Methods of assessing the effects of transport structures on the environment. SWOT analysis. Multicriteria methods for assessment of transport structures, TUKP method. Risk analysis. Landscape

18NUMM Numerical Methods in Mechanics

Basics of the most used numerical methods in structural mechanics. Central difference method, finite element method, boundary element method. Time and spatial discretization schemes. Finite element method - derivation of the basic equations. Stiffness matrix, mass matrix, damping matrix at element level and structural level. Methods for solving systems of algebraic equations. Numerical integration.

Code of the group: 6S-BP-DOS-23/24

Name of the group: 6th Sem. Bachelor Full-Time TET-DOS from 2023/24

Requirement credits in the group: In this group you have to gain 14 credits

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

Credits in the group: 14

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
12PRMK	Urban Road Traffic and Design Josef Kocourek, Tomáš Pad lek, Petr Kumpošt Josef Kocourek (Gar.)	Z,ZK	5	2P+2C	L	Z
12VHD	Public Transport Jan Kruntorád, Martin Jareš, Petr Chmela Martin Jareš (Gar.)	Z,ZK	5	3P+2C	L	Z
22METD	Measurement Methods and Technology in Transportation Drahomír Schmidt, Michal Frydrýn, Luboš Nouzovský, Zden k Svatý Luboš Nouzovský Drahomír Schmidt (Gar.)	ZK	4	2P+2C	L	Z

Characteristics of the courses of this group of Study Plan: Code=6S-BP-DOS-23/24 Name=6th Sem. Bachelor Full-Time TET-DOS from 2023/24

12PRMK	Urban Road Traffic and Design	Z,ZK	5						
Composition of urban	Composition of urban road, elements and routes for traffic, pedestrian and cycling transport, projection of intersections, traffic lights and its traffic safety proposal, roundabouts, calm								
of traffic, precaution f	or blind & amp; partially-sighted, parking, traffic area, induction of traffic, organization and regulation of transport.								
12VHD	Public Transport	Z,ZK	5						
conceptions, operation	Importance of public transport Z,ZK 5 Importance of public transport, transport research, evaluation, planning of lines routes and territory operation, planning of operation parameters, preparation of operation, network conceptions, operation-technology and operation-economically conditions of planning of operation conceptions, planning of operation conception, planing and realisation of timetables, prepare of infrastrukture (route, stops), preference of public transport, financing.								
22METD	Measurement Methods and Technology in Transportation	ZK	4						
Moscuroment method	pagurament methods in transport, their meaning and use Goodetic basics in Czechia. Angular length and height measurements. Principles of manning accuracy and errors of								

geodetic measurements. Surveying and setting out. Challenges of localization, navigation and Global Navigation Satellite Systems. Laser scanning (terrestrial, mobile, UAV). Technical

Code of the group: 6S-BP-DOS-V1-23/24

photography and photogrammetry. Dynamic measurements of vehicles. High-speed cameras.

Name of the group: 6th Sem. Bachelor Full-Time TET-DOS 1st alternative subject from 2023/24

Requirement credits in the group: In this group you have to gain 4 credits

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

Credits in the group: 4 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
16PAV	Passive Safety Zuzana Radová, Josef Mík Josef Mík (Gar.)	Z,ZK	4	2P+1C	L	Z
17FID	Financing and Investment in Transport Olga Mertlová, Alexandra Dvo á ková Olga Mertlová (Gar.)	Z,ZK	4	2P+1C+12B	L	Z

Characteristics of the courses of this group of Study Plan: Code=6S-BP-DOS-V1-23/24 Name=6th Sem. Bachelor Full-Time TET-DOS 1st alternative subject from 2023/24

| 16PAV | Passive Safety | Z,ZK | 4 | Road accident evaluation. Testing and legislation. Crash tests. Carbody properties. Injury mechanics. Restrain systems. Airbags. Road user safety. Mathematic modelling. Post collision safety systems.

| 17FID | Financing and Investment in Transport | Z,ZK | 4 | Sources of financing of transport infrastructure, the role of public administration in the financing and realization of investment in transport, the investment project project cycle, subsidy programs and their rules, competition, effectiveness and efficiency of spending public funds, evaluation systems of public projects and programs.

Code of the group: 6S-BP-DOS-V2-23/24

Name of the group: 6th Sem. Bachelor Full-Time TET-DOS 2nd alternative subject from 2023/24

Requirement credits in the group: In this group you have to gain 3 credits

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

Credits in the group: 3 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
12ZAR	Introduction to Architectural Design Karel Hájek	Z	3	2P+0C+8B	L	Z
14ZDA	Data Processing Martin Šrotý, Miroslav Vaniš Martin Šrotý Martin Šrotý (Gar.)	Z	3	0P+2C	L	Z

Characteristics of the courses of this group of Study Plan: Code=6S-BP-DOS-V2-23/24 Name=6th Sem. Bachelor Full-Time TET-DOS 2nd alternative subject from 2023/24

12ZAR	Introduction to Architectural Design	Z	3					
Jrbanism and architecture of traffic systems. Bus and trolley-bus transport. Tramway and town tracks. Design of vehicles. Subway. Railway transport. Railway stations. Local								
communications. International airports.								
14ZDA Data Processing Z 3								
14ZDA	Data Processing	Z	3					
	Data Processing cessing and analysis tools. Practical part of the training - introduction to the working environment, applied examples of data processing and analysis tools.	Z rocessing from pra	3 actice, advanced					

Name of the block: Semestrální projekt Minimal number of credits of the block: 8

The role of the block: ZP

Code of the group: X1-BP-DOS-22/23

Name of the group: Research Groups Bachelor Full-Time TET-DOS from 2022/23

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

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

Credits in the group: 8 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11X31D	Project 1 DOS Jan Pikryl Jan Pikryl Jan Pikryl (Gar.)	Z	2	0P+2C	L	ZP
12X31D	Project 1 DOS Zuzana arská, Dagmar Ko árková, Jan Kruntorád, Lukáš Týfa, Martin Jacura, Tomáš Javo ík, Ond ej Trešl, Pavel Purkart, Josef Kocourek,	Z	2	0P+2C	L	ZP
14X31D	Project 1 DOS	Z	2	0P+2C	L	ZP
15X31D	Project 1 DOS	Z	2	0P+2C	L	ZP

16X31D	Project 1 DOS Josef Mik, Michal Cenkner	Z	2	0P+2C	L	ZP
17X31D	Project 1 DOS Michal Drábek, Zden k Michl, Martin Chýle	Z	2	0P+2C	L	ZP
18X31D	Project 1 DOS Daniel Kytý	Z	2	0P+2C	L	ZP
20X31D	Project 1 DOS	Z	2	0P+2C	L	ZP
21X31D	Project 1 DOS	Z	2	0P+2C	L	ZP
22X31D	Project 1 DOS Tomáš Kohout, Michal Frydrýn, Tomáš Mi unek, Luboš Nouzovský, Zden k Svatý, Karel Kocián, Jakub Nová ek, Pavel Vrtal	Z	2	0P+2C	L	ZP
23X31D	Project 1 DOS	Z	2	0P+2C	L	ZP
11X32D	Project 2 DOS Pavla Pecherková, Michal Matowicki, Jana Kuklová, Ond ej P ibyl, Jan P ikryl Jana Kuklová Jana Kuklová (Gar.)	Z	2	0P+3C	Z	ZP
12X32D	Project 2 DOS Zuzana arská, Dagmar Ko árková, Jan Kruntorád, Lukáš Týfa, Martin Jacura, Tomáš Javo ík, Ond ej Trešl, Pavel Purkart, Josef Kocourek,	Z	2	0P+3C	Z	ZP
14X32D	Project 2 DOS	Z	2	0P+3C	Z	ZP
15X32D	Project 2 DOS	Z	2	0P+3C	Z	ZP
16X32D	Project 2 DOS Josef Mík, Michal Cenkner	Z	2	0P+3C	Z	ZP
17X32D	Project 21 DOS	Z	2	0P+3C	Z	ZP
18X32D	Project 2 DOS Daniel Kytý, Tomáš Fíla	Z	2	0P+3C	Z	ZP
20X32D	Project 2 DOS Ji í R ži ka, Milan Sliacky, Pavel Hrubeš	Z	2	0P+3C	Z	ZP
21X32D	Project 2 DOS	Z	2	0P+3C	Z	ZP
22X32D	Project 2 DOS Tomáš Kohout, Michal Frydrýn, Luboš Nouzovský, Karel Kocián, Jakub Nová ek, Pavel Vrtal	Z	2	0P+3C	Z	ZP
23X32D	Project 2 DOS	Z	2	0P+3C	Z	ZP
11X33D	Project 3 DOS	Z	4	0P+4C	L	ZP
12X33D	Project 3 DOS Zuzana arská, Dagmar Ko árková, Jan Kruntorád, Lukáš Týfa, Martin Jacura, Tomáš Javo ík, Ond ej Trešl, Pavel Purkart, Josef Kocourek,	Z	4	0P+4C	L	ZP
14X33D	Project 3 DOS	Z	4	0P+4C	L	ZP
15X33D	Project 3 DOS	Z	4	0P+4C	L	ZP
16X33D	Project 3 DOS Josef Mik, Michal Cenkner	Z	4	0P+4C	L	ZP
17X33D	Project 3 DOS	Z	4	0P+4C	L	ZP
18X33D	Project 3 DOS Nela Kr má ová, Daniel Kytý	Z	4	0P+4C	L	ZP
20X33D	Project 3 DOS Milan Sliacky, Martin Langr, Pavel Hrubeš	Z	4	0P+4C	L	ZP
21X33D	Project 3 DOS	Z	4	0P+4C	L	ZP
22X33D	Project 3 DOS Tomáš Kohout, Michal Frydrýn, Tomáš Mi unek, Luboš Nouzovský, Zden k Svatý, Karel Kocián, Jakub Nová ek, Pavel Vrtal	Z	4	0P+4C	L	ZP
23X33D	Project 3 DOS	Z	4	0P+4C	L	ZP

Characteristics of the courses of this group of Study Plan: Code=X1-BP-DOS-22/23 Name=Research Groups Bachelor Full-Time TET-DOS from 2022/23

I E I DOO IIOII	11 2022/20		
11X31D	Project 1 DOS	Z	2
12X31D	Project 1 DOS	Z	2
14X31D	Project 1 DOS	Z	2
15X31D	Project 1 DOS	Z	2
16X31D	Project 1 DOS	Z	2
17X31D	Project 1 DOS	Z	2
18X31D	Project 1 DOS	Z	2
20X31D	Project 1 DOS	Z	2
21X31D	Project 1 DOS	Z	2
22X31D	Project 1 DOS	Z	2
23X31D	Project 1 DOS	Z	2
11X32D	Project 2 DOS	Z	2
12X32D	Project 2 DOS	Z	2
14X32D	Project 2 DOS	Z	2
15X32D	Project 2 DOS	Z	2
16X32D	Project 2 DOS	Z	2

17X32D	Project 21 DOS	Z	2
18X32D	Project 2 DOS	Z	2
20X32D	Project 2 DOS	Z	2
21X32D	Project 2 DOS	Z	2
22X32D	Project 2 DOS	Z	2
23X32D	Project 2 DOS	Z	2
11X33D	Project 3 DOS	Z	4
12X33D	Project 3 DOS	Z	4
14X33D	Project 3 DOS	Z	4
15X33D	Project 3 DOS	Z	4
16X33D	Project 3 DOS	Z	4
17X33D	Project 3 DOS	Z	4
18X33D	Project 3 DOS	Z	4
20X33D	Project 3 DOS	Z	4
21X33D	Project 3 DOS	Z	4
22X33D	Project 3 DOS	Z	4
23X33D	Project 3 DOS	Z	4

Name of the block: Compulsory elective courses

Minimal number of credits of the block: 8

The role of the block: PV

Code of the group: Y1-BP-DOS-24/25

Name of the group: Comp. Sel. Courses Bachelor Full-Time TET-DOS from 2024/25

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

Requirement courses in the group: In this group you have to complete 4 courses

Credits in the group: 8 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
21Y1AM	Aeronautical Information Management (AIM)	KZ	2	2P+0C	Z	PV
00Y1XB	Active participation in a scientific project, workshop, short-term trip abroad Patrik Horaž ovský Patrik Horaž ovský (Gar.)	KZ	2	2P+0C		PV
20Y1AF	Alternative Forms of Transportation Project Financing Mária Jánešová Mária Jánešová	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
12Y1AE	Applied Ecology Martin Jacura, Kristýna Neubergová	KZ	2	2P+0C	Z	PV
20Y1AE	Applied Electronics	KZ	2	2P+0C	Z	PV
14Y1BE	Barrierless Transport Jan Kr ál	KZ	2	2P+0C	L	PV
15Y1BO	Work Safety and Health Protection in Transportation Petr Musil	KZ	2	2P+0C	L	PV
11Y1BK	Error Detection Codes for Interlocking Systems Lucie Kárná Lucie Kárná (Gar.)	KZ	2	2P+0C	Z	PV
21Y1BS	Unmanned aircraft systems 1 Tomáš Tlu ho , Jakub Kraus, Michal erný	KZ	2	2P+0C	L	PV
14Y1BM	Biometric Methods	KZ	2	2P+0C	Z	PV
15Y1DZ	History of Railway Eva Rezlerová, Martin Jacura	KZ	2	2P+0C	L	PV
12Y1DS	Project Documentation in Practice	KZ	2	2P+0C	Z	PV
17Y1EV	Public Sector Economy	KZ	2	2P+0C	Z	PV
23Y1EH	Electronics and hardware in security of transportation	KZ	2	2P+0C	L	PV
20Y1EK	Qualification in Electrical Engineering	KZ	2	2P+0C	L	PV
16Y1EN	Energy Requirements of Vehicles	KZ	2	2P+0C	L	PV
20Y1EA	Environmental Aspects of Transport	KZ	2	2P+0C	Z	PV
15Y1EH	European Integration within Historical Context	KZ	2	2P+0C	Z	PV

18Y1EM	Experimental Methods in Mechanics Daniel Kytý Daniel Kytý Daniel Kytý (Gar.)	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 Vladimir Plos	KZ	2	2P+0C	L	PV
15Y1HD	History of City Mass Transport	KZ	2	2P+0C	Z	PV
12Y1HD	Milan Dont Traffic Noise	KZ	2	2P+0C	L	PV
15Y1HE	Dagmar Ko árková, Libor Ládyš Work Hygiene and Ergonomics in Traffic	KZ	2	2P+0C	Z	PV
16Y1IS	Petr Musil	KZ	2	2P+0C	L	PV
	Interactive simulators and simulations Combined Transportation		_			
12Y1KN	Combined Transportation Petr Nejedlý	KZ	2	2P+0C	Z	PV
12Y1KP	Communication and Promotion of Transport Projects Dagmar Ko árková, Ond ej Kubala	KZ	2	2P+0C	L	PV
20Y1KP	Communication and presentation skills Ji í R ži ka, Patrik Horaž ovský, Kristýna Navrátilová, Eva Haj iarová Ji í R ži ka	KZ	2	2P+0C	Z	PV
23Y1KM	Crisis Management	KZ	2	2P+0C	Z	PV
23Y1KO	Quantum Physics and Optoelectronics	KZ	2	2P+0C	L	PV
23Y1KY	Cybernality	KZ	2	2P+0C	L	PV
23Y1KB	Cyber security in transportation	KZ	2	2P+0C	L	PV
21Y1LJ	Aeronautical Radio and Flight Instruments	KZ	2	2P+0C	L	PV
21Y1LS	Air Traffic Services	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 Petr Bures	KZ	2	2P+0C	L	PV
23Y1MK	Crisis Situation Management in Critical Infrastructure	KZ	2	2P+0C	L	PV
23Y1MU	Emergency Events Management Solution in Transport Infrastructure	KZ	2	2P+0C	Z	PV
17Y1MD	Marketing in Transportation	KZ	2	2P+0C	Z	PV
18Y1MT	Engineering Materials Jaroslav Valach Jaroslav Valach (Gar.)	KZ	2	2P+0C	L	PV
21Y1MP	Matlab for project-oriented study	KZ	2	2P+0C	Z	PV
14Y1MP	Lenka Hanáková, Vladimír Socha Vladimír Socha Modeling Complex Assemblies and Models in Parametric	KZ	2	2P+0C	Z	PV
15Y1MK	Modeller Modern History in Context: Every Day Life and Transport	KZ	2	2P+0C		PV
15Y1NE	Marie Michlová German in the Economy and Society	KZ	2	2P+0C	 	PV
21Y1OH	Eva Rezlerová Airline Business and Operations	KZ	2	2P+0C	 	PV
	Peter Olexa, Eva Endrizalová Peter Olexa					
23Y1OK	Protection of Critical Objects and Infrastructures	KZ	2	2P+0C	L	PV
20Y1OI	Fare Collection and Information Systems Patrik Horaž ovský, Milan Sliacky Milan Sliacky (Gar.)	KZ	2	2P+0C	L	PV
14Y1OJ	Object - oriented programming in JAVA	KZ	2	2P+0C	L	PV
14Y1OP	Operating System	KZ	2	2P+0C	Z	PV
17Y1OF	Personal Finance	KZ	2	2P+0C	Z	PV
20Y1OK	Road Lighting František Kekula	KZ	2	2P+0C	L	PV
11Y1PV	Parametrical and Multicriterial Programming Olga Vraštilová Olga Vraštilová (Gar.)	KZ	2	2P+0C	Z	PV
17Y1PM	Personnel Management	KZ	2	2P+0C	L	PV
12Y1PC	Pedestrian and Cycling Transport Denis Liutov	KZ	2	2P+0C	L	PV
14Y1PG	Computer Graphics	KZ	2	2P+0C	L	PV
14Y1P2	Computer Aid of Transportation Projecting 2	KZ	2	2P+0C	Z	PV
18Y1PS	Computer Simulations in Mechanics Petr Zlámal Petr Zlámal (Gar.)	KZ	2	2P+0C	L	PV
14Y1PI	Corporate Information System	KZ	2	2P+0C	Z	PV
14Y1PZ	Advanced Data Processing in Spreadsheets	KZ	2	2P+0C	Z	PV
21Y1PC	ATC Procedures and Activities	KZ	2	2P+0C	Z	PV

12Y1PD	Assessment of Transport Structures	KZ	2	2P+0C	Z	PV
20Y1PK	Product Quality Management Processes	KZ	2	2P+0C	Z	PV
14Y1PJ	Martin Leso Martin Leso					
	C Programming Language Designing Roads in Civil 3D I	KZ	2	2P+0C	Z	PV
12Y1C1	Tomáš Honc	KZ	2	2P+0C	L	PV
12Y1C2	Designing Roads in Civil 3D II Tomáš Honc	KZ	2	2P+0C	Z	PV
14Y1PA	3D Modeling in AutoCAD	KZ	2	2P+0C	Z	PV
16Y1PV	Operation, Construction and Maintenance of Vehicles	KZ	2	2P+0C	L	PV
21Y1PA	Air Traffic Control Operating Procedures Terézia Pilmannová	KZ	2	2P+0C	Z	PV
12Y1PU	Organization Disposition of Railway Stations	KZ	2	2P+0C	L	PV
12Y1RU	Railway Lines Reconstruction	KZ	2	2P+0C	Z	PV
16Y1RE	Control and Electronic Vehicle Systems Josef Mik, Pemysl 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
21Y1SI	ATC Simulator Terézia Pilmannová	KZ	2	2P+0C	L	PV
20Y1SC	Sensors and Actuators	KZ	2	2P+0C	L	PV
17Y1SL	Sociology of Human Resources	KZ	2	2P+0C	Z	PV
11Y1SI	Transportation Software Engineering	KZ	2	2P+0C	Z	PV
16Y1KS	Quality and Reliability of Vehicles Jan Leistner, Filip Kotas, 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
16Y1SO	Strategy and innovation in mobility	KZ	2	2P+0C	Z	PV
17Y1SK	Urban and Regional Rail Transport Systems	KZ	2	2P+0C	L	PV
21Y1TH	Ji í Pospíšil Ji í Pospíšil (Gar.) 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
23Y1TP	Criminal Law in IT and Transportation	KZ	2	2P+0C	Z	PV
14Y1TI	Creating Interactive Internet Applications	KZ	2	2P+0C	L	PV
21Y1UL	Aircraft Maintenance	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, Josef Kolá Josef Kolá (Gar.)	KZ	2	2P+0C	L	PV
12Y1VR	Public Transport in Cities and Regions	KZ	2	2P+0C	Z	PV
23Y1VS	Vladimír Pušman Negotiation and Cooperation	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	KZ	2	2P+0C	Z	PV
15Y1ZV	Karel Hájek East-West dichotomy: Prelude to the Cold War	KZ	2	2P+0C	Z	PV
16Y1ZL	Marie Michlová Vehicle Testing, Legislation and Construction	KZ	2	2P+0C	Z	PV
	Zuzana Radová, Josef Mík				_	

Characteristics of the courses of this group of Study Plan: Code=Y1-BP-DOS-24/25 Name=Comp. Sel. Courses Bachelor Full-Time TET-DOS from 2024/25

21Y1AM Aeronautical Information Management (AIM) 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 Information AIS) and AIM.	KZ	2 VER Manual of
the Czech Rep. AIRAC System. NOTAM messages.PIB (Pre-flight Information Bulletin). AIC (Aeoronautical Inf. Circulars). Aeronautical Charts. EAD (
(Quality Mng. System). ADQ (Aeronautical Data Quality). AIXM (Aeronautical Inf. Exchnage Format).		
00Y1XB Active participation in a scientific project, workshop, short-term trip abroad	KZ	2
20Y1AF Alternative Forms of Transportation Project Financing	KZ	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 p 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	•	•
of transportation and telecomunication projects.		
18Y1AM Anatomy, Mobility and Safety of Man	KZ	2
Survey of tissues. Anatomical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circular		•
and biomechanics of muscular-skeletal system. Injury of human organs and musculo-skeletal system during traffic accidents. Mobility of ill and injure joint prostheses. Protective means and traffic safety regulations.	ed man and his tre	eatment. Human
14Y1AV Animation and Visualization	KZ	2
Advanced modifications and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and	I	I
and other effects, rendering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animation		
12Y1AE Applied Ecology Constraint and principles, applied in a principles, applied in a principle applied in a function of knowledge version and principles, applied in a function of knowledge version and principles, applied in a function of knowledge version and principles, applied in a function of knowledge version and principles, applied in a function of knowledge version and principles, applied in a function of knowledge version and principles, applied in a function of knowledge version and principles, applied in a function of knowledge version and principles applied in a function of knowledge version and principles applied in a function of knowledge version and principles applied in a function of knowledge version and principles applied in a function of knowledge version and principles applied in a function of knowledge version and principles applied in a function of knowledge version and principles applied in a function of knowledge version and principles applied in a function of knowledge version and principles applied in a function of knowledge version and principles applied in a function of knowledge version and principles applied in a function of knowledge version and principles applied in a function of knowledge version and principles applied in a function of knowledge version and principles applied in a function of knowledge version and principles applied in a function of knowledge version and a fun	KZ	2
General ecology - ecological concepts and principles, ecosystem, ecological factors, energy flow through the ecosystem. Application of knowledge veclogy. Landscape ecology - origin and historical development. Landscape definition and classification. Success. Traffic constructions in the country		· · · · · · · · · · · · · · · · · · ·
protection. Applied ecology.	,	
20Y1AE Applied Electronics	KZ	2
Basic electronic semiconductor components, their principles, characteristics and typical connection diagrams. Semiconductor PN junction diodes, tra		
amplifiers, basic logic gates. Functions of basic electronic circuits and methods for their designs (rectifiers, voltage regulator with Zener diode, transi amplifier as an inverting and noninverting amplifier).	stor as an amplifi	er, operational
14Y1BE Barrierless Transport	KZ	2
The issue of barrierless accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Stude	1	I
of barrierless environment roads, railway stations, public transport stops, terminal buildings, vehicles, public transport, information and orientation systems.	ems and transport	ation technology.
Theoretical knowledge will be supplemented by practical examples.		
15Y1BO Work Safety and Health Protection in Transportation	KZ	2
Fundamental legislative, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation health insurance of home and foreign business trips, statistics, working practice.	i. nealth protectio	n programmes,
11Y1BK Error Detection Codes for Interlocking Systems	KZ	2
Safe communication and methods for its assuring. Safety codes linear codes, cyclic codes, BCH codes, Reed-Solomon codes. Transmission channels	1	1
probability of undetected error. Design and assessment of detection codes; requirements of the European standard EN 50159.		
21Y1BS Unmanned aircraft systems 1	KZ	2
Unmanned Aviation Development. Aircraft design. Legislation in force in the Czech Republic. Planning and execution of the flight. Airspace division. procedures. Practical flights.	Operational risks	and operational
14Y1BM Biometric Methods	KZ	2
Basic biometric terms, authentication methods, principles and performance measurement of biometric systems, overview of biometric technologies,		_
retina recognition method, 2D and 3D face recognition, vein patterns on the wrist, ear biometrics, fingerprint recognition, skin spectroscopy, behavior	ral methods, the u	use of biometrics
in transport applications, safety and risks of biometric technologies.		
15Y1DZ History of Railway	KZ	2
Horse-drawn railways, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Re War II railways, railway development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train conn	•	
railway accidents, railway junctions. Excursions and projections.	oonone, ramay m	
12Y1DS Project Documentation in Practice	KZ	2
Project documentation creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process	ss. Budget and pr	icing. Practical
creation of some project documentation parts. 17Y1EV Public Sector Economy	KZ	2
Economic and financial theory of public sector, public choice theory, externalites, decisions about public finance allocation, economic assessment of		
tax system of the CR, state budget, management of public projects a their economic efficiency assessment, way of elaboration of PPP projects, funding		
23Y1EH Electronics and hardware in security of transportation	KZ	2
Types and parameters of signals. Passive circuits, properties, basic measurements. Passive filters, semiconductors. Operational amplifiers, basic cir	· ·	
Power supplies. Logic circuits. AD converters. Connection of analog and digital parts. Basic blocks of digital signal processing. Measurement processing in electronics.	g. Design and fab	rication methods
in electronics. 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	I	I .
voltage, maximum allowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legisl	-	_
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 ene drive, steam engine, air engine. Energy accumulation means, accumulator, flywheel, fuel cell. Energy recuperation. WTW analysis.	rgy. Combustion 6	engine, electric
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	I
Air quality, main pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transp		
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 and		
New quality of French-German relationship - a driving power of starting European integration.	a na consequence	o ioi Europe.
18Y1EM Experimental Methods in Mechanics	KZ	2
The purpose and role of experimental mechanics. Sensors for mechanical testing. Overview of experimental methods. Destructive and non-destructive	ive testing of mate	- 1
experimental procedures and sample preparation. Tensile and bending tests. Electrical resistance strain gages. Optical based strain measurement. Figure 1997 the strain measurement and bending tests and sample preparation.	-atigue and lifetim	ne prediction.
Instrumented hardness testing. Introduction to electron microscopy. Errors in measurement.		

	French Area Studies and Transportation	KZ	2
	regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air tra	· · · · · · · · · · · · · · · · · · ·	erminology.
-	e. Current political system. System of education, studying in France. Selected authors of French literature. French gastronol	my. KZ	2
	Computer Hardware asics of logical circuits design and their realization using FPGA. In detail, description of computer architecture and separate		
arithmetic and logical unit		pante accigning	,
15Y1HL I	History of Civil Aviation	KZ	2
	elopment of aircrafts lighter than air. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of	-	
· ·	viators. Helicopters. CSA airplanes. Development of aircrafts in Czechoslovakia between the years 1945-1989. Classic era vil aviation. Airline companies. Supersonic flying.	of aviation. Golde	n era of civil
	History of City Mass Transport	KZ	2
.	port in the world, development of tram, bus and trolley-bus systems. History of transport networks in the world, current tren		
clearance systems. Histor	ry of city transport in Prague and Brno. History of tram, bus and trolley-bus operation systems in the Czech Republic and Sl	lovakia.	
l l	Traffic Noise	KZ	2
	sic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regulat acoustic, noise transmission, soundproofing. Types of noise sources in area. Determination of acoustic situation in the area		
	nent of transport noise. Acoustic studies, measuring protocol.	of interest. Wetho	dology of
15Y1HE	Work Hygiene and Ergonomics in Traffic	KZ	2
	pational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of these		
•	of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technology to	o possibilities and	skills of a man.
	the field of transportation; relevant legislature. Interactive simulators and simulations	KZ	2
	plication of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical m		
	amics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simu		
	Combined Transportation	KZ	2
	egy and legislation. Load units. Means of transport in combined transport. Combined transport systems. Transshipping area		
	Communication and Promotion of Transport Projects Relations and the power of public opinion. Work and tasks of PR department and press spokesperson. Communication with	the media, the nu	2 blic on social
	remaining and the power of public opinion. Work and tasks of FR department and press spokesperson. Communication with		
-	seting and political PR on transport projects. Lobbing.		
	Communication and presentation skills	KZ	2
•	their fulfillment, current communication networks, work with various sources, formal requirements of emails and final theses		•
	lligence, manipulation and way of working with it, coping with stressful situations, formal requirements of presentations, way n skills, presentation skills in online environment.	ys or communicati	on during
	Crisis Management	KZ	2
	f crisis management with direction to Rescue system (IZS). After introduction to safety domain, there are terms and knowled		position of crisis
	ets; IZS-crisis management-crisis planning; and basic legislation. Practical part is concentrated to responsibility matrix com	pilation.	
23Y1KO (Output une Districe and Onte de stranice		
Ground of quantum physi	Quantum Physics and Optoelectronics ics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics components.	KZ	2
	ics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics components.	KZ	2
23Y1KY	,	KZ KZ	2
23Y1KY (Juridical aspects of behave	ics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics components. Cybernality	KZ KZ	2
23Y1KY (Juridical aspects of behave 23Y1KB (Basic concepts of security	ics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics components. Cybernality vior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism. Cyber security in transportation y and cyber security, legal status in the field of cyber security, virtual cyberspace and communities, taxonomy of crimes in computer security.	KZ Infoware and con KZ cyberspace, social	2 nected aspects.
23Y1KY (Juridical aspects of behave 23Y1KB (Basic concepts of security engineering, cyber attack	ics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics components. Cybernality vior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism. Cyber security in transportation y and cyber security, legal status in the field of cyber security, virtual cyberspace and communities, taxonomy of crimes in contect technology, information security, cyber attacks on telematics systems, security of systems with artificial intelligence, norms	KZ Infoware and con KZ cyberspace, socials and standards.	2 nected aspects. 2 impacts, social
23Y1KY (Juridical aspects of behave 23Y1KB (Basic concepts of security engineering, cyber attack 21Y1LJ (Juridical aspects of security engineering)	ics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics components. Cybernality vior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism Cyber security in transportation y and cyber security, legal status in the field of cyber security, virtual cyberspace and communities, taxonomy of crimes in content technology, information security, cyber attacks on telematics systems, security of systems with artificial intelligence, norms Aeronautical Radio and Flight Instruments	KZ Infoware and con KZ cyberspace, socials and standards. KZ	2 nected aspects. 2 impacts, social
23Y1KY (Juridical aspects of behave 23Y1KB (Basic concepts of security engineering, cyber attack 21Y1LJ (Juridical aspects of security engineering, cyber attack 21Y1LJ (Juridical aspects of security engineering, cyber attack 21Y1LJ (Juridical aspects of security engineering)	ics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics components. Cybernality vior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism. Cyber security in transportation y and cyber security, legal status in the field of cyber security, virtual cyberspace and communities, taxonomy of crimes in contect technology, information security, cyber attacks on telematics systems, security of systems with artificial intelligence, norms	KZ Infoware and con KZ cyberspace, socials and standards. KZ tion, airframe insti	2 nected aspects. 2 impacts, social 2 rumentation and
23Y1KY (Juridical aspects of behave 23Y1KB (Basic concepts of security engineering, cyber attack 21Y1LJ // Basic definitions, history of other aircraft equipment,	ics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics components. Cybernality vior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism Cyber security in transportation y and cyber security, legal status in the field of cyber security, virtual cyberspace and communities, taxonomy of crimes in contect technology, information security, cyber attacks on telematics systems, security of systems with artificial intelligence, norms. Aeronautical Radio and Flight Instruments of aircraft instrumentation, aerometric instrumentation, Earth magnetism, aircraft electric equipment, gyroscopic instrumentation.	KZ Infoware and con KZ cyberspace, socials and standards. KZ tion, airframe insti	2 nected aspects. 2 impacts, social 2 rumentation and
23Y1KY (Juridical aspects of behave 23Y1KB Basic concepts of security engineering, cyber attack 21Y1LJ July Basic definitions, history of the aircraft equipment, 21Y1LS July Airspace structure in Cze	ics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics components. Cybernality vior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism Cyber security in transportation y and cyber security, legal status in the field of cyber security, virtual cyberspace and communities, taxonomy of crimes in contect technology, information security, cyber attacks on telematics systems, security of systems with artificial intelligence, norms Aeronautical Radio and Flight Instruments of aircraft instrumentation, aerometric instrumentation, Earth magnetism, aircraft electric equipment, gyroscopic instrumentate engine instrumentation, warning and recording systems, instrumentation operational requirements, radiocommunication and Air Traffic Services ch Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, A	KZ Infoware and con KZ Cyberspace, social and standards. KZ Ition, airframe instit d radionavigation. KZ	2 nected aspects. 2 impacts, social 2 rumentation and
23Y1KY 0 Juridical aspects of behave 23Y1KB 0 Basic concepts of security engineering, cyber attack 21Y1LJ 7 Basic definitions, history of other aircraft equipment, 21Y1LS 7 Airspace structure in Cze at USA and Czechosloval	ics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics components. Cybernality vior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism Cyber security in transportation y and cyber security, legal status in the field of cyber security, virtual cyberspace and communities, taxonomy of crimes in contection technology, information security, cyber attacks on telematics systems, security of systems with artificial intelligence, norms Aeronautical Radio and Flight Instruments of aircraft instrumentation, aerometric instrumentation, Earth magnetism, aircraft electric equipment, gyroscopic instrumentate engine instrumentation, warning and recording systems, instrumentation operational requirements, radiocommunication and Air Traffic Services ch Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, Akia. ATS - Model of financing. Training System of Air Traffic Controllers. Future development of ATS.	KZ Infoware and con KZ Syberspace, social and standards. KZ Ition, airframe instit d radionavigation. KZ APP a ACC contro	2 impacts, social 2 rumentation and 2 I. History of ATS
23Y1KY 0 Juridical aspects of behave 23Y1KB 0 Basic concepts of security engineering, cyber attack 21Y1LJ 7 Basic definitions, history of other aircraft equipment, 21Y1LS 7 Airspace structure in Cze at USA and Czechosloval 17Y1LL 1	ics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics components. Cybernality vior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism Cyber security in transportation y and cyber security, legal status in the field of cyber security, virtual cyberspace and communities, taxonomy of crimes in contection technology, information security, cyber attacks on telematics systems, security of systems with artificial intelligence, norms Aeronautical Radio and Flight Instruments of aircraft instrumentation, aerometric instrumentation, Earth magnetism, aircraft electric equipment, gyroscopic instrumentate engine instrumentation, warning and recording systems, instrumentation operational requirements, radiocommunication and Air Traffic Services ch Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, Akia. ATS - Model of financing. Training System of Air Traffic Controllers. Future development of ATS. Logistics of Passenger and Freight Air Transport	KZ KZ Infoware and con KZ Cyberspace, social and standards. KZ Ition, airframe instit d radionavigation. KZ APP a ACC contro	2 impacts, social 2 rumentation and 2 I. History of ATS
23Y1KY 0 Juridical aspects of behave 23Y1KB 0 Basic concepts of security engineering, cyber attack 21Y1LJ 7 Basic definitions, history of other aircraft equipment, 21Y1LS 7 Airspace structure in Cze at USA and Czechosloval 17Y1LL 1 Logistics airline passenge	ics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics components. Cybernality vior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism Cyber security in transportation y and cyber security, legal status in the field of cyber security, virtual cyberspace and communities, taxonomy of crimes in contection technology, information security, cyber attacks on telematics systems, security of systems with artificial intelligence, norms Aeronautical Radio and Flight Instruments of aircraft instrumentation, aerometric instrumentation, Earth magnetism, aircraft electric equipment, gyroscopic instrumentate engine instrumentation, warning and recording systems, instrumentation operational requirements, radiocommunication and Air Traffic Services ch Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, Akia. ATS - Model of financing. Training System of Air Traffic Controllers. Future development of ATS.	KZ KZ Infoware and con KZ Cyberspace, social and standards. KZ Ition, airframe instit d radionavigation. KZ APP a ACC contro	2 impacts, social 2 rumentation and 2 I. History of ATS
23Y1KY 0 Juridical aspects of behave 23Y1KB 0 Basic concepts of security engineering, cyber attack 21Y1LJ 7 Basic definitions, history of other aircraft equipment, 21Y1LS 7 Airspace structure in Cze at USA and Czechosloval 17Y1LL 1 Logistics airline passenge air cargo. Information sys	ics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics components. Cybernality vior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism Cyber security in transportation y and cyber security, legal status in the field of cyber security, virtual cyberspace and communities, taxonomy of crimes in contection technology, information security, cyber attacks on telematics systems, security of systems with artificial intelligence, norms Aeronautical Radio and Flight Instruments of aircraft instrumentation, aerometric instrumentation, Earth magnetism, aircraft electric equipment, gyroscopic instrumentate engine instrumentation, warning and recording systems, instrumentation operational requirements, radiocommunication and Air Traffic Services ch Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, Alexa. ATS - Model of financing. Training System of Air Traffic Controllers. Future development of ATS. Logistics of Passenger and Freight Air Transport er and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial to	KZ KZ Infoware and con KZ Cyberspace, social and standards. KZ Ition, airframe instit d radionavigation. KZ APP a ACC contro	2 impacts, social 2 rumentation and 2 I. History of ATS
23Y1KY 0 Juridical aspects of behave 23Y1KB 0 Basic concepts of security engineering, cyber attack 21Y1LJ 7 Basic definitions, history of other aircraft equipment, 21Y1LS 7 Airspace structure in Cze at USA and Czechosloval 17Y1LL I Logistics airline passenge air cargo. Information systems 20Y1LN I Description and examples	ics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics components. Cybernality vior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism Cyber security in transportation y and cyber security, legal status in the field of cyber security, virtual cyberspace and communities, taxonomy of crimes in contection technology, information security, cyber attacks on telematics systems, security of systems with artificial intelligence, norms Aeronautical Radio and Flight Instruments of aircraft instrumentation, aerometric instrumentation, Earth magnetism, aircraft electric equipment, gyroscopic instrumentate engine instrumentation, warning and recording systems, instrumentation operational requirements, radiocommunication and Air Traffic Services ch Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, Akia. ATS - Model of financing. Training System of Air Traffic Controllers. Future development of ATS. Logistics of Passenger and Freight Air Transport er and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial to terms in air transport. Global distribution systems. Location and Navigation s of road networks, localization on the network. Routing algorithms, their properties and implementation. Description and ex-	KZ KZ Infoware and con KZ Cyberspace, social and standards. KZ Ition, airframe instit d radionavigation. KZ APP a ACC contro KZ ransport process	2 impacts, social 2 rumentation and 2 I. History of ATS 2 passengers and
23Y1KY 0 Juridical aspects of behave 23Y1KB 0 Basic concepts of security engineering, cyber attack 21Y1LJ 7 Basic definitions, history of other aircraft equipment, 21Y1LS 7 Airspace structure in Cze at USA and Czechosloval 17Y1LL I Logistics airline passenge air cargo. Information systems 20Y1LN I Description and examples transport connections, routing the same content of	ics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics components. Cybernality vior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism Cyber security in transportation y and cyber security, legal status in the field of cyber security, virtual cyberspace and communities, taxonomy of crimes in contection technology, information security, cyber attacks on telematics systems, security of systems with artificial intelligence, norms Aeronautical Radio and Flight Instruments of aircraft instrumentation, aerometric instrumentation, Earth magnetism, aircraft electric equipment, gyroscopic instrumentate engine instrumentation, warning and recording systems, instrumentation operational requirements, radiocommunication and Air Traffic Services ch Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, Akia. ATS - Model of financing. Training System of Air Traffic Controllers. Future development of ATS. Logistics of Passenger and Freight Air Transport er and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial to terms in air transport. Global distribution systems. Location and Navigation s of road networks, localization on the network. Routing algorithms, their properties and implementation. Description and exuting algorithms, their properties and implementation.	KZ KZ Infoware and con KZ Cyberspace, social and standards. KZ Ition, airframe instited radionavigation. KZ APP a ACC contro KZ ransport process KZ ransport process	2 impacts, social 2 rumentation and 2 I. History of ATS 2 passengers and 2 ts for finding
23Y1KY 0 Juridical aspects of behave 23Y1KB 0 Basic concepts of security engineering, cyber attack 21Y1LJ 7 Basic definitions, history of other aircraft equipment, 21Y1LS 7 Airspace structure in Cze at USA and Czechosloval 17Y1LL I Logistics airline passenge air cargo. Information systems 20Y1LN I Description and examples transport connections, rot 23Y1MK 0	ics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics components. Cybernality vior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism Cyber security in transportation y and cyber security, legal status in the field of cyber security, virtual cyberspace and communities, taxonomy of crimes in contection contection of cyber security, virtual cyberspace and communities, taxonomy of crimes in contection of cyber security, cyber attacks on telematics systems, security of systems with artificial intelligence, norms Aeronautical Radio and Flight Instruments of aircraft instrumentation, aerometric instrumentation, Earth magnetism, aircraft electric equipment, gyroscopic instrumentation instrumentation, warning and recording systems, instrumentation operational requirements, radiocommunication and Air Traffic Services ch Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, Akia. ATS - Model of financing. Training System of Air Traffic Controllers. Future development of ATS. Logistics of Passenger and Freight Air Transport er and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial tetems in air transport. Global distribution systems. Location and Navigation s of road networks, localization on the network. Routing algorithms, their properties and implementation. Crisis Situation Management in Critical Infrastructure	KZ KZ Infoware and con KZ Cyberspace, social and standards. KZ Ition, airframe instited radionavigation. KZ APP a ACC contro KZ ransport process KZ amples of datase KZ	2 impacts, social 2 rumentation and 2 I. History of ATS 2 passengers and 2 ts for finding
23Y1KY 0 Juridical aspects of behave 23Y1KB 0 Basic concepts of security engineering, cyber attack 21Y1LJ 7 Basic definitions, history of other aircraft equipment, 21Y1LS 7 Airspace structure in Cze at USA and Czechosloval 17Y1LL I Logistics airline passenge air cargo. Information sys 20Y1LN I Description and examples transport connections, ror 23Y1MK 0 Determination of critical in	ics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics components. Cybernality vior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism Cyber security in transportation y and cyber security, legal status in the field of cyber security, virtual cyberspace and communities, taxonomy of crimes in contection technology, information security, cyber attacks on telematics systems, security of systems with artificial intelligence, norms Aeronautical Radio and Flight Instruments of aircraft instrumentation, aerometric instrumentation, Earth magnetism, aircraft electric equipment, gyroscopic instrumentate engine instrumentation, warning and recording systems, instrumentation operational requirements, radiocommunication and Air Traffic Services ch Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, Akia. ATS - Model of financing. Training System of Air Traffic Controllers. Future development of ATS. Logistics of Passenger and Freight Air Transport er and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial to terms in air transport. Global distribution systems. Location and Navigation s of road networks, localization on the network. Routing algorithms, their properties and implementation. Description and exuting algorithms, their properties and implementation.	KZ KZ Infoware and con KZ Syberspace, socials and standards. KZ Ition, airframe instited radionavigation. KZ APP a ACC contro KZ ransport process KZ ramples of datase KZ on and the self-go	2 impacts, social 2 rumentation and 2 I. History of ATS 2 passengers and 2 ts for finding
23Y1KY 0 Juridical aspects of behave 23Y1KB 0 Basic concepts of security engineering, cyber attack 21Y1LJ 1 Basic definitions, history of other aircraft equipment, 21Y1LS 1 Airspace structure in Cze at USA and Czechosloval 17Y1LL 1 Logistics airline passenge air cargo. Information sys 20Y1LN 1 Description and examples transport connections, ror 23Y1MK 0 Determination of critical in their responsibilities to an	ics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics components. Cybernality Vior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism Cyber security in transportation y and cyber security, legal status in the field of cyber security, virtual cyberspace and communities, taxonomy of crimes in content of technology, information security, cyber attacks on telematics systems, security of systems with artificial intelligence, norms Aeronautical Radio and Flight Instruments of aircraft instrumentation, aerometric instrumentation, Earth magnetism, aircraft electric equipment, gyroscopic instrumentation instrumentation, warning and recording systems, instrumentation operational requirements, radiocommunication and Air Traffic Services ch Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, A kia. ATS - Model of financing. Training System of Air Traffic Controllers. Future development of ATS. Logistics of Passenger and Freight Air Transport er and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial to tems in air transport. Global distribution systems. Location and Navigation so foroad networks, localization on the network. Routing algorithms, their properties and implementation. Crisis Situation Management in Critical Infrastructure infrastructure elements on all levels, their protection systems, responsibilities of particular agencies of the state administration.	KZ KZ Infoware and con KZ Syberspace, socials and standards. KZ Ition, airframe instited radionavigation. KZ APP a ACC contro KZ ransport process KZ ramples of datase KZ on and the self-go	2 impacts, social 2 rumentation and 2 I. History of ATS 2 passengers and 2 ts for finding
23Y1KY 0 Juridical aspects of behave 23Y1KB 0 Basic concepts of security engineering, cyber attack 21Y1LJ 1 Basic definitions, history of other aircraft equipment, 21Y1LS 1 Airspace structure in Cze at USA and Czechosloval 17Y1LL 1 Logistics airline passenge air cargo. Information sys 20Y1LN 1 Description and examples transport connections, ror 23Y1MK 0 Determination of critical in their responsibilities to an 23Y1MU 1 Basic solutions of emerge	ics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics components. Cybernality vior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism Cyber security in transportation y and cyber security, legal status in the field of cyber security, virtual cyberspace and communities, taxonomy of crimes in contection technology, information security, cyber attacks on telematics systems, security of systems with artificial intelligence, norms Aeronautical Radio and Flight Instruments of aircraft instrumentation, aerometric instrumentation, Earth magnetism, aircraft electric equipment, gyroscopic instrumentate engine instrumentation, warning and recording systems, instrumentation operational requirements, radiocommunication and Air Traffic Services ch Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, Akia. ATS - Model of financing. Training System of Air Traffic Controllers. Future development of ATS. Logistics of Passenger and Freight Air Transport er and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial trems in air transport. Global distribution systems. Location and Navigation s of road networks, localization on the network. Routing algorithms, their properties and implementation. Crisis Situation Management in Critical Infrastructure Infrastructure elements on all levels, their protection systems, responsibilities of particular agencies of the state administratic nounce particular safety provisions. Physical and cyber protection of critical infrastructure with special attention to the soft ta Emergency Events Management Solution in Transport Infrastructure ency events with emphasis of the transport infrastructure events and their solution management. Knowledge in the emergency	KZ KZ Infoware and con KZ Syberspace, socials and standards. KZ Ition, airframe instited radionavigation. KZ APP a ACC contro KZ ransport process KZ ransport process KZ amples of datase KZ on and the self-go	2 impacts, social 2 impacts, social 2 rumentation and 2 I. History of ATS 2 passengers and 2 ts for finding 2 vernment, and 2
23Y1KY 0 Juridical aspects of behave 23Y1KB 0 Basic concepts of security engineering, cyber attack 21Y1LJ 1 Basic definitions, history of other aircraft equipment, 21Y1LS 1 Airspace structure in Czeat USA and Czechosloval 17Y1LL 1 Logistics airline passenge air cargo. Information sys 20Y1LN 1 Description and examples transport connections, root 23Y1MK 0 Determination of critical in their responsibilities to an 23Y1MU 1 Basic solutions of emerge in liquidation work within the constant in the content of the constant in the	ics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics components. Cybernality vior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism Cyber security in transportation y and cyber security, legal status in the field of cyber security, virtual cyberspace and communities, taxonomy of crimes in contection to technology, information security, cyber attacks on telematics systems, security of systems with artificial intelligence, norms Aeronautical Radio and Flight Instruments of aircraft instrumentation, aerometric instrumentation, Earth magnetism, aircraft electric equipment, gyroscopic instrumentate engine instrumentation, warning and recording systems, instrumentation operational requirements, radiocommunication and Air Traffic Services ch Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, Akia. ATS - Model of financing. Training System of Air Traffic Controllers. Future development of ATS. Logistics of Passenger and Freight Air Transport er and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial trems in air transport. Global distribution systems. Location and Navigation s of road networks, localization on the network. Routing algorithms, their properties and implementation. Crisis Situation Management in Critical Infrastructure Infrastructure elements on all levels, their protection systems, responsibilities of particular agencies of the state administration once particular safety provisions. Physical and cyber protection of critical infrastructure with special attention to the soft ta Emergency Events Management Solution in Transport Infrastructure ency events with emphasis of the transport infrastructure events and their solution management. Knowledge in the emergency that transport infrastructure.	KZ KZ Infoware and con KZ cyberspace, social and standards. KZ Ition, airframe instited radionavigation. KZ APP a ACC contro KZ ransport process KZ camples of datase KZ on and the self-gourgets. KZ y planning and spe	2 impacts, social 2 impacts, social 2 rumentation and 2 I. History of ATS 2 passengers and 2 ts for finding 2 vernment, and 2 ecial procedures
23Y1KY 0 Juridical aspects of behave 23Y1KB 0 Basic concepts of security engineering, cyber attack 21Y1LJ 1 Basic definitions, history of other aircraft equipment, 21Y1LS 1 Airspace structure in Cze at USA and Czechosloval 17Y1LL 1 Logistics airline passenge air cargo. Information sys 20Y1LN 1 Description and examples transport connections, root 23Y1MK 0 Determination of critical in their responsibilities to an 23Y1MU 1 Basic solutions of emerge in liquidation work within 1 17Y1MD 1	ics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics components. Cybernality vior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism Cyber security in transportation y and cyber security, legal status in the field of cyber security, virtual cyberspace and communities, taxonomy of crimes in contection technology, information security, cyber attacks on telematics systems, security of systems with artificial intelligence, norms Aeronautical Radio and Flight Instruments of aircraft instrumentation, aerometric instrumentation, Earth magnetism, aircraft electric equipment, gyroscopic instrumentate engine instrumentation, warning and recording systems, instrumentation operational requirements, radiocommunication and Air Traffic Services ch Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, Akia. ATS - Model of financing. Training System of Air Traffic Controllers. Future development of ATS. Logistics of Passenger and Freight Air Transport er and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial trems in air transport. Global distribution systems. Location and Navigation s of road networks, localization on the network. Routing algorithms, their properties and implementation. Crisis Situation Management in Critical Infrastructure Infrastructure elements on all levels, their protection systems, responsibilities of particular agencies of the state administratic nounce particular safety provisions. Physical and cyber protection of critical infrastructure with special attention to the soft ta Emergency Events Management Solution in Transport Infrastructure ency events with emphasis of the transport infrastructure events and their solution management. Knowledge in the emergency	KZ KZ Infoware and con KZ cyberspace, social and standards. KZ Ition, airframe instited radionavigation. KZ APP a ACC contro KZ ransport process KZ camples of datase KZ on and the self-gourgets. KZ y planning and specific	2 impacts, social 2 impacts, social 2 rumentation and 2 I. History of ATS 2 passengers and 2 ts for finding 2 vernment, and 2 ecial procedures
23Y1KY 0 Juridical aspects of behave 23Y1KB 0 Basic concepts of security engineering, cyber attack 21Y1LJ 1 Basic definitions, history of other aircraft equipment, 21Y1LS 1 Airspace structure in Cze at USA and Czechosloval 17Y1LL 1 Logistics airline passenge air cargo. Information sys 20Y1LN 1 Description and examples transport connections, root 23Y1MK 0 Determination of critical in their responsibilities to an 23Y1MU 1 Basic solutions of emerge in liquidation work within 1 17Y1MD 1 General principles of mar the application of marketi	ies. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics components. Cybernality vior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism Cyber security in transportation y and cyber security, legal status in the field of cyber security, virtual cyberspace and communities, taxonomy of crimes in content technology, information security, cyber attacks on telematics systems, security of systems with artificial intelligence, norms Aeronautical Radio and Flight Instruments of aircraft instrumentation, aerometric instrumentation, Earth magnetism, aircraft electric equipment, gyroscopic instrumentate engine instrumentation, warning and recording systems, instrumentation operational requirements, radiocommunication and Air Traffic Services of Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, Akia, ATS - Model of financing. Training System of Air Traffic Controllers. Future development of ATS. Logistics of Passenger and Freight Air Transport or and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial to tems in air transport. Global distribution systems. Location and Navigation or of road networks, localization on the network. Routing algorithms, their properties and implementation. Crisis Situation Management in Critical Infrastructure Infrastructure elements on all levels, their protection systems, responsibilities of particular agencies of the state administratic counce particular safety provisions. Physical and cyber protection of critical infrastructure with special attention to the soft ta Emergency Events Management Solution in Transport Infrastructure Marketing in Transportation Keting applied to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transport.	KZ KZ Infoware and con KZ cyberspace, social and standards. KZ Ition, airframe instited radionavigation. KZ APP a ACC contro KZ ransport process KZ camples of datase KZ on and the self-gourgets. KZ y planning and specific	2 impacts, social 2 impacts, social 2 rumentation and 2 I. History of ATS 2 passengers and 2 ts for finding 2 vernment, and 2 getial procedures 2 g differences in
23Y1KY 0 Juridical aspects of behave 23Y1KB 0 Basic concepts of security engineering, cyber attack 21Y1LJ 1 Basic definitions, history of other aircraft equipment, 21Y1LS 1 Airspace structure in Czeat USA and Czechosloval 17Y1LL 1 Logistics airline passenge air cargo. Information sys 20Y1LN 1 Description and examples transport connections, root 23Y1MK 0 Determination of critical in their responsibilities to an 23Y1MU 1 Basic solutions of emerge in liquidation work within 1 17Y1MD 1 General principles of mar the application of marketi 18Y1MT 1	ies. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics components. Cybernality vior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism Cyber security in transportation y and cyber security, legal status in the field of cyber security, virtual cyberspace and communities, taxonomy of crimes in content of the computer of the	KZ KZ Infoware and con KZ Syberspace, social and standards. KZ Ition, airframe instited radionavigation. KZ APP a ACC contro KZ ransport process KZ ransport process KZ on and the self-go argets. KZ y planning and spectated of the resulting that the resulting that the self-go argets.	2 impacts, social 2 impacts, social 2 rumentation and 2 I. History of ATS 2 passengers and 2 ts for finding 2 vernment, and 2 getial procedures 2 g differences in 2
23Y1KY 0 Juridical aspects of behave 23Y1KB 0 Basic concepts of security engineering, cyber attack 21Y1LJ 1 Basic definitions, history of other aircraft equipment, 21Y1LS 1 Airspace structure in Czeat USA and Czechosloval 17Y1LL 1 Logistics airline passenge air cargo. Information sys 20Y1LN 1 Description and examples transport connections, root 23Y1MK 0 Determination of critical in their responsibilities to an 23Y1MU 1 Basic solutions of emerge in liquidation work within 1 17Y1MD 1 General principles of mar the application of marketi 18Y1MT 1 Systematic overview of marketical in the content of	ies. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics components. Cybernality vior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism Cyber security in transportation y and cyber security, legal status in the field of cyber security, virtual cyberspace and communities, taxonomy of crimes in content of the content of the content of the cyber security, legal status in the field of cyber security, virtual cyberspace and communities, taxonomy of crimes in content of the cyber security, legal status in the field of cyber security, virtual cyberspace and communities, taxonomy of crimes in content of the cyber security of systems with artificial intelligence, norms are content of the cyber security of systems with artificial intelligence, norms are considered and content of the cyber systems, security of systems with artificial intelligence, norms are considered and content of the cyber systems and content of the cyber systems with artificial intelligence, norms are considered and content of the cyber systems and cyber cyber systems. Future development of the cyber of the cyber of the cyber systems and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial treams in air transport. Global distribution systems. Location and Navigation so for coad networks, localization on the network. Routing algorithms, their properties and implementation. Crisis Situation Management in Critical Infrastructure Infrastructure elements on all levels, their protection systems, responsibilities of particular agencies of the state administration counce particular safety provisions. Physical and cyber protection of critical infrastructure with special attention to the soft taxed and cyber protection of critical infrastructure with specia	KZ KZ Infoware and con KZ Syberspace, social and standards. KZ Ition, airframe instited radionavigation. KZ APP a ACC contro KZ ransport process KZ ransport process KZ y planning and specific and the resulting that the resulting that the composites, and co	2 impacts, social 2 impacts, social 2 rumentation and 2 I. History of ATS 2 passengers and 2 ts for finding 2 vernment, and 2 getial procedures 2 g differences in 2
23Y1KY 0 Juridical aspects of behave 23Y1KB 0 Basic concepts of security engineering, cyber attack 21Y1LJ 1 Basic definitions, history of other aircraft equipment, 21Y1LS 1 Airspace structure in Czeat USA and Czechosloval 17Y1LL 1 Logistics airline passenge air cargo. Information sys 20Y1LN 1 Description and examples transport connections, row 23Y1MK 0 Determination of critical in their responsibilities to an 23Y1MU 1 Basic solutions of emerge in liquidation work within 17Y1MD 1 General principles of mar the application of marketi 18Y1MT 1 Systematic overview of m to biological materials and	ics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics components. Cybernality i/or on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism Cyber security in transportation y and cyber security, legal status in the field of cyber security, virtual cyberspace and communities, taxonomy of crimes in a technology, information security, cyber attacks on telematics systems, security of systems with artificial intelligence, norms Aeronautical Radio and Flight Instruments of aircraft instrumentation, aerometric instrumentation, Earth magnetism, aircraft electric equipment, gyroscopic instrumenta engine instrumentation, warning and recording systems, instrumentation operational requirements, radiocommunication an Air Traffic Services ch Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, A kia. ATS - Model of financing. Training System of Air Traffic Controllers. Future development of ATS. Logistics of Passenger and Freight Air Transport er and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial trems in air transport. Global distribution systems. Location and Navigation s of road networks, localization on the network. Routing algorithms, their properties and implementation. Description and exuiting algorithms, their properties and implementation. Description and exuiting algorithms, their properties and implementation. Trainsport Infrastructure elements on all levels, their protection systems, responsibilities of particular agencies of the state administratic nounce particular safety provisions. Physical and cyber protection of critical infrastructure with special attention to the soft ta Emergency Events Management Solution in Transport Infrastructure mercy events with emphasis of the transport infrastructure events and their solution management. Knowledge in the emergency	KZ KZ Infoware and con KZ Syberspace, social and standards. KZ Ition, airframe instited radionavigation. KZ APP a ACC contro KZ ransport process KZ ransport process KZ y planning and specific and the resulting that the resulting that the composites, and co	2 impacts, social 2 impacts, social 2 rumentation and 2 I. History of ATS 2 passengers and 2 ts for finding 2 vernment, and 2 getial procedures 2 g differences in 2
23Y1KY 0 Juridical aspects of behave 23Y1KB 0 Basic concepts of security engineering, cyber attack 21Y1LJ 1 Basic definitions, history of other aircraft equipment, 21Y1LS 1 Airspace structure in Czeat USA and Czechosloval 17Y1LL 1 Logistics airline passenge air cargo. Information sys 20Y1LN 1 Description and examples transport connections, row 23Y1MK 0 Determination of critical in their responsibilities to an 23Y1MU 1 Basic solutions of emerge in liquidation work within their properties of mar the application of marketi 18Y1MT 1 Systematic overview of mate to biological materials and 21Y1MP 1	ies. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics components. Cybernality vior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism Cyber security in transportation y and cyber security, legal status in the field of cyber security, virtual cyberspace and communities, taxonomy of crimes in content of the content of the content of the cyber security, legal status in the field of cyber security, virtual cyberspace and communities, taxonomy of crimes in content of the cyber security, legal status in the field of cyber security, virtual cyberspace and communities, taxonomy of crimes in content of the cyber security of systems with artificial intelligence, norms are content of the cyber security of systems with artificial intelligence, norms are considered and content of the cyber systems, security of systems with artificial intelligence, norms are considered and content of the cyber systems and content of the cyber systems with artificial intelligence, norms are considered and content of the cyber systems and cyber cyber systems. Future development of the cyber of the cyber of the cyber systems and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial treams in air transport. Global distribution systems. Location and Navigation so for coad networks, localization on the network. Routing algorithms, their properties and implementation. Crisis Situation Management in Critical Infrastructure Infrastructure elements on all levels, their protection systems, responsibilities of particular agencies of the state administration counce particular safety provisions. Physical and cyber protection of critical infrastructure with special attention to the soft taxed and cyber protection of critical infrastructure with specia	KZ KZ Infoware and con KZ cyberspace, social and standards. KZ Ition, airframe instited radionavigation. KZ APP a ACC contro KZ ransport process KZ camples of datase KZ on and the self-go argets. KZ y planning and specific and the resulting and composites, and charts. KZ	2 impacts, social 2 impacts, social 2 rumentation and 2 I. History of ATS 2 passengers and 2 ts for finding 2 vernment, and 2 guideferences in 2 attention is paid 2

14Y1MP	Mandalian Occasion Assemblies and Mandala in Demonstria Mandalian	1/7	
	Modeling Complex Assemblies and Models in Parametric Modeller ing - tools and methodology of working subassemblies and assemblies, sheet metal parts modelling, welded assemblies, pipe	KZ	tion lines
	endering - physical and material properties, lighting sources. MKP - visual example.	simoo, and distrib	311011 111100.
15Y1MK	Modern History in Context: Every Day Life and Transport	KZ	2
Historical overview of	modern history of every day life, science, technology and transport in a wider context.		
15Y1NE	German in the Economy and Society	KZ	2
	social issues of German speaking countries and of the EU. Reading and listening of texts. Lexical, grammatical and semantic	analysis of texts.	Discussion on
selected topics.	Airling Rusiness and Operations	KZ	2
_	Airline Business and Operations comprehensive view of the commercial, operational and transportation activities of air transport companies. It focuses on the organical companies.	l	1
•	r strategy, economic and operational indicators. It introduces students in detail to operational processes and the essentials of tra		•
a basic view of the ec	onomic aspects of air transport.		
23Y1OK	Protection of Critical Objects and Infrastructures	KZ	2
	systems, critical item, risks and their courses, criticality, vulnerability, connectivity, dependability, resilience, failure, protection, s	safety of critical ol	ejects and critica
infrastructures.	Fave Callastian and Information Customs	1/7	
20Y10I	Fare Collection and Information Systems s in public transport and their components (on-board units, validators, turnstiles,). Information systems and their componen	KZ	ahles mans
=	ors (cycles, location or current delay of vehicles,). The issue of tariff systems. Other examples of clearance systems (parking	•	ables, maps,
14Y1OJ	Object - oriented programming in JAVA	KZ	2
	capsulation. Classes. Attributes. Access modifiers. Methods and overloading. Special methods (constructors, getters / setters)		
data types. Inheritance	e. Polymorphism. Statics, constants, interfaces, abstract classes, enum, packages, exceptions, collections, generics, lambda ex	xpressions, anon	ymous functions
14Y1OP	Operating System	KZ	2
	on GNU/Linux OS. X-window system. Rights management - users and groups, ACL rights. Filesystems and attributes. Program	•	
	le programs / commands. Config files. SW management, package systems. Programs in graphic shell - text, spreadsheet, grap ses management. Safe and secure configuration of OS. Remote administration.	phic editors, sour	d, video and
17Y1OF	Personal Finance	KZ	2
_	get, financing of basic living needs), debt (loans and credits, payment instruments, interest and fees, debt trap), financing of he		_
	ancing), savings and investments (investment horizon, return, risk, investment strategy), insurance (insurance types, suitability a		
(retirement savings ar	d insurance).		_
20Y1OK	Road Lighting	KZ	2
	s and terms, street lighting components (luminaires, control cabinets for street lighting, street lighting cables), characteristics of lighting cables and terms, street lighting cables are calculated as a street lighting cables.	-	-
-	dards, measurement of illuminance and luminance in road lighting, tunnels, conceptual approach to street lighting design, ligh	iting calculations	n DIALux and
Relux, street lighting of	Parametrical and Multicriterial Programming	KZ	2
	n of linear programming with a parameter in objective function, on right sides and in the matrix of coeficients of linear constraints	1	Į.
17Y1PM	Personnel Management	KZ	2
	group, man as personality, planning, choice, evaluation and education of human sources, work adaptation, teamwork, intercul		1
12Y1PC	Pedestrian and Cycling Transport	KZ	2
-	. Pedestrian crossings. Modifications for blind, dim-sighted and disabled people. Design of cycle routes network. Ways of cycle routes	-	
	of cyclists from other transport modes. Cycle tracks and its design - one way streets, reserved traffic lanes, bus stops, crossing	ngs with other tra	nsport modes,
crossroads Traffic sid	ns and road marking for cyclists.		
	, ·	V7	
14Y1PG	Computer Graphics	KZ	2
14Y1PG Basic formats of graph	Computer Graphics iic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with ed	1	1
14Y1PG Basic formats of graph	Computer Graphics	1	1
14Y1PG Basic formats of graph level scope) using layer 14Y1P2	Computer Graphics ic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with eders, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics cards.	diting programs (v	vithin the user
14Y1PG Basic formats of graph level scope) using layer 14Y1P2 Overview of CAx applimodification (attribute:	Computer Graphics ic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with eders, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics cards. Computer Aid of Transportation Projecting 2 cation for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, s, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic trans	diting programs (v	rithin the user 2 Advanced blocks
14Y1PG Basic formats of graph level scope) using layer 14Y1P2 Overview of CAx applimodification (attributesection). Basics of 3D	Computer Graphics lic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with eders, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics cards. Computer Aid of Transportation Projecting 2 cation for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, s, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transmodelling.	diting programs (v	vithin the user 2 Advanced blocks -and longitudina
14Y1PG Basic formats of graph level scope) using layer 14Y1P2 Overview of CAx applimodification (attributesection). Basics of 3D 18Y1PS	Computer Graphics itic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with eders, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics cards. Computer Aid of Transportation Projecting 2 cation for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, s, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transmodelling. Computer Simulations in Mechanics	ititing programs (v KZ , data exchange). sition curve, cross	vithin the user 2 Advanced blocks -and longitudina
14Y1PG Basic formats of graph level scope) using layer 14Y1P2 Overview of CAx applimodification (attributesection). Basics of 3D 18Y1PS Principles and overview	Computer Graphics itic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with eders, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics cards. Computer Aid of Transportation Projecting 2 cation for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, s, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transmodelling. Computer Simulations in Mechanics w of tools for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model develop	kZ, data exchange). sition curve, cross	2 Advanced blocks -and longitudina 2 tion of geometry
14Y1PG Basic formats of graph level scope) using layer 14Y1P2 Overview of CAx applimodification (attributes section). Basics of 3D 18Y1PS Principles and overview from other CAE systems.	Computer Graphics itic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with eders, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics cards. Computer Aid of Transportation Projecting 2 cation for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, s, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transmodelling. Computer Simulations in Mechanics	kZ, data exchange). sition curve, cross	2 Advanced blocks -and longitudina 2 tion of geometry
14Y1PG Basic formats of graph level scope) using layer 14Y1P2 Overview of CAx applimodification (attributes section). Basics of 3D 18Y1PS Principles and overview from other CAE systems.	Computer Graphics icia and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with eders, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics cards. Computer Aid of Transportation Projecting 2 cation for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, s, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transmodelling. Computer Simulations in Mechanics we of tools for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model developms. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary conditions modal analysis. Introduction to complex nonlinear problems.	kZ, data exchange). sition curve, cross	2 Advanced blocks -and longitudina 2 tion of geometry
14Y1PG Basic formats of graph level scope) using layer 14Y1P2 Overview of CAx applimodification (attributes section). Basics of 3D 18Y1PS Principles and overview from other CAE system tasks of structural and 14Y1PI	Computer Graphics itic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with eders, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics cards. Computer Aid of Transportation Projecting 2 cation for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, s, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transmodelling. Computer Simulations in Mechanics w of tools for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model developms. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary conditions	KZ data exchange). sition curve, cross KZ ment and adapta and application of	2 Advanced blocks -and longitudina 2 tion of geometry of the load. Basic
14Y1PG Basic formats of graph level scope) using layer 14Y1P2 Overview of CAx applimodification (attributes section). Basics of 3D 18Y1PS Principles and overviet from other CAE system tasks of structural and 14Y1PI Data-information-know (personalistic, product	Computer Graphics icia and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with eders, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics cards. Computer Aid of Transportation Projecting 2 cation for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, s, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transmodelling. Computer Simulations in Mechanics work tools for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model developms. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary conditions modal analysis. Introduction to complex nonlinear problems. Corporate Information System vledge, components of information system, syntatic and semantic sense of data, structure of corporate information system, paion, storage, etc.), corporate information politic and information control, risks of information system operation, legal environments.	KZ data exchange). sition curve, cross KZ ment and adapta and application of KZ writicular information	2 Advanced blocks -and longitudina 2 tion of geometry of the load. Basic
14Y1PG Basic formats of graph level scope) using layer 14Y1P2 Overview of CAx applimodification (attribute section). Basics of 3D 18Y1PS Principles and overview from other CAE system tasks of structural and 14Y1Pl Data-information-know (personalistic, product state information systems).	Computer Graphics lic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with eders, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics cards. Computer Aid of Transportation Projecting 2 cation for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, s, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transmodelling. Computer Simulations in Mechanics wo fools for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model developms. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary conditions modal analysis. Introduction to complex nonlinear problems. Corporate Information System vertical and semantic sense of data, structure of corporate information system, pation, storage, etc.), corporate information politic and information control, risks of information system operation, legal environment, information system security, data protection, safety politics.	KZ data exchange). sition curve, cross KZ ment and adapta and application of KZ articular information s	2 Advanced blocks -and longitudina 2 tion of geometry of the load. Basic 2 n system ystem operation
14Y1PG Basic formats of graph level scope) using layer 14Y1P2 Overview of CAx applimodification (attributed section). Basics of 3D 18Y1PS Principles and overview from other CAE system tasks of structural and 14Y1PI Data-information-know (personalistic, product state information system 14Y1PZ	Computer Graphics icia and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with edition and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with edition and possibilities of digital photography, scanning and computer technology like monitors and graphics cards. Computer Aid of Transportation Projecting 2 cation for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, special possibilities). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transpodelling). Computer Simulations in Mechanics we of tools for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model developms. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary conditions modal analysis. Introduction to complex nonlinear problems. Corporate Information System Idedge, components of information system, syntatic and semantic sense of data, structure of corporate information system, paion, storage, etc.), corporate information politic and information control, risks of information system operation, legal environments, information system security, data protection, safety politics. Advanced Data Processing in Spreadsheets	KZ ment and adapta and application of information KZ	2 Advanced blocks -and longitudina 2 tion of geometry of the load. Basic 2 n system ystem operation
14Y1PG Basic formats of graph level scope) using layer 14Y1P2 Overview of CAx applimodification (attributed section). Basics of 3D 18Y1PS Principles and overview from other CAE system tasks of structural and 14Y1Pl Data-information-know (personalistic, product state information system 14Y1PZ Students will be familiated.	Computer Graphics icia and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with eders, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics cards. Computer Aid of Transportation Projecting 2 cation for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, s, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transmodelling. Computer Simulations in Mechanics w of tools for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model developms. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary conditions modal analysis. Introduction to complex nonlinear problems. Corporate Information System idedge, components of information system, syntatic and semantic sense of data, structure of corporate information system, paion, storage, etc.), corporate information politic and information control, risks of information system operation, legal environment, information system security, data protection, safety politics. Advanced Data Processing in Spreadsheets are with principles of working in a spreadsheet. Graphic layout of the table appearance, formatting of numbers, insertion of form	KZ ment and adapta and application of information of uncertainty of the total and function and and functi	2 Advanced blocks -and longitudina 2 tion of geometry of the load. Basic 2 n system ystem operation 2 s, including
14Y1PG Basic formats of graph level scope) using layer 14Y1P2 Overview of CAx applimodification (attributed section). Basics of 3D 18Y1PS Principles and overview from other CAE system tasks of structural and 14Y1PI Data-information-known (personalistic, product state information system 14Y1PZ Students will be familial addressing, error determined system of the structural and the system of th	Computer Graphics icia and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with edition and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with edition and possibilities of digital photography, scanning and computer technology like monitors and graphics cards. Computer Aid of Transportation Projecting 2 cation for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, special possibilities). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transpodelling). Computer Simulations in Mechanics we of tools for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model developms. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary conditions modal analysis. Introduction to complex nonlinear problems. Corporate Information System Idedge, components of information system, syntatic and semantic sense of data, structure of corporate information system, paion, storage, etc.), corporate information politic and information control, risks of information system operation, legal environments, information system security, data protection, safety politics. Advanced Data Processing in Spreadsheets	KZ ment and adapta and application of information of uncertainty of the total and function and and functi	2 Advanced blocks -and longitudina 2 tion of geometry of the load. Basic 2 n system ystem operation 2 s, including
14Y1PG Basic formats of graph level scope) using layer 14Y1P2 Overview of CAx applimodification (attributed section). Basics of 3D 18Y1PS Principles and overview from other CAE system tasks of structural and 14Y1PI Data-information-known (personalistic, product state information system 14Y1PZ Students will be familial addressing, error determined system of the structural and the system of th	Computer Graphics icia and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with eders, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics cards. Computer Aid of Transportation Projecting 2 cation for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, s, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transmodelling. Computer Simulations in Mechanics w of tools for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model developms. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary conditions modal analysis. Introduction to complex nonlinear problems. Corporate Information System idedge, components of information system, syntatic and semantic sense of data, structure of corporate information system, pa ion, storage, etc.), corporate information politic and information control, risks of information system operation, legal environment, information system security, data protection, safety politics. Advanced Data Processing in Spreadsheets are with principles of working in a spreadsheet. Graphic layout of the table appearance, formatting of numbers, insertion of formation. Working with large spreadsheets, filters, advanced filters, database functions. Pivot tables and charts, conditional formatting.	KZ ment and adapta and application of information of uncertainty of the total and function and and functi	2 Advanced blocks -and longitudina 2 tion of geometry of the load. Basic 2 n system ystem operation 2 s, including
14Y1PG Basic formats of graph level scope) using layer 14Y1P2 Overview of CAx applimodification (attributed section). Basics of 3D 18Y1PS Principles and overview from other CAE system tasks of structural and 14Y1PI Data-information-known (personalistic, product state information system 14Y1PZ Students will be familial addressing, error determined and system 14Y1PC	Computer Graphics iic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with eders, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics cards. Computer Aid of Transportation Projecting 2 cation for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, s, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transmodelling. Computer Simulations in Mechanics w of tools for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model developms. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary conditions modal analysis. Introduction to complex nonlinear problems. Corporate Information System Vedge, components of information system, syntatic and semantic sense of data, structure of corporate information system, pa ion, storage, etc.), corporate information politic and information control, risks of information system operation, legal environments, information system security, data protection, safety politics. Advanced Data Processing in Spreadsheets are with principles of working in a spreadsheet. Graphic layout of the table appearance, formatting of numbers, insertion of formation. Working with large spreadsheets, filters, advanced filters, database functions. Pivot tables and charts, conditional formatting and questions from various companies and training.	KZ and application of information of information of solution function g, solution finding KZ	2 Advanced blocks -and longitudina 2 tion of geometry of the load. Basic 2 on system ystem operation 2 s, including g, solver, macros
14Y1PG Basic formats of graph level scope) using layer 14Y1P2 Overview of CAx applimodification (attributed section). Basics of 3D 18Y1PS Principles and overview from other CAE system tasks of structural and 14Y1PI Data-information-known (personalistic, product state information system 14Y1PZ Students will be familial addressing, error determined data analysis. Example 21Y1PC Air traffic control proceed the airports and low of the strong layer and layer an	Computer Graphics iic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with eders, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics cards. Computer Aid of Transportation Projecting 2 cation for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, s, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transmodelling. Computer Simulations in Mechanics word tools for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model developms. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary conditions modal analysis. Introduction to complex nonlinear problems. Corporate Information System idedge, components of information system, syntatic and semantic sense of data, structure of corporate information system, paidon, storage, etc.), corporate information politic and information control, risks of information system operation, legal environment, information system security, data protection, safety politics. Advanced Data Processing in Spreadsheets are with principles of working in a spreadsheet. Graphic layout of the table appearance, formatting of numbers, insertion of formation. Working with large spreadsheets, filters, advanced filters, database functions. Pivot tables and charts, conditional formatting and questions from various companies and training. ATC Procedures and Activities edures, basics of communication and phraseology, aircraft identification, spacing and traffic coordination. In addition, the cours sibility operational procedures. Students will during the course learn basic safety management applications applied across the	KZ and and function of solution solution of information of solution finding KZ articular information of KZ and application of KZ articular information of information of information of KZ articular i	2 Advanced blocks -and longitudina 2 tion of geometry of the load. Basic 2 on system ystem operation 2 s, including g, solver, macros 2 affic control at
14Y1PG Basic formats of graph level scope) using layer 14Y1P2 Overview of CAx applismodification (attributes section). Basics of 3D 18Y1PS Principles and overviet from other CAE system tasks of structural and 14Y1Pl Data-information-know (personalistic, product state information system 14Y1PZ Students will be familial addressing, error determined data analysis. Example 21Y1PC Air traffic control procepts and low votal state inforts and low votal	Computer Graphics lic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with eders, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics cards. Computer Aid of Transportation Projecting 2 cation for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, s, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transmodelling. Computer Simulations in Mechanics were tools for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model developms. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary conditions modal analysis. Introduction to complex nonlinear problems. Corporate Information System Vedge, components of information system, syntatic and semantic sense of data, structure of corporate information system, pa ion, storage, etc.), corporate information politic and information control, risks of information system operation, legal environments, information system security, data protection, safety politics. Advanced Data Processing in Spreadsheets are diplications and training. Advanced Storage spreadsheets, filters, advanced filters, database functions. Pivot tables and charts, conditional formattines and questions from various companies and training. ATC Procedures and Activities edures, basics of communication and phraseology, aircraft identification, spacing and traffic coordination. In addition, the cours sibility operational procedures. Students will during the course learn basic safety management applications applied across the Assessment of Transport Structures	KZ mulas and function g, solution finding KZ mulas and function finding KZ	2 Advanced blocks -and longitudina 2 tion of geometry of the load. Basic 2 on system ystem operation 2 s, including g, solver, macros 2 affic control at
14Y1PG Basic formats of graph level scope) using layer 14Y1P2 Overview of CAx applismodification (attributes section). Basics of 3D 18Y1PS Principles and overviet from other CAE system tasks of structural and 14Y1Pl Data-information-know (personalistic, product state information system 14Y1PZ Students will be familial addressing, error determined data analysis. Example 21Y1PC Air traffic control proceed the airports and low volume 12Y1PD Assessment of transports	Computer Graphics lic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with eders, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics cards. Computer Aid of Transportation Projecting 2 cation for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, s, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transmodelling. Computer Simulations in Mechanics wo for transportation of structures. Numerical methods in mechanics, finite element method. Geometric model developms. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary conditions modal analysis. Introduction to complex nonlinear problems. Corporate Information System Vedge, components of information system, syntatic and semantic sense of data, structure of corporate information system, paion, storage, etc.), corporate information politic and information control, risks of information system operation, legal environments, information system security, data protection, safety politics. Advanced Data Processing in Spreadsheets are with principles of working in a spreadsheet. Graphic layout of the table appearance, formatting of numbers, insertion of form cition. Working with large spreadsheets, filters, advanced filters, database functions. Pivot tables and charts, conditional formatting and questions from various companies and training. ATC Procedures and Activities advanced Data Process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibilities of structures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibilities.	KZ ment and adapta and application of information of solution function on g, solution finding KZ met discusses air tree infrastructure. KZ mes of its protection	2 Advanced blocks -and longitudina 2 tion of geometry of the load. Basic 2 on system ystem operation 2 s, including g, solver, macros 2 affic control at
14Y1PG Basic formats of graph level scope) using layer 14Y1P2 Overview of CAx applismodification (attributes section). Basics of 3D 18Y1PS Principles and overviet from other CAE system tasks of structural and 14Y1Pl Data-information-know (personalistic, product state information system 14Y1PZ Students will be familial addressing, error determination and traffic control proceed that an analysis. Example 21Y1PC Air traffic control proceed the airports and low volume 12Y1PD Assessment of transport transport structures of	Computer Graphics lic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with eders, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics cards. Computer Aid of Transportation Projecting 2 cation for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, s, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transmodelling. Computer Simulations in Mechanics were tools for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model developms. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary conditions modal analysis. Introduction to complex nonlinear problems. Corporate Information System Vedge, components of information system, syntatic and semantic sense of data, structure of corporate information system, pa ion, storage, etc.), corporate information politic and information control, risks of information system operation, legal environments, information system security, data protection, safety politics. Advanced Data Processing in Spreadsheets are diplications and training. Advanced Storage spreadsheets, filters, advanced filters, database functions. Pivot tables and charts, conditional formattines and questions from various companies and training. ATC Procedures and Activities edures, basics of communication and phraseology, aircraft identification, spacing and traffic coordination. In addition, the cours sibility operational procedures. Students will during the course learn basic safety management applications applied across the Assessment of Transport Structures	KZ ment and adapta and application of information of solution function on g, solution finding KZ met discusses air tree infrastructure. KZ mes of its protection	2 Advanced blocks -and longitudina 2 tion of geometry of the load. Basic 2 on system ystem operation 2 s, including g, solver, macros 2 affic control at 2 and assessmen
14Y1PG Basic formats of grapl level scope) using layer 14Y1P2 Overview of CAx applis modification (attribute: section). Basics of 3D 18Y1PS Principles and overviet from other CAE system tasks of structural and 14Y1Pl Data-information-know (personalistic, product state information system 14Y1PZ Students will be familial addressing, error determined data analysis. Example 21Y1PC Air traffic control proceed the airports and low volume 12Y1PD Assessment of transport transport structures on the environment.	Computer Graphics ic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with editing and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with editing and possibilities of digital photography, scanning and computer technology like monitors and graphics cards. Computer Aid of Transportation Projecting 2 cation for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, scripting, scripting). In the projecting group, external references. Basic tasks for cummunication projecting (clotoidic transmodelling). Computer Simulations in Mechanics of tools for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model developms. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary conditions modal analysis. Introduction to complex nonlinear problems. Corporate Information System Indedge, components of information system, syntatic and semantic sense of data, structure of corporate information system, paion, storage, etc.), corporate information politic and information control, risks of information system operation, legal environments, information system security, data protection, safety politics. Advanced Data Processing in Spreadsheets are with principles of working in a spreadsheet. Graphic layout of the table appearance, formatting of numbers, insertion of formations. Working with large spreadsheets, filters, advanced filters, database functions. Pivot tables and charts, conditional formatting and questions from various companies and training. ATC Procedures and Activities adures, basics of communication and phraseology, aircraft identification, spacing and traffic coordination. In addition, the cours sibility operational procedures. Students will during the course learn basic safety management applications applied ac	KZ ment and adapta and application of information on g, solution finding KZ meter discusses air tree infrastructure. KZ mess of its protection of assessment of tree.	2 Advanced blocks -and longitudina 2 tion of geometry of the load. Basic 2 on system ystem operation 2 s, including g, solver, macros 2 affic control at 2 and assessmen affic buildings or
14Y1PG Basic formats of grapl level scope) using layer 14Y1P2 Overview of CAx applis modification (attribute: section). Basics of 3D 18Y1PS Principles and overviet from other CAE system tasks of structural and 14Y1Pl Data-information-know (personalistic, product state information system 14Y1PZ Students will be familial addressing, error determined data analysis. Example 21Y1PC Air traffic control proceed the airports and low voman 12Y1PD Assessment of transport transport structures on the environment.	Computer Graphics ic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with editing, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics cards. Computer Aid of Transportation Projecting 2 cation for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, s, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic trans modelling. Computer Simulations in Mechanics w of tools for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model developms. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary conditions modal analysis. Introduction to complex nonlinear problems. Corporate Information System ledge, components of information system, syntatic and semantic sense of data, structure of corporate information system, pa ion, storage, etc.), corporate information politic and information control, risks of information system operation, legal environments, information system security, data protection, safety politics. Advanced Data Processing in Spreadsheets are with principles of working in a spreadsheet. Graphic layout of the table appearance, formatting of numbers, insertion of form circlin. Working with large spreadsheets, filters, advanced filters, database functions. Pivot tables and charts, conditional formattines and questions from various companies and training. ATC Procedures and Activities dures, basics of communication and phraseology, aircraft identification, spacing and traffic coordination. In addition, the cours sibility operational procedures. Students will during the course learn basic safety management applications applied across the Assessment of Transport Structures Assessment of Transport Structures the landscape. Rating fragmentation and land	KZ ment and adaptate and application of information in finding solution finding sees of its protection fassessment of tr	2 Advanced blocks -and longitudina 2 tion of geometry of the load. Basic 2 on system ystem operation 2 s, including g, solver, macros 2 affic control at 2 and assessmen affic buildings or
14Y1PG Basic formats of graph level scope) using layer 14Y1P2 Overview of CAx applis modification (attribute: section). Basics of 3D 18Y1PS Principles and overviet from other CAE system tasks of structural and 14Y1Pl Data-information-know (personalistic, product state information system 14Y1PZ Students will be familial addressing, error determined data analysis. Example 21Y1PC Air traffic control proceed the airports and low vortice 12Y1PD Assessment of transport transport structures of the environment. 20Y1PK General principles of degree of the structure of the structure of the environment.	Computer Graphics ic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with editing and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with editing and possibilities of digital photography, scanning and computer technology like monitors and graphics cards. Computer Aid of Transportation Projecting 2 cation for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, scripting, scripting). In the projecting group, external references. Basic tasks for cummunication projecting (clotoidic transmodelling). Computer Simulations in Mechanics of tools for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model developms. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary conditions modal analysis. Introduction to complex nonlinear problems. Corporate Information System Indedge, components of information system, syntatic and semantic sense of data, structure of corporate information system, paion, storage, etc.), corporate information politic and information control, risks of information system operation, legal environments, information system security, data protection, safety politics. Advanced Data Processing in Spreadsheets are with principles of working in a spreadsheet. Graphic layout of the table appearance, formatting of numbers, insertion of formations. Working with large spreadsheets, filters, advanced filters, database functions. Pivot tables and charts, conditional formatting and questions from various companies and training. ATC Procedures and Activities adures, basics of communication and phraseology, aircraft identification, spacing and traffic coordination. In addition, the cours sibility operational procedures. Students will during the course learn basic safety management applications applied ac	KZ and application of the processes, system of transport	2 Advanced blocks -and longitudina 2 tion of geometry of the load. Basic 2 on system yestem operation 2 s, including g, solver, macros 2 affic control at 2 and assessmen affic buildings or

14Y1PJ C Programming Language	KZ	2
C programming language. Preprocessor, basics of the C language (data types, syntax, commands), functions, pointes, dynamical memory allocation,	string, files, structi	ures and unions.
Implementations of abstract data types (FIFO, LIFO, list), programming techniques (sorting, searching, recursion), using bitwise oprerators.	147	
12Y1C1 Designing Roads in Civil 3D I	KZ	2
The course is devoted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through particular linear building, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. T	-	-
explanation of the traffic building design in the real-life profession.	ne course also me	ducs a basic
12Y1C2 Designing Roads in Civil 3D II	KZ	2
The course is devoted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through	1	-
particular linear building, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. T	he previously acqu	ired skills are
improved and developed. Students learn to design intersections.		
14Y1PA 3D Modeling in AutoCAD	KZ	2
Work in 3D non-parametric modeller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup creation, objects, user se	ect data creation, w	ork with data
connected with external database. Basic definition of work with lights, materials and reflexes. Models presentation.	1/7	
16Y1PV Operation, Construction and Maintenance of Vehicles Methods of vehicle production, Vehicle projection Meintenance and repoir place. Engine projection project	KZ	2
Methods of vehicle production. Vehicle maintenance. Vehicle diagnostics. Maintenence and repair plans. Engine maintenance and emission measur General principles of engine diagnostics.	ement. Iransmissi	on mechanism.
21Y1PA Air Traffic Control Operating Procedures	KZ	2
Practical exercises on the ATC simulator with the following focus - getting familiar with the simulation environment, acquiring basic habits, aircraft ide	1	
level changes, ATC clearance, use of RNAV points. Practical exercises focused on the basis of vectoring, timely application of vertical spacing, EST		_
Exercises in the APPROACH airspace, arrivals, departures and conflict solutions.		
12Y1PU Organization Disposition of Railway Stations	KZ	2
Connecting station. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Z		ation yards.
Reserve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic railway		
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	ucture maintenand	e, scheduling
and organising possesions, preparation of railway lines reconstruction and maintenance, process of railway line reconstruction. 16Y1RE Control and Electronic Vehicle Systems	KZ	2
16Y1RE Control and Electronic Vehicle Systems Elementary concepts of regulation. Tools for analytical solution, linear system description. Basic types of a regulator (PID), properties, advantages, disa	1	
and hybrid drive control. Electric drive. Vehicle communication bus (CAN, LIN, FlexRay, ISObus, KWP2000 protocole etc.). Vehicle electronic control	-	
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	ement. Internal an	d external
environment of human resource management. Human resource planning. Search, recruitment and selection of employees. Motivation, evaluation and	d remuneration of s	taff. Positioning,
dismissal and redundancies of employees. Education of employees. Planning career management.	1	
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 prod determine the quantity and capacity of production, plan budgets for marketing, research and development. They become familiar with the conseque		•
of financial corporate reports and they use this information for other business decisions.	rices of their decis	ons by the form
21Y1SI ATC Simulator	KZ	2
Familiarization with the simulation environment, acquiring basic habits, aircraft identification procedures, vectoring, level changes, ATC clearance, u	1 1	
exercises focusing on basic vectoring, early application of vertical separation, EST and REV message passing. Practical exercises in the APPROAC	CH area, practicing	arrival and
departure management procedures, conflict resolution.		
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	rs of mechanical, e	lectro-magnetic,
state (temperature, humidity), chemical and particle flow values. Electrical, pneumatic and hydraulic actuators and solid phase elements.		
477/40L	1/7	
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,	1	
Human resources and their importance, work group as a special kind of social group, communication, personal management, modern management, of the organization.	human resources p	planning, culture
Human resources and their importance, work group as a special kind of social group, communication, personal management, modern management, of the organization. 11Y1SI Transportation Software Engineering	human resources r	planning, culture
Human resources and their importance, work group as a special kind of social group, communication, personal management, modern management, of the organization.	human resources r	planning, culture
Human resources and their importance, work group as a special kind of social group, communication, personal management, modern management, of the organization. 11Y1SI Transportation Software Engineering Basic concepts of software engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and imple	human resources r	planning, culture
Human resources and their importance, work group as a special kind of social group, communication, personal management, modern management, of the organization. 11Y1SI Transportation Software Engineering Basic concepts of software engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and imple and practical usuage. 16Y1KS Quality and Reliability of Vehicles Quality and reliability theory in design, development, production and operation of vehicles. Definition and possible approach to quality and reliability.	KZ mentation using fo KZ Key legislation. FN	olanning, culture 2 rmal techniques 2 MEA (Failure
Human resources and their importance, work group as a special kind of social group, communication, personal management, modern management, of the organization. 11Y1SI Transportation Software Engineering Basic concepts of software engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and imple and practical usuage. 16Y1KS Quality and Reliability of Vehicles 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	KZ mentation using fo KZ Key legislation. FN	olanning, culture 2 rmal techniques 2 MEA (Failure
Human resources and their importance, work group as a special kind of social group, communication, personal management, modern management, of the organization. 11Y1SI Transportation Software Engineering Basic concepts of software engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and imple and practical usuage. 16Y1KS Quality and Reliability of Vehicles 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 Knowledge-based systems of quality and reliability, data collection.	KZ mentation using fo KZ Key legislation. FN s used in industria	olanning, culture 2 rmal techniques 2 MEA (Failure I applications.
Human resources and their importance, work group as a special kind of social group, communication, personal management, modern management, of the organization. 11Y1SI Transportation Software Engineering Basic concepts of software engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and imple and practical usuage. 16Y1KS Quality and Reliability of Vehicles 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 Knowledge-based systems of quality and reliability, data collection. 12Y1SU Road Management and Maintenance	KZ ementation using fo KZ Key legislation. FN s used in industria	2 rmal techniques 2 AEA (Failure I applications.
Human resources and their importance, work group as a special kind of social group, communication, personal management, modern management, of the organization. 11Y1SI Transportation Software Engineering Basic concepts of software engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and imple and practical usuage. 16Y1KS Quality and Reliability of Vehicles 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 Knowledge-based systems of quality and reliability, data collection. 12Y1SU Road Management and Maintenance 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.	KZ ementation using for KZ Key legislation. Fits used in industrial KZ KZ KZ Key legislation Fits the KZ KZ Dependent of road net	planning, culture 2 rmal techniques 2 MEA (Failure I applications. 2 work, short,
Human resources and their importance, work group as a special kind of social group, communication, personal management, modern management, of the organization. 11Y1SI Transportation Software Engineering Basic concepts of software engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and imple and practical usuage. 16Y1KS Quality and Reliability of Vehicles 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 Knowledge-based systems of quality and reliability, data collection. 12Y1SU Road Management and Maintenance 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 strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and respective contents and summer.	KZ ementation using for KZ Key legislation. Fits used in industrial KZ KZ KZ Key legislation Fits the KZ KZ Dependent of road net	planning, culture 2 rmal techniques 2 MEA (Failure I applications. 2 work, short,
Human resources and their importance, work group as a special kind of social group, communication, personal management, modern management, of the organization. 11Y1SI Transportation Software Engineering Basic concepts of software engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and imple and practical usuage. 16Y1KS Quality and Reliability of Vehicles 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 Knowledge-based systems of quality and reliability, data collection. 12Y1SU Road Management and Maintenance 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 strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and reclassroom as well as investment activity in highway engineering.	KZ ementation using for KZ Key legislation. Fit is used in industrial KZ Dependent of road net epair methods are	planning, culture 2 rmal techniques 2 MEA (Failure I applications. 2 work, short,
Human resources and their importance, work group as a special kind of social group, communication, personal management, modern management, of the organization. 11Y1SI Transportation Software Engineering Basic concepts of software engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and imple and practical usuage. 16Y1KS Quality and Reliability of Vehicles 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 Knowledge-based systems of quality and reliability, data collection. 12Y1SU Road Management and Maintenance 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 strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and respective contents and summer.	KZ Ementation using for KZ Key legislation. Fit is used in industrial KZ Dependent of road net epair methods are	planning, culture 2 rmal techniques 2 MEA (Failure I applications. 2 work, short, discussed in the
Human resources and their importance, work group as a special kind of social group, communication, personal management, modern management, of the organization. 11Y1SI Transportation Software Engineering Basic concepts of software engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and imple and practical usuage. 16Y1KS Quality and Reliability of Vehicles Quality and reliability every 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 Knowledge-based systems of quality and reliability, data collection. 12Y1SU Road Management and Maintenance 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 strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and reclassroom as well as investment activity in highway engineering. 16Y1SO Strategy and innovation in mobility	KZ Ementation using for KZ Key legislation. Fit is used in industrial KZ Dependent of road net epair methods are KZ KZ KZ Anovation project, in the control of the contr	planning, culture 2 rmal techniques 2 MEA (Failure I applications. 2 work, short, discussed in the 2 KPIs, budget;
Human resources and their importance, work group as a special kind of social group, communication, personal management, modern management, of the organization. 11Y1SI Transportation Software Engineering Basic concepts of software engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and impleand practical usuage. 16Y1KS Quality and Reliability of Vehicles 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 Knowledge-based systems of quality and reliability, data collection. 12Y1SU Road Management and Maintenance 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 strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and reclassroom as well as investment activity in highway engineering. 16Y1SO Strategy and innovation in mobility Introduction to innovation, definition. Innovation strategy. Innovation life cycle and ecosystem, main sources and funding opportunities. Successful in co-financing, evaluation. Sprint method and its use. Innovative business model - main patterns and examples, design, strategy, processes and outloof use). Creating an innovation strategy. Customer and value map, design and testing.	KZ ementation using for KZ Key legislation. Fit Is used in industrial KZ copment of road net epair methods are KZ conovation project, Fook (business plan	planning, culture 2 rmal techniques 2 MEA (Failure I applications. 2 work, short, discussed in the 2 KPIs, budget; and possibilities
Human resources and their importance, work group as a special kind of social group, communication, personal management, modern management, of the organization. 11Y1SI Transportation Software Engineering Basic concepts of software engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and impleated practical usuage. 16Y1KS Quality and Reliability of Vehicles 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 Knowledge-based systems of quality and reliability, data collection. 12Y1SU Road Management and Maintenance 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 strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and reclassroom as well as investment activity in highway engineering. 16Y1SO Strategy and innovation in mobility Introduction to innovation, definition. Innovation strategy. Innovative business model - main patterns and examples, design, strategy, processes and outloof use). Creating an innovation strategy. Customer and value map, design and testing. 17Y1SK Urban and Regional Rail Transport Systems	KZ ementation using for KZ Key legislation. FN is used in industrial KZ expense of road net epair methods are KZ innovation project, Nok (business plan	planning, culture 2 rmal techniques 2 MEA (Failure I applications. 2 work, short, discussed in the 2 KPIs, budget; and possibilities 2
Human resources and their importance, work group as a special kind of social group, communication, personal management, modern management, of the organization. 11Y1SI Transportation Software Engineering Basic concepts of software engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and impleand practical usuage. 16Y1KS Quality and Reliability of Vehicles 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 Knowledge-based systems of quality and reliability, data collection. 12Y1SU Road Management and Maintenance 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 develonedium and long-term strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and reclassroom as well as investment activity in highway engineering. 16Y1SO Strategy and innovation in mobility Introduction to innovation, definition. Innovation strategy. Innovative business model - main patterns and examples, design, strategy, processes and outloof use). Creating an innovation strategy. Customer and value map, design and testing. 17Y1SK Urban and Regional Rail Transport Systems Factors affecting transport demand, modal-split, distribution of passenger flows on public regional transport lines. Optimization of line management,	KZ ementation using for KZ Key legislation. FN is used in industrial KZ expense of road net epair methods are KZ innovation project, Nok (business plan KZ line networking. C	planning, culture 2 rmal techniques 2 MEA (Failure I applications. 2 work, short, discussed in the 2 KPIs, budget; and possibilities 2 reating and
Human resources and their importance, work group as a special kind of social group, communication, personal management, modern management, of the organization. 11Y1SI Transportation Software Engineering Basic concepts of software engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and impleated and practical usuage. 16Y1KS Quality and Reliability of Vehicles 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 Knowledge-based systems of quality and reliability, data collection. 12Y1SU Road Management and Maintenance 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 develor medium and long-term strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and reclassroom as well as investment activity in highway engineering. 16Y1SO Strategy and innovation in mobility Introduction to innovation, definition. Innovation strategy. Innovation life cycle and ecosystem, main sources and funding opportunities. Successful in co-financing, evaluation. Sprint method and its use. Innovative business model - main patterns and examples, design, strategy, processes and outlo of use). Creating an innovation strategy. Customer and value map, design and testing. 17Y1SK Urban and Regional Rail Transport Systems 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 transport.	KZ ementation using for KZ Key legislation. FN is used in industrial KZ expense of road net epair methods are KZ innovation project, Nok (business plan KZ line networking. C	planning, culture 2 rmal techniques 2 MEA (Failure I applications. 2 work, short, discussed in the 2 KPIs, budget; and possibilities 2 reating and
Human resources and their importance, work group as a special kind of social group, communication, personal management, modern management, of the organization. 11Y1SI Transportation Software Engineering Basic concepts of software engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and impleated practical usuage. 16Y1KS Quality and Reliability of Vehicles Quality and reliability theory in design, development, production and operation of vehicles. Definition and possible approach to quality and reliability. Mode and Effects Analysis), OFD (Quality Function Deployment), DFx (Design for Assamly, Manufacturying, Quality, Services) and other method Knowledge-based systems of quality and reliability, data collection. 12Y1SU Road Management and Maintenance 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 strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and reclassroom as well as investment activity in highway engineering. 16Y1SO Strategy and innovation in mobility Introduction to innovation, definition. Innovation strategy. Innovative business model - main patterns and examples, design, strategy, processes and outloof use). Creating an innovation strategy. Customer and value map, design and testing. 17Y1SK Urban and Regional Rail Transport Systems 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 transparketing.	KZ ementation using for KZ Key legislation. FN is used in industrial KZ expense of road net epair methods are KZ expense of KZ e	planning, culture 2 rmal techniques 2 MEA (Failure I applications. 2 work, short, discussed in the 2 KPIs, budget; and possibilities 2 reating and the role of
Human resources and their importance, work group as a special kind of social group, communication, personal management, modern management, of the organization. 11Y1SI Transportation Software Engineering Basic concepts of software engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and imple and practical usuage. 16Y1KS Quality and Reliability of Vehicles 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 Knowledge-based systems of quality and reliability, data collection. 12Y1SU Road Management and Maintenance 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 develor medium and long-term strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and reclassroom as well as investment activity in highway engineering. 16Y1SO Strategy and innovation in mobility Introduction to innovation, definition. Innovation strategy. Innovative business model - main patterns and examples, design, strategy, processes and outloof use). Creating an innovation strategy. Customer and value map, design and testing. 17Y1SK Urban and Regional Rail Transport Systems 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 transportal demand. 21Y1TH Aircraft Technical Handling	KZ ementation using for KZ Key legislation. FN is used in industrial KZ expense of road net experiment of the control of	planning, culture 2 rmal techniques 2 MEA (Failure I applications. 2 work, short, discussed in the 2 KPIs, budget; and possibilities 2 reating and he role of
Human resources and their importance, work group as a special kind of social group, communication, personal management, modern management, of the organization. 11Y1SI Transportation Software Engineering Basic concepts of software engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and impleated practical usuage. 16Y1KS Quality and Reliability of Vehicles Quality and reliability theory in design, development, production and operation of vehicles. Definition and possible approach to quality and reliability. Mode and Effects Analysis), OFD (Quality Function Deployment), DFx (Design for Assamly, Manufacturying, Quality, Services) and other method Knowledge-based systems of quality and reliability, data collection. 12Y1SU Road Management and Maintenance 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 strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and reclassroom as well as investment activity in highway engineering. 16Y1SO Strategy and innovation in mobility Introduction to innovation, definition. Innovation strategy. Innovative business model - main patterns and examples, design, strategy, processes and outloof use). Creating an innovation strategy. Customer and value map, design and testing. 17Y1SK Urban and Regional Rail Transport Systems 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 transparketing.	KZ Ementation using for KZ Key legislation. FN is used in industrial KZ Expensive for solution in the second solut	planning, culture 2 rmal techniques 2 MEA (Failure I applications. 2 work, short, discussed in the 2 KPIs, budget; and possibilities 2 reating and he role of

11Y1TG	Graph Theory	KZ	2
	minology of graph theory, graph representation. Problems of graph theory, problem instance. Graph search algorithms, trees,		-
	path, bipartite graph matching, flow networks, circulations, critical path method, traveling salesman problem. Problem of existen utational complexity, dealing with NP-complete problems, heuristic approach.	ce and optimization	n and algorithms
23Y1TP	Criminal Law in IT and Transportation	KZ	2
_	law into legal order, conception of culpability and criminal delict, consequency of other legal standards. international treaty as	1	
	f criminal court cases, practical examples.	·	Ū
14Y1TI	Creating Interactive Internet Applications	KZ	2
, ,	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.	Aircraft Maintenance	KZ	2
	Allician Maintenance technical operations. Maintenance and work processes. Defects search methods, status check diagnostic tools. Selection and	1	
	or maintenance. Optimization of time maintenance intervals. Regulation no. 1321/2014 Part 145. Human factors of aircraft ma	•	
EASA for aircraft maint	enance. Seminars will be focused on practical application.		
14Y1UP	Editing of Theses in MS Word	KZ	2
	iced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, cre etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamles		
-	concentrate mainly on writing a thesis.	s editing dissertati	ions and meses,
18Y1UK	Introduction of Rail Vehicles	KZ	2
Basic characteristics ar	nd parameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion	train and unit train	ns. Rolling and
	unning resistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehic	le - hydromechani	c, hydrodynamic
	gn concept rail vehicles and drive of wheel set.	1/7	
12Y1VR	Public Transport in Cities and Regions al pillars of public transport. Accessibility of public transport. Transport demand management and directional coordination of l	KZ	2 line tracing
	at plitars of public transport. Accessionity of public transport, framsport demand management and directional coordination of leters and transport variations. Types of lines according to their routing and basic operating parameters. Time coordination of I	· ·	- 1
	peration in Prague. Tram safety.		
23Y1VS	Negotiation and Cooperation	KZ	2
	gotiation. The influence of personality traits on the negotiations. Negotiation and commanding. Teamwork. Variants teams. Info		
I	n, the essence of negotiation, the differences in negotiation in business and in crisis situations, the principle of "win both", spe	ecifications and bid	dding, the role of
trust. 14Y1VM	Development of Applications for Mobile Devices	KZ	2
	nming, Java programming language, development environment, operating system Android, development application - widget		
permissions, services,		,	
16Y1VT	Development in Railroad Vehicles	KZ	2
	on. Railroad vehicle parametres regulation. Control and driving of railroad vehicles. Importance in heavy duty and personal tra	ansportation. Critic	cal situation
14Y1WG	ials in design. International standardization.	KZ	2
_	Webdesign basics of HTTP communication, URL and addressing, HTML5 markup language, advanced CSS3 techniques, accessible an	1	
	nagement systems, web server installation + configuration directives. The subject matter will be trained on examples.		s, .cop cc.vc
14Y1W1	Webdesign 1	KZ	2
	pasics of communication HTTP, URL and addressing, markup languages HTML and XHTML, HTML tags, rules of web accessing		
	e of web browsers, creating one to three column layout pages, sites validation, conditional comments. Topics will be practiced	1	
14Y1W2	Webdesign 2 anced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, web	KZ	2
	e practiced on practical examples.	server iristaliation	1 + comiguration
16Y1ZG	Introduction into Applied Computer Graphics	KZ	2
	ision and applications with emphasis on transport, including development and research. Colours, colour perception, colour so	1 1	orinciples of 2D
	mentary algorithms for graphic data workout. Visualisation principles and tasks, technics, graphics and visualisation HW basi	cs. Introduction to	2D and 3D
graphics software.	For demonstrate of a consecutive and a deather an end the	1/7	0
14Y1ZM	Fundamentals of parametric and adaptive modeling lcts and parts creation. Sketch drawing by help of geometric relations, parametric dimensions, creation of adaptive models fro	KZ	2
· ·	stems. Fundamentals of assemblies creation.	ATT ZD SKCtories. III	inport and export
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, i	matrices and elem	ents operations,
	outputs, graphics, optimization and program code debugging.		
14Y1ZJ	Fundamentals of programming in JAVA	KZ	2
	SE Platform. IDE Installation and First Project. Comments. Variables and Type System. Operators. User Input and Parsing. Coal Methods. Terms. Relational Operators and Switches. Cycles for, while, foreach. Field - declaration, initialization, methods fo		
	e, recursion. Program creation.		
12Y1ZU	Principles of Urbanism	KZ	2
1 - 1	and settlement building. Functional components and their mutual relations (working, living, recreation, transportation). Space	cial arrangement o	f settlements.
	with a certain prevailing function, forms of their development. Brief overview of land-use planning.	1	_
15Y1ZV	East-West dichotomy: Prelude to the Cold War	KZ	2
	lution of the "West" and "East" from the 1500s. Focus on the history in the period between 1850 nad 1950. Milestones and con Iry and the beginning of the 20th century. Revolutions, the causes and consequences. Scientific and technological progress,	•	
	In history. Social changes. Discussions on texts, sources.	and dauges and CC	mooquemoes.
16Y1ZL	Vehicle Testing, Legislation and Construction	KZ	2
	ike costruction, aggregate computing, driving resistance, build and parameters of traction, constructional arrangement of person		

Name of the block: Elective courses
Minimal number of credits of the block: 0

legislation in the EU and in the world, technical legislation creation, testing methods, vehicle tests, accelerated tests, mathematical modelling in testing.

The role of the block: V

Code of the group: VP-BP-TET-20/21

Name of the group: Bachelor Full-Time TET voluntary

Requirement credits in the group: Requirement courses in the group:

Credits in the group: 0 Note on the group:

	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their					
Code	members)	Completion	Credits	Scope	Semester	Role
	Tutors, authors and guarantors (gar.)					
14DPK	Digital Support for Designing of Roads and Highways Drahomír Schmidt, Libor Žídek Drahomír Schmidt Drahomír Schmidt (Gar.)	Z	0	0P+2C	Z	V
14DZT	Digital Support for Railway Lines Martin Brumovský Martin Brumovský (Gar.)	Z	0	0P+2C	L	V
11SCFZ	Seminar of Physics Old ich Hykš, Jana Kuklová, Zuzana Malá, Tomáš Vít Zuzana Malá Zuzana Malá (Gar.)	Z	0	0P+2C	Z	٧
21SLD	Seminar of Air Transport Jakub Kraus, Vladimír Plos, Natalia Guskova Vladimír Plos	Z	0	0P+2C	L	V
18SPP	Seminary from Elasticity and Strength Jan Vy ichl, Tomáš Doktor Jan Vy ichl Jan Vy ichl (Gar.)	Z	0	0P+2C	Z	V
18STD	Seminary from Technical Documentation	Z	0	0P+2C	Z	V
18SS	Seminary from Structural Analysis Jan Vy ichi	Z	0	0P+2C	L	V
11SSF	Secondary School Physics Course Zuzana Malá Zuzana Malá Zuzana Malá (Gar.)	Z	0	0P+2C	L	V
TVKLV	Physical Education Course	Z	0	7dní	L	V
TVKZV	Physical Education Course	Z	0	7dní	Z	V

Characteristics of the courses of this group of Study Plan: Code=VP-BP-TET-20/21 Name=Bachelor Full-Time TET voluntary

	in the courses of this group of olddy Flan. Code-VI-DI-TET-20/21 Name-Dachelof Full-Till	10 1 = 1 TOTALIT	
14DPK	Digital Support for Designing of Roads and Highways	Z	0
Seminars possibilities	of technical processing problems focused on designing of roads and highways.		
14DZT	Digital Support for Railway Lines	Z	0
Seminars possibilities	of technical processing problems solved in the field of railway lines.	<u>'</u>	'
11SCFZ	Seminar of Physics	Z	0
Solving problems on	kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermodynamics.		'
21SLD	Seminar of Air Transport	Z	0
History, definitions, te	rminology, basic rules. VFR / IFR. Basics of aerodynamics. Propulsion of aircraft. Aircraft design. Basics of navigation, radio n	avigation. Weight, I	balance,
performance. Flight p	anning, optimization of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic	management, grou	und handling,
security. Air crew. Airl	nes and economics. Space technologies.		
18SPP	Seminary from Elasticity and Strength	Z	0
Excersise for practice	. Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of b	eam. Analysis of o	leflection curve
of beam. Torsion of ci	rcle cross section. Combined loading. Stability of compressed bar and buckling.		
18STD	Seminary from Technical Documentation	Z	0
Technical standards,	nternational standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensic	nal and geometric	al accuracy,
arrangement of drawi	ng sheets.		
18SS	Seminary from Structural Analysis	Z	0
Examples for practise	General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam	and simple frame	work. Application
of principle of virtual	vorks for calculation of reactions of staticaly determinate systems. Determination of axial forces in truss construction - method	of joints and meth	nod of sections.
Geometry of cross se	ctions. Plane fiber polygons.		
11SSF	Secondary School Physics Course	Z	0
Basics of kinematics,	dynamics, thermodynamics, electric field and magnetic field.	•	·
TVKLV	Physical Education Course	Z	0
TVKZV	Physical Education Course	Z	0

Code of the group: VP-BP-TET-DOS

Name of the group: Bachelor Full-Time TET-DOS voluntary

Requirement credits in the group: Requirement courses in the group:

Credits in the group: 0 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
11SEMO	Seminar of Electromagnetic Field and Optics Old ich Hykš, Zuzana Malá, Tomáš Vít Zuzana Malá Zuzana Malá (Gar.)	Z	0	0P+2C	L	V

Characteristics of the courses of this group of Study Plan: Code=VP-BP-TET-DOS Name=Bachelor Full-Time TET-DOS voluntary

11SEMO Seminar of Electromagnetic Field and Optics Z O Solving problems on electric and magnetic field, electromagnetic field, optics and basics of solid-state physics.

Name of the block: Jazyky

Minimal number of credits of the block: 6

The role of the block: J

Code of the group: JZ-BP-TET-22/23

Name of the group: Bachelor TET (ex LED) 2nd Language Courses from 2022/23

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:

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

Characteristics of the courses of this group of Study Plan: Code=JZ-BP-TET-22/23 Name=Bachelor TET (ex LED) 2nd Language Courses from 2022/23

15JZ3F	Foreign Language - French 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	of language struct	ure knowledge
and perceptive and com	ımunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Woı	rk with (profession	nal) text and its
features. Practice of ora	I and written presentation.		
15JZ3I	Foreign Language - Italian 3	Z	3
Grammar and stylistics.	Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of	of language struct	ure knowledge
and perceptive and com	ımunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Woı	rk with (profession	nal) text and its
features. Practice of ora	I 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	of language struct	ure knowledge
and perceptive and com	ımunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Woı	rk with (profession	nal) text and its
features. Practice of ora	I and written presentation.		
15JZ3R	Foreign Language - Russian 3	Ζ	3
Grammar and stylistics.	Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of	of language struct	ure knowledge
and perceptive and com	ımunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Wo	rk with (profession	nal) text and its
features. Practice of ora	I 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 struct	ure knowledge
and perceptive and com	ımunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Wo	rk with (profession	nal) text and its
features. Practice of ora	I and written presentation.		

15JZ4F	Foreign Language - French 4	Z,ZK	3
		1 ' 1	•
•	cs. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement	0 0	•
	communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Wo	ork with (profession	al) text and its
features. Practice of	oral and written presentation.		
15JZ4I	Foreign Language - Italian 4	Z,ZK	3
Grammar and stylist	cs. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement	of language structu	ıre knowledge
and perceptive and	communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Wo	ork with (profession	al) text and its
features. Practice of	oral and written presentation.	-	•
15JZ4N	Foreign Language - German 4	Z,ZK	3
Grammar and stylist	cs. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement	of language structu	ıre knowledge
and perceptive and	communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Wo	ork with (profession	al) text and its
	oral and written presentation.	· ·	,
15JZ4R	Foreign Language - Russian 4	Z,ZK	3
Grammar and stylist	cs. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement	of language structu	ıre knowledge
and perceptive and	communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Wo	ork with (profession	al) text and its
features. Practice of	oral and written presentation.	-	•
15JZ4S	Foreign Language - Spanish 4	Z,ZK	3
Grammar and stylist	cs. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement	of language structu	ıre knowledge
and perceptive and	communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Wo	ork with (profession	al) text and its
	oral and written presentation.		•

List of courses of this pass:

Code	Name of the course	Completion	Credits
00Y1XB	Active participation in a scientific project, workshop, short-term trip abroad	KZ	2
11CAL1 Sequence of real nur	Calculus 1 The standing stand	Z,ZK gral, Riemann integr	7 al, imprope
11CAL2	Calculus 2	Z,ZK	5
	differential equations and their systems, differential calculus of functions of several real variables. Riemann integral in Rn. Line and		· ·
11EMOP	Electromagnetic Field and Optics Electric field. Electric current. Magnetic field. Electromagnetic field. Optics. Basics of solid-state physics.	Z,ZK	4
11FYZ k	Physics (inematics, dynamics, Newton's laws, force fields, mechanics of continuum, thermodynamics, introduction to electrostatics and elec	Z,ZK ctric current.	5
11GIE	Geometry	KZ	3
	ry of curves - parameterization, the arc of the curve, torsion and curvature, Frenet's trihedron. Kinematics - a curve as a trajectory acceleration of a particle moving on a curved path.	,	
11LA	Linear Algebra	Z,ZK	3
	r combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and the their applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classifications.	tion.	ninants an
11MDSD	Collecting and Processing of Traffic Data	KZ	3
	oles of traffic detection and data collection, specific problems of the field of traffic data. Data preprocessing and analysis for use in	additional application	ns.
11MSP	Modeling of Systems and Processes em, external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of differ	Z,ZK	4
11SCFZ	Discretization of continuous systems. System interconnection. Seminar of Physics	Z	0
	Solving problems on kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermod	-	
11SEMO	Seminar of Electromagnetic Field and Optics Solving problems on electric and magnetic field, electromagnetic field, optics and basics of solid-state physics.	Z	0
11SSF	Secondary School Physics Course Basics of kinematics, dynamics, thermodynamics, electric field and magnetic field.	Z	0
			4
11STAT	Statistics	Z,ZK	
1	Statistics y Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Parame Regression and correlation analysis		•
1	y Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Parameters		•
Basics of probabilit	y Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Parame Regression and correlation analysis	z,ZK	netric tests
Basics of probabilit	y Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Parame Regression and correlation analysis Graph Theory and its Applications in Transport	Z,ZK other scientific disc	netric tests
Basics of probabilit 11TGA Basic terms of	y Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Parame Regression and correlation analysis 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	z,ZK other scientific disc	netric tests 4 plines.
11TGA Basic terms of 11X31D	y Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Parame Regression and correlation analysis 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 Project 1 DOS	Z,ZK other scientific disc	4 plines.
11TGA Basic terms of 11X31D 11X32D	y Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Parame Regression and correlation analysis 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 Project 1 DOS Project 2 DOS	Z,ZK other scientific disc	4 plines.
11TGA Basic terms of 11X31D 11X32D 11X33D 11Y1BK	y Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Parame Regression and correlation analysis 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 Project 1 DOS Project 2 DOS Project 3 DOS	Z,ZK other scientific disc Z Z Z KZ detection of transmis	4 plines. 2 2 4
11TGA Basic terms of 11X31D 11X32D 11X33D 11Y1BK	y Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Parame Regression and correlation analysis 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 Project 1 DOS Project 2 DOS Project 2 DOS Project 3 DOS Error Detection Codes for Interlocking Systems and methods for its assuring. Safety codes linear codes, cyclic codes, BCH codes, Reed-Solomon codes. Transmission channels, construction and properties Interval estimates Parame Regression and correlation analysis Error Detection problems, design problems on graphs, optimum routing, use of graphs in Project 1 DOS Project 2 DOS Project 2 DOS Error Detection Codes for Interlocking Systems	Z,ZK other scientific disc Z Z Z KZ detection of transmis	4 plines. 2 2 4 2

			1 -
11Y1SI Basic concepts of	Transportation Software Engineering software engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and implementa	KZ	2
Dasie concepts of	and practical usuage.	don doing form	ai teeririiqaes
11Y1TG	Graph Theory	KZ	2
	nd terminology of graph theory, graph representation. Problems of graph theory, problem instance. Graph search algorithms, trees, minim		
path problem, Eule	erian path, bipartite graph matching, flow networks, circulations, critical path method, traveling salesman problem. Problem of existence and for their solving. Computational complexity, dealing with NP-complete problems, heuristic approach.	optimization ai	nd algorithms
11Y1ZM	Foundation of MATLAB Programming	KZ	2
	iciple of algorithmization, flow charts, description of MATLAB environment and its settings, MATLAB help, mathematical operators, matrice		I
	control flow, inputs and outputs, graphics, optimization and program code debugging.		
12DOSI	Traffic Surveys and Simulations	Z,ZK	3
•	ection in road transport. Traffic surveys. Automatic traffic counting. Preparation and implementation of traffic survey. Description of individ		
practical exampl	les from real measurements. Methods of data processing and evaluation. Principles of simulation, SW environment for creating traffic mo procedure, calibration. Processing of a simple transport model based on real data.	deis. Iranic mo	odei design
12MDE	Transport Models and Transport Excesses	Z,ZK	3
Parameters of the	traffic flow and methods for their measurement. Models of the traffic flow, communications load, line and urban systems. Theory of quet		es. Quality of
transport and its	assessment. Statistical characteristics of transport. Transport excesses, their analysis, the causes, identify and minimize the consequent	ces. Improving	of transport
4014400	safety and fluency.	7.71	
12MKOD	City Rail Transport oan rail transport. Tram lines layout and city roads. Tram track geometry parameters. Tram track superstructure. Turnouts and other constr	Z,ZK	5
	ice. Underground and its basic characteristics. Underground nets in the world and undeground history in Prague. Underground track geomet		
	track superstructure and substructure. Underground stations. Suburban rail transport.	, , , , , , , , , , , , , , , , , , , ,	g
12POSD	Assessment of Transport Structures	KZ	3
	orical context, impact and variants, analysis of individual phases of EIA process, SEA, legislative framework in the Czech Republic, EU of		
EU directives, pub	lic participation, process in practice. Methods of assessing the effects of transport structures on the environment. SWOT analysis. Multicrite of transport structures, TUKP method. Risk analysis. Landscape.	eria methods fo	rassessment
12PPOK	Designing Roads, Highways and Motorways	KZ	3
_	ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard s		_
	r stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safety of		
	intersections.		
12PRMK	Urban Road Traffic and Design	Z,ZK	5
Composition of urb	ban road, elements and routes for traffic, pedestrian and cycling transport, projection of intersections, traffic lights and its traffic safety proj	oosal, roundab	outs, calming
		ort	
1201188	of traffic, precaution for blind & partially-sighted, parking, traffic area, induction of traffic, organization and regulation of transposition of Railway Stations		3
12PUSS Connecting stati	of traffic, precaution for blind & partially-sighted, parking, traffic area, induction of traffic, organization and regulation of transport organization Disposition of Railway Stations ion. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zone	KZ	3 ation yards.
Connecting stati	Organization Disposition of Railway Stations	KZ stations. Forma	ation yards.
Connecting stati Rese 12SDK	Organization Disposition of Railway Stations ion. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zone erve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic railways, Motorways and Intersections	KZ stations. Forma ailway network. Z,ZK	ation yards.
Connecting stati Rese 12SDK Roads and motorw	Organization Disposition of Railway Stations ion. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zone erve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic railways, Motorways and Intersections ways network, transport output. Types of direction curves. Hairpin bend. Stopping sight distance and overtaking sight distance. Levels of traf	KZ stations. Forma ailway network. Z,ZK ific service. Des	ation yards. 4 sign elements
Connecting stati Rese 12SDK Roads and motorw	Organization Disposition of Railway Stations ion. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zone erve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic ra Highways, Motorways and Intersections ways network, transport output. Types of direction curves. Hairpin bend. Stopping sight distance and overtaking sight distance. Levels of traffind intersections. Crossroads. Roundabouts. Intersections. Special types of junctions. Capacity of crossroads and intersections. Structure	KZ stations. Forma ailway network. Z,ZK ific service. Des	ation yards. 4 sign elements
Connecting stati Rese 12SDK Roads and motorw of crossroads ar	Organization Disposition of Railway Stations ion. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zone erve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic ra Highways, Motorways and Intersections ways network, transport output. Types of direction curves. Hairpin bend. Stopping sight distance and overtaking sight distance. Levels of traffind intersections. Crossroads. Roundabouts. Intersections. Special types of junctions. Capacity of crossroads and intersections. Structure motorways. Road engineering structures. Assessment of route alternatives.	KZ stations. Forma ailway network. Z,ZK fic service. Des of pavement of	4 dign elements f roads and
Connecting stati Rese 12SDK Roads and motorw of crossroads ar	Organization Disposition of Railway Stations ion. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zone erve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic ra Highways, Motorways and Intersections ways network, transport output. Types of direction curves. Hairpin bend. Stopping sight distance and overtaking sight distance. Levels of traffind intersections. Crossroads. Roundabouts. Intersections. Special types of junctions. Capacity of crossroads and intersections. Structure motorways. Road engineering structures. Assessment of route alternatives. Public Transport	KZ stations. Forma ailway network. Z,ZK fic service. Des of pavement of	4 sign elements f roads and
Connecting stati Reserved 12SDK Roads and motorw of crossroads ar 12VHD Importance of pu	Organization Disposition of Railway Stations ion. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zone erve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic rate Highways, Motorways and Intersections Ways network, transport output. Types of direction curves. Hairpin bend. Stopping sight distance and overtaking sight distance. Levels of traffind intersections. Crossroads. Roundabouts. Intersections. Special types of junctions. Capacity of crossroads and intersections. Structure motorways. Road engineering structures. Assessment of route alternatives. Public Transport ublic transport, transport research, evaluation, planning of lines routes and territory operation, planning of operation conception, planing attention-technology and operation-economically conditions of planning of operation conceptions, planning of operation conception, planing attention to the contraction of the properties of the p	KZ stations. Forma ailway network. Z,ZK fic service. Des of pavement of Z,ZK ation of operation	4 sign elements f roads and 5 on, network
Connecting stati Reserved. 12SDK Roads and motorw of crossroads ar 12VHD Importance of purconceptions, operations.	Organization Disposition of Railway Stations ion. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zone erve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic rate Highways, Motorways and Intersections ways network, transport output. Types of direction curves. Hairpin bend. Stopping sight distance and overtaking sight distance. Levels of trafind intersections. Crossroads. Roundabouts. Intersections. Special types of junctions. Capacity of crossroads and intersections. Structure motorways. Road engineering structures. Assessment of route alternatives. Public Transport ublic transport, transport research, evaluation, planning of lines routes and territory operation, planning of operation parameters, preparation-technology and operation-economically conditions of planning of operation conceptions, planning of operation conception, planing a prepare of infrastrukture (route, stops), preference of public transport, financing.	KZ stations. Forma ailway network. Z,ZK ffic service. Des of pavement of Z,ZK ation of operation and realisation of	tition yards. 4 ign elements f roads and 5 on, network of timetables,
Connecting stating Reset 12SDK Roads and motorw of crossroads are 12VHD Importance of proconceptions, operating 12X31D	Organization Disposition of Railway Stations ion. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zone erve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic rate Highways, Motorways and Intersections Ways network, transport output. Types of direction curves. Hairpin bend. Stopping sight distance and overtaking sight distance. Levels of traffind intersections. Crossroads. Roundabouts. Intersections. Special types of junctions. Capacity of crossroads and intersections. Structure motorways. Road engineering structures. Assessment of route alternatives. Public Transport ublic transport, transport research, evaluation, planning of lines routes and territory operation, planning of operation parameters, preparation-technology and operation-economically conditions of planning of operation conceptions, planning of operation conception, planing a prepare of infrastrukture (route, stops), preference of public transport, financing. Project 1 DOS	KZ stations. Forma ailway network. Z,ZK fic service. Des of pavement of Z,ZK ation of operation and realisation of	4 ign elements f roads and 5 on, network of timetables,
Connecting stating Reservations 12SDK Roads and motorwood crossroads are 12VHD Importance of proconceptions, operating 12X31D 12X32D	Organization Disposition of Railway Stations ion. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zone erve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic rate Highways, Motorways and Intersections Ways network, transport output. Types of direction curves. Hairpin bend. Stopping sight distance and overtaking sight distance. Levels of traffind intersections. Crossroads. Roundabouts. Intersections. Special types of junctions. Capacity of crossroads and intersections. Structure motorways. Road engineering structures. Assessment of route alternatives. Public Transport ublic transport, transport research, evaluation, planning of lines routes and territory operation, planning of operation parameters, preparation-technology and operation-economically conditions of planning of operation conceptions, planning of operation conception, planing a prepare of infrastrukture (route, stops), preference of public transport, financing. Project 1 DOS Project 2 DOS	KZ stations. Forma ailway network. Z,ZK fic service. Des of pavement of Z,ZK ation of operation and realisation of Z	4 ign elements f roads and 5 on, network of timetables,
Connecting statishes Rese 12SDK Roads and motorwood crossroads ar 12VHD Importance of preconceptions, opera 12X31D 12X32D 12X33D	Organization Disposition of Railway Stations ion. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zone erve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic rate Highways, Motorways and Intersections Ways network, transport output. Types of direction curves. Hairpin bend. Stopping sight distance and overtaking sight distance. Levels of traffind intersections. Crossroads. Roundabouts. Intersections. Special types of junctions. Capacity of crossroads and intersections. Structure motorways. Road engineering structures. Assessment of route alternatives. Public Transport ublic transport, transport research, evaluation, planning of lines routes and territory operation, planning of operation parameters, prepara ation-technology and operation-economically conditions of planning of operation conceptions, planning of operation conception, planing a prepare of infrastrukture (route, stops), preference of public transport, financing. Project 1 DOS Project 2 DOS Project 3 DOS	KZ stations. Forma ailway network. Z,ZK fic service. Des of pavement of Z,ZK ation of operation and realisation of Z Z Z	4 ign elements f roads and 5 on, network of timetables, 2 2 4
Connecting statishes Rese 12SDK Roads and motorwood crossroads are 12VHD Importance of preconceptions, opera 12X31D 12X32D 12X33D 12Y1AE	Organization Disposition of Railway Stations ion. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zone erree stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic reserve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic reserve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic reserves stations. Technology and overtaking sight distance. Levels of traffect in the intersections. Crossroads. Roundabouts. Intersections. Special types of junctions. Capacity of crossroads and intersections. Structure motorways. Road engineering structures. Assessment of route alternatives. Public Transport ublic transport, transport research, evaluation, planning of lines routes and territory operation, planning of operation parameters, preparation-technology and operation-economically conditions of planning of operation conceptions, planning of operation conception, planing a prepare of infrastrukture (route, stops), preference of public transport, financing. Project 1 DOS Project 2 DOS Project 3 DOS Applied Ecology	KZ stations. Forma alilway network. Z,ZK fic service. Des of pavement of Z,ZK ation of operation and realisation of Z Z Z KZ	4 ign elements f roads and 5 on, network of timetables, 2 2 4 2
Connecting statishes Rese 12SDK Roads and motorwood crossroads are 12VHD Importance of preconceptions, opera 12X31D 12X32D 12X33D 12Y1AE General ecology	Organization Disposition of Railway Stations ion. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zone erve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic reserve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic reserve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic reserves stations. Technology and overtaking sight distance. Levels of traffect in the intersections. The project of crossroads and intersections. Structure motorways. Road engineering structures. Assessment of route alternatives. Public Transport Public Transport	KZ stations. Forma alilway network. Z,ZK fic service. Des of pavement of Z,ZK ation of operation and realisation of Z Z Z KZ EIA documenta	4 ign elements f roads and 5 on, network of timetables, 2 2 4 2 attion. Special
Connecting statishes Rese 12SDK Roads and motorwood crossroads are 12VHD Importance of preconceptions, opera 12X31D 12X32D 12X33D 12Y1AE General ecology	Organization Disposition of Railway Stations ion. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zone erve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic reserve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic reserve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic reserve stations. Technology and operation curves. Hairpin bend. Stopping sight distance and overtaking sight distance. Levels of traffer and intersections. Crossroads. Roundabouts. Intersections. Special types of junctions. Capacity of crossroads and intersections. Structure motorways. Road engineering structures. Assessment of route alternatives. Public Transport uublic transport, transport research, evaluation, planning of lines routes and territory operation, planning of operation parameters, prepara ation-technology and operation-economically conditions of planning of operation conceptions, planning of operation conception, planning a prepare of infrastrukture (route, stops), preference of public transport, financing. Project 1 DOS Project 2 DOS Project 3 DOS Applied Ecology ecological concepts and principles, ecosystem, ecological factors, energy flow through the ecosystem. Application of knowledge within cape ecology - origin and historical development. Landscape definition and classification. Success. Traffic constructions in the countryside.	KZ stations. Forma alilway network. Z,ZK fic service. Des of pavement of Z,ZK ation of operation and realisation of Z Z Z KZ EIA documenta	4 ign elements f roads and 5 on, network of timetables, 2 2 4 2 attion. Special
Connecting statishes Rese 12SDK Roads and motorwood crossroads are 12VHD Importance of preconceptions, opera 12X31D 12X32D 12X33D 12Y1AE General ecology - ecology. Landso	Organization Disposition of Railway Stations ion. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zone are stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic reserve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic reserve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic reserve stations. Technology and observe stations of direction curves. Hairpin bend. Stopping sight distance and overtaking sight distance. Levels of traffed intersections. Crossroads. Roundabouts. Intersections. Special types of junctions. Capacity of crossroads and intersections. Structure motorways. Road engineering structures. Assessment of route alternatives. Public Transport ublic transport, transport research, evaluation, planning of lines routes and territory operation, planning of operation parameters, prepara ation-technology and operation-economically conditions of planning of operation conceptions, planning of operation conception, planning of prepare of infrastrukture (route, stops), preference of public transport, financing. Project 1 DOS Project 2 DOS Project 3 DOS Applied Ecology ecological concepts and principles, ecosystem, ecological factors, energy flow through the ecosystem. Application of knowledge within cape ecology - origin and historical development. Landscape definition and classification. Success. Traffic constructions in the countrysid protection. Applied ecology.	KZ stations. Forma alilway network. Z,ZK fic service. Des of pavement of Z,ZK ation of operation and realisation of Z Z Z KZ EIA documenta	4 ign elements f roads and 5 on, network of timetables, 2 2 4 2 attion. Special
Connecting statishes Rese 12SDK Roads and motorwood crossroads are 12VHD Importance of preconceptions, opera 12X31D 12X32D 12X32D 12X33D 12Y1AE General ecology-ecology. Landso	Organization Disposition of Railway Stations ion. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zone erve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic reserve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic reserve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic reserve stations. Technology and operation curves. Hairpin bend. Stopping sight distance and overtaking sight distance. Levels of traffer and intersections. Crossroads. Roundabouts. Intersections. Special types of junctions. Capacity of crossroads and intersections. Structure motorways. Road engineering structures. Assessment of route alternatives. Public Transport uublic transport, transport research, evaluation, planning of lines routes and territory operation, planning of operation parameters, prepara ation-technology and operation-economically conditions of planning of operation conceptions, planning of operation conception, planning a prepare of infrastrukture (route, stops), preference of public transport, financing. Project 1 DOS Project 2 DOS Project 3 DOS Applied Ecology ecological concepts and principles, ecosystem, ecological factors, energy flow through the ecosystem. Application of knowledge within cape ecology - origin and historical development. Landscape definition and classification. Success. Traffic constructions in the countryside.	KZ stations. Forma ailway network. Z,ZK fic service. Des of pavement of Z,ZK ation of operation and realisation of Z Z KZ EIA documentate e. Landscape a	4 ign elements f roads and 5 on, network of timetables 2 2 4 2 ation. Special and nature
Connecting statishes Rese 12SDK Roads and motorwood crossroads and 12VHD Importance of preconceptions, opera 12X31D 12X32D 12X32D 12X33D 12Y1AE General ecology-ecology. Landso	Organization Disposition of Railway Stations ion. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zone erve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic railways network, transport output. Types of direction curves. Hairpin bend. Stopping sight distance and overtaking sight distance. Levels of traffic dintersections. Crossroads. Roundabouts. Intersections. Special types of junctions. Capacity of crossroads and intersections. Structure motorways. Road engineering structures. Assessment of route alternatives. Public Transport Bublic Transport	KZ stations. Forma ailiway network. Z,ZK fic service. Des of pavement of Z,ZK ation of operation and realisation of Z Z Z KZ EIA documenta e. Landscape a KZ ne complete de	4 ign elements f roads and 5 on, network of timetables 2 2 4 2 attion. Special and nature 2 ssign of this
Connecting statishes Rese 12SDK Roads and motorwood crossroads are 12VHD Importance of preconceptions, opera 12X31D 12X32D 12X33D 12Y1AE General ecology-ecology. Landso	Organization Disposition of Railway Stations ion. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zone serve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic rate of the stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic rate of the stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic rate of the stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic rate of the station. The Capacity of crossroads and intersections. The Capacity of crossroads and intersections. Structure and intersections. Crossroads. Roundabouts. Intersections. Special types of junctions. Capacity of crossroads and intersections. Structure motorways. Road engineering structures. Assessment of route alternatives. Public Transport Public Transport Public Transport public transport, transport research, evaluation, planning of lines routes and territory operation, planning of operation conception, planning of operation-technology and operation-economically conditions of planning of operation conceptions, planning of operation-technology and operation-economically conditions of planning of operation conceptions, planning of operation conception, planning of operation of prepare of infrastrukture (route, stops), preference of public transport, financing. Project 1 DOS Project 2 DOS Project 2 DOS Applied Ecology ecological concepts and principles, ecosystem, ecological factors, energy flow through the ecosystem. Application of knowledge within cape ecology - origin and historical development. Landscape definition and classification. Success. Traffic constructions in the countrysid protection. Applied ecology. Designing Roads in Civil 3D I evoted	KZ stations. Forma ailiway network. Z,ZK fic service. Des of pavement of Z,ZK ation of operation and realisation of Z Z Z KZ EIA documenta e. Landscape a KZ ne complete de ourse also inclu	4 ign elements f roads and 5 on, network of timetables, 2 2 4 2 attion. Special and nature 2 ssign of this des a basic
Connecting statishes Rese 12SDK Roads and motorwood crossroads and 12VHD Importance of preconceptions, opera 12X31D 12X32D 12X33D 12Y1AE General ecology-ecology. Landso 12Y1C1 The course is departicular linear to	Organization Disposition of Railway Stations ion. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zone brive stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic reserve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic reserve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic reserve stations. Technology and Intersections of direction curves. Hairpin bend. Stopping sight distance and overtaking sight distance. Levels of traffic di intersections. Crossroads. Roundabouts. Intersections. Special types of junctions. Capacity of crossroads and intersections. Structure motorways. Road engineering structures. Assessment of route alternatives. Public Transport ublic Transport ublic transport, transport research, evaluation, planning of lines routes and territory operation, planning of operation parameters, prepara ation-technology and operation-economically conditions of planning of operation conceptions, planning of operation conception, planning of prepare of infrastrukture (route, stops), preference of public transport, financing. Project 1 DOS Project 2 DOS Project 3 DOS Applied Ecology ecological concepts and principles, ecosystem, ecological factors, energy flow through the ecosystem. Application of knowledge within cape ecology - origin and historical development. Landscape definition and classification. Success. Traffic constructions in the countrysid protection. Applied ecology. Designing Roads in Civil 3D I evoted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through the building, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation.	KZ stations. Forma ailiway network. Z,ZK fic service. Des of pavement of Z,ZK ation of operation and realisation of Z Z Z KZ EIA documenta e. Landscape a KZ ne complete de ourse also inclu KZ	4 ign elements f roads and 5 on, network of timetables, 2 2 4 2 attion. Special and nature 2 ssign of this des a basic
Connecting statishes Rese 12SDK Roads and motorwood crossroads and 12VHD Importance of preconceptions, opera 12X31D 12X32D 12X33D 12Y1AE General ecology - ecology. Landso 12Y1C1 The course is departicular linear because it departicular linear because is departed.	Organization Disposition of Railway Stations ion. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zone erve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic re Highways, Motorways and Intersections. Saving and Intersections of direction curves. Hairpin bend. Stopping sight distance and overtaking sight distance. Levels of traffic dintersections. Crossroads. Roundabouts. Intersections. Special types of junctions. Capacity of crossroads and intersections. Structure motorways. Road engineering structures. Assessment of route alternatives. Public Transport ublic transport, transport research, evaluation, planning of lines routes and territory operation, planning of operation parameters, prepara ation-technology and operation-economically conditions of planning of operation conceptions, planning of operation conception, planning of prepare of infrastrukture (route, stops), preference of public transport, financing. Project 1 DOS Project 2 DOS Applied Ecology ecological concepts and principles, ecosystem, ecological factors, energy flow through the ecosystem. Application of knowledge within cape ecology - origin and historical development. Landscape definition and classification. Success. Traffic constructions in the countrysid protection. Applied ecology. Designing Roads in Civil 3D II evoted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through the explanation of the traffic building design in the real-life profession. Designing Roads in Civil 3D II evoted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through the explanation of the traffic building design in the real-life profession.	KZ stations. Forma ailiway network. Z,ZK fic service. Des of pavement of Z,ZK ation of operation and realisation of Z Z Z KZ EIA documenta e. Landscape a KZ ne complete de ourse also inclu KZ ne complete de	4 ign elements f roads and 5 on, network of timetables, 2 2 4 2 attion. Special and nature 2 ssign of this des a basic 2 ssign of this
Connecting statishes Rese 12SDK Roads and motorwood crossroads are 12VHD Importance of preconceptions, opera 12X31D 12X32D 12X33D 12Y1AE General ecology - ecology. Landso 12Y1C1 The course is departicular linear because is departicular linear because is departicular linear because is desparted in the course is departed in the course is desparted in the course in the course is desparted in the course in the course in the course is desparted in the course in the course in the course is desparted in the course in t	Organization Disposition of Railway Stations ion. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zone brive stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic reserve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic reserve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic reserve stations. Technology and Intersections of direction curves. Hairpin bend. Stopping sight distance and overtaking sight distance. Levels of traffic di intersections. Crossroads. Roundabouts. Intersections. Special types of junctions. Capacity of crossroads and intersections. Structure motorways. Road engineering structures. Assessment of route alternatives. Public Transport ublic Transport ublic transport, transport research, evaluation, planning of lines routes and territory operation, planning of operation parameters, prepara ation-technology and operation-economically conditions of planning of operation conceptions, planning of operation conception, planning of prepare of infrastrukture (route, stops), preference of public transport, financing. Project 1 DOS Project 2 DOS Project 3 DOS Applied Ecology ecological concepts and principles, ecosystem, ecological factors, energy flow through the ecosystem. Application of knowledge within cape ecology - origin and historical development. Landscape definition and classification. Success. Traffic constructions in the countrysid protection. Applied ecology. Designing Roads in Civil 3D I evoted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through the building, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation.	KZ stations. Forma ailiway network. Z,ZK fic service. Des of pavement of Z,ZK ation of operation and realisation of Z Z Z KZ EIA documenta e. Landscape a KZ ne complete de ourse also inclu KZ ne complete de	4 ign elements f roads and 5 on, network of timetables, 2 2 4 2 attion. Special and nature 2 ssign of this des a basic 2 ssign of this
Connecting statishes Rese 12SDK Roads and motorwood crossroads and 12VHD Importance of preconceptions, opera 12X31D 12X32D 12X33D 12Y1AE General ecology-ecology. Landso 12Y1C1 The course is departicular linear because is departicular linear becau	Organization Disposition of Railway Stations ion. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zone error stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic re Highways, Motorways and Intersections ways network, transport output. Types of direction curves. Hairpin bend. Stopping sight distance and overtaking sight distance. Levels of traffic dintersections. Crossroads. Roundabouts. Intersections. Special types of junctions. Capacity of crossroads and intersections. Structure motorways. Road engineering structures. Assessment of route alternatives. Public Transport ublic transport, transport research, evaluation, planning of lines routes and territory operation, planning of operation parameters, preparation-technology and operation-economically conditions of planning of operation conceptions, planning of operation prepare of infrastrukture (route, stops), preference of public transport, financing. Project 1 DOS Project 2 DOS Project 2 DOS Project 3 DOS Applied Ecology ecological concepts and principles, ecosystem, ecological factors, energy flow through the ecosystem. Application of knowledge within cape ecology - origin and historical development. Landscape definition and classification. Success. Traffic constructions in the countrysid protection. Applied ecology. Designing Roads in Civil 3D I evoted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through the building, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The original properties of the model and work sections and the cubic capacity calculation. The properties of the profession of the model and work sections and the cubic capacity calculation. The properties of the model and work sections and the cubic capacity calculation. The pr	KZ stations. Forma ailiway network. Z,ZK fic service. Des of pavement of Z,ZK ation of operation and realisation of Z Z Z KZ EIA documentate. Landscape a KZ ne complete de ourse also inclu KZ ne complete de eviously acquir	4 ign elements f roads and 5 on, network of timetables, 2 2 4 2 attion. Special and nature 2 ssign of this des a basic 2 ssign of this ed skills are
Connecting statishes Rese 12SDK Roads and motorwood crossroads and 12VHD Importance of preconceptions, opera 12X31D 12X32D 12X33D 12Y1AE General ecology-ecology. Landso 12Y1C1 The course is departicular linear because is departicular linear becau	Organization Disposition of Railway Stations ion. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zone erve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic reversations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic reversations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic reversations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic reversations. Technology and Intersections of direction curves. Hairpin bend. Stopping sight distance and overtaking sight distance. Levels of trail and intersections. Crossroads. Roundabouts. Intersections. Special types of junctions. Capacity of crossroads and intersections. Structure motorways. Road engineering structures. Assessment of route alternatives. Public Transport	KZ stations. Forma ailiway network. Z,ZK fic service. Des of pavement of Z,ZK ation of operation and realisation of Z Z Z KZ EIA documentate. Landscape a KZ ne complete de ourse also inclu KZ ne complete de eviously acquir	4 ign elements f roads and 5 on, network of timetables, 2 2 4 2 attion. Special and nature 2 ssign of this des a basic 2 ssign of this ed skills are
Connecting statishes Rese 12SDK Roads and motorwood crossroads are 12VHD Importance of preconceptions, operation 12X31D 12X32D 12X33D 12Y1AE General ecology-ecology. Landso 12Y1C1 The course is departicular linear because it departicular linear linear because it departicular linear because it departicular l	Organization Disposition of Railway Stations ion. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zone stree stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic re Highways, Motorways and Intersections ways network, transport output. Types of direction curves. Hairpin bend. Stopping sight distance and overtaking sight distance. Levels of traffed intersections. Crossroads. Roundabouts. Intersections. Special types of junctions. Capacity of crossroads and intersections. Structure motorways. Road engineering structures. Assessment of route alternatives. Public Transport ublic transport, transport research, evaluation, planning of lines routes and territory operation, planning of operation parameters, prepara ation-technology and operation-economically conditions of planning of operation conceptions, planning of operation conception, planning a prepare of infrastrukture (route, stops), preference of public transport, financing. Project 1 DOS Project 2 DOS Applied Ecology ecological concepts and principles, ecosystem, ecological factors, energy flow through the ecosystem. Application of knowledge within cape ecology - origin and historical development. Landscape definition and classification. Success. Traffic constructions in the countrysid protection. Applied ecology. Designing Roads in Civil 3D I evoted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through the building, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The coexplanation of the traffic building design in the real-life profession. Designing Roads in Civil 3D II evoted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through the building, from the initial si	KZ stations. Forma ailiway network. Z,ZK fic service. Des of pavement of Z,ZK ation of operation and realisation of Z Z Z Z KZ EIA documenta e. Landscape a KZ ne complete de ourse also inclu KZ ne complete de eviously acquir KZ udget and pricin	4 ign elements f roads and 5 on, network of timetables, 2 2 4 2 attion. Special and nature 2 ssign of this des a basic 2 ssign of this ed skills are 2 ng. Practical
Connecting statishes Rese 12SDK Roads and motorwood crossroads and 12VHD Importance of preconceptions, operation 12X31D 12X32D 12X33D 12Y1AE General ecology - ecology. Landsoft 12Y1C1 The course is departicular linear between the course is departed by the course is departicular linear between the course is departed by the	Organization Disposition of Railway Stations ion. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zone serve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic ransport expectations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic ransport. Highways, Motorways and Intersections ways network, transport output. Types of direction curves. Hairpin bend. Stopping sight distance and overtaking sight distance. Levels of traffic dintersections. Crossroads. Roundabouts. Intersections. Special types of junctions. Capacity of crossroads and intersections. Structure motorways. Road engineering structures. Assessment of route alternatives. Public Transport Public Transport Undic transport, transport research, evaluation, planning of lines routes and territory operation, planning of operation parameters, prepare atton-technology and operation-economically conditions of planning of operation conceptions, planning of operation conception, planning of prepare of infrastrukture (route, stops), preference of public transport, financing. Project 1 DOS Project 2 DOS Project 3 DOS Applied Ecology Project 3 DOS Applied Ecology Designing Roads in Civil 3D I Evold to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through it building, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The ceptacetor of the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through it building, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The primproved and developed. Students learn to design intersections. Project Doc	KZ stations. Forma ailway network. Z,ZK fic service. Des of pavement of Z,ZK ation of operation and realisation of Z Z Z Z KZ EIA documentate. Landscape at KZ the complete de purse also inclu KZ the complete de eviously acquire KZ udget and pricin	ation yards. 4 ign elements f roads and 5 on, network of timetables, 2 2 4 2 ation. Special and nature 2 ssign of this des a basic 2 g. Practical 2 1 2 1 2 2 2 2 4 2 2 4 2 2 4 2 2 4 2 4
Connecting statishes Rese 12SDK Roads and motorwood crossroads and 12VHD Importance of proconceptions, opera 12X31D 12X32D 12X33D 12Y1AE General ecology - ecology. Landso 12Y1C1 The course is departicular linear because is departicular linear because in the course in the co	Organization Disposition of Railway Stations ion. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zone stree stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic re Highways, Motorways and Intersections ways network, transport output. Types of direction curves. Hairpin bend. Stopping sight distance and overtaking sight distance. Levels of traffed intersections. Crossroads. Roundabouts. Intersections. Special types of junctions. Capacity of crossroads and intersections. Structure motorways. Road engineering structures. Assessment of route alternatives. Public Transport ublic transport, transport research, evaluation, planning of lines routes and territory operation, planning of operation parameters, prepara ation-technology and operation-economically conditions of planning of operation conceptions, planning of operation conception, planning a prepare of infrastrukture (route, stops), preference of public transport, financing. Project 1 DOS Project 2 DOS Applied Ecology ecological concepts and principles, ecosystem, ecological factors, energy flow through the ecosystem. Application of knowledge within cape ecology - origin and historical development. Landscape definition and classification. Success. Traffic constructions in the countrysid protection. Applied ecology. Designing Roads in Civil 3D I evoted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through the building, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The coexplanation of the traffic building design in the real-life profession. Designing Roads in Civil 3D II evoted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through the building, from the initial si	KZ stations. Forma ailiway network. Z,ZK fic service. Des of pavement of Z,ZK ation of operation and realisation of Z Z Z Z KZ EIA documentate. Landscape at KZ ne complete de purse also inclu KZ ne complete de eviously acquir KZ udget and pricin KZ Creation acous	tition yards. 4 ign elements f roads and 5 on, network of timetables, 2 2 4 2 2 tition. Special and nature 2 ssign of this des a basic 2 ssign of this ed skills are 2 ng. Practical 2 titic climate in
Connecting statishes Rese 12SDK Roads and motorwood crossroads ar 12VHD Importance of proconceptions, operation 12X31D 12X32D 12X33D 12Y1AE General ecology ecology. Landso 12Y1C1 The course is departicular linear because in the course of the course is departicular linear because in the course in the course is departicular linear because in the course in the cours	Organization Disposition of Railway Stations ion. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zone rive stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic review stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic review stations. The Czech Republic review stations. The Czech Republic review station with regard to its disposition. Railway station documentation in the Czech Republic review stations. All the Czech Republic review stations. The Czech Republic review station documentation for the Czech Republic review station documentation for the Czech Republic review station. Railway station documentation documentation in the Czech Republic review station documentation for the Czech Republic review station. Railway station documentation documentation in the Czech Republic review station documentation for the Czech Republic review station documentation for the Czech Republic review station. Railway station documentation documentation stations. Structure motorways. Road engineering structures. Assessment of route alternatives. Public Transport ublic transport research, evaluation, planning of lines routes and territory operation, planning of operation parameters, preparation-technology and operation-economically conditions of planning of operation conceptions, planning of operation conception, planning of operation conceptions, planning of operation special concepts and principles, ecosystem, ecological concepts and territory operation, planning of operation conceptions, planning of operation conceptions, planning of operation conceptions, planning of operation conceptions, planning of operation conc	KZ stations. Forma ailiway network. Z,ZK fic service. Des of pavement of Z,ZK ation of operation and realisation of Z Z Z Z KZ EIA documentate. Landscape at KZ ne complete de purse also inclu KZ ne complete de eviously acquir KZ udget and pricin KZ Creation acous	tition yards. 4 ign elements f roads and 5 on, network of timetables, 2 2 4 2 2 tition. Special and nature 2 ssign of this des a basic 2 ssign of this ed skills are 2 ng. Practical 2 titic climate in

40)/41/D			
12Y1KP	Communication and Promotion of Transport Projects	KZ	2
	ublic Relations and the power of public opinion. Work and tasks of PR department and press spokesperson. Communication with the	· · · · · · · · · · · · · · · · · · ·	
networks and beyo	nd. Communication strategy of transport projects. Systematic goodwill building. Crisis situations in communication and preparation	for crisis commun	ication. The
	influence of political marketing and political PR on transport projects. Lobbing.		1
12Y1PC	Pedestrian and Cycling Transport	KZ	2
•	ns. Pedestrian crossings. Modifications for blind, dim-sighted and disabled people. Design of cycle routes network. Ways of cycle route	-	-
for cyclists. Separa	tion of cyclists from other transport modes. Cycle tracks and its design - one way streets, reserved traffic lanes, bus stops, crossing	s with other transp	oort modes,
	crossroads. Traffic signs and road marking for cyclists.		1 -
12Y1PD	Assessment of Transport Structures	KZ	2
	port structures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibilities o	-	
ansport structures	on the landscape. Rating fragmentation and landscape connectivity in the preparation of linear structures. Practical examples of ass	sessment of traffic	buildings of
40)/4511	the environment.	1/7	
12Y1PU	Organization Disposition of Railway Stations	KZ KZ	2
_	n. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zor		ition yards.
	e stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic		
12Y1RU	Railway Lines Reconstruction	KZ	2
keeping railway iir	e operational, maintaining lines and stations, geometrical alignment of railway line, vehicles for railway superstructure and substruct		scneauling
10)/1011	and organising possesions, preparation of railway lines reconstruction and maintenance, process of railway line reconstruction		
12Y1SU	Road Management and Maintenance	KZ	2
-	h ownership of roads in the Czech Republic and the administration of the road at the state and county level. It is presented develop		
edium and long-te	rm strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and repair	r methods are disc	cussea in th
40)/4)/5	classroom as well as investment activity in highway engineering.	177	
12Y1VR	Public Transport in Cities and Regions	KZ	2
	colitical pillars of public transport. Accessibility of public transport. Transport demand management and directional coordination of lin	-	_
Basic operating pa	rameters and transport variations. Types of lines according to their routing and basic operating parameters. Time coordination of line	es. Operational tra	iffic control.
40)/4711	Organization of tram operation in Prague. Tram safety.	1/7	
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 s	settlements
40745	Types of towns or cities with a certain prevailing function, forms of their development. Brief overview of land-use planning.	_	
12ZAR	Introduction to Architectural Design	Z	3
Urbanism and	architecture of traffic systems. Bus and trolley-bus transport. Tramway and town tracks. Design of vehicles. Subway. Railway transpo	rt. Railway station	s. Local
	communications. International airports.		
12ZELP	Railway Operation	Z,ZK	4
egislation in railw.	ay transport. Railway vehicles. Railway signals and signal devices. Railway traffic organisation and operation. Simplified railway traffic	c operation. Railw	ay vehicles
	brakes. Railway vehicles marking. Operation intervals. Theoretical graph of train running.		
12ZTS	Railway Lines and Stations	Z,ZK	4
Rail transport. Ra	way track geometry parameters. Route layout of railway lines. Railway line construction - railway substructure and superstructure. S		ilway lines.
	Railway control systems in relation to infrastructure. Operating and carriage points. Railway lines net and category. Traction in rail to		
12ZYDI	Introduction to Transportation Engineering	Z,ZK	2
ole of transportation	n in land-use planning. Basic terms in transportation engineering. Traffic survey and traffic prognosis. Introduction to topic of roads, p	ublic mass transp	ort. Negativ
11100	impacts of transportation to environment and safety.	1/7	
14ASD	Algorithm and Data Structures	KZ	3
=	e problems, design a theoretical solution to a given problem and write the resulting algorithm using flowcharts, practice reading algor		-
id use basic Book	an algebra to construct constraints in algorithms. Students will be introduced to the basics of the Python programming language - v	-	j, loops, the
	will learn to work with variables of basic data types (integer, floating point and string) and the list data structure in their progra		
14DATS	Database Systems	KZ	2
	database systems, conceptual model, relational data model, the principles of normal forms, relational database design, security an		, database
	queries, relational algebra, SQL language, client / server, multilayer architectures, distributed database systems. Access to data via		_
14DPK	Digital Support for Designing of Roads and Highways	Z	0
	Seminars possibilities of technical processing problems focused on designing of roads and highways.		
	Digital Support for Railway Lines	Z	0
14DZT			•
14DZT	Seminars possibilities of technical processing problems solved in the field of railway lines.		2
14DZT 14KSP	Seminars possibilities of technical processing problems solved in the field of railway lines. Constructing with Computer Aid	KZ	
14KSP			application
14KSP CAD systems" teri	Constructing with Computer Aid	ı k rules in graphic	
14KSP CAD systems" teri	Constructing with Computer Aid a determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic common wor	ı k rules in graphic	
14KSP CAD systems" terr	Constructing with Computer Aid determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic common wor co-ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting possib profiles, drawings with raster foundaments).	ı k rules in graphic	
14KSP CAD systems" terrand CA systems. 14PODP	Constructing with Computer Aid a determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic common wor co-ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting possible.)	k rules in graphic ilites, AutoCAD e	nvironment
14KSP CAD systems" terrand CA systems. 14PODP verview of CAx ap	Constructing with Computer Aid n determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic common wor co-ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting possib profiles, drawings with raster foundaments). Computer Aid of Transportation Projecting	k rules in graphic ilites, AutoCAD e KZ a exchange). Adv	nvironment 3 anced block
14KSP CAD systems" terrand CA systems. 14PODP verview of CAx ap	Constructing with Computer Aid n determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic common work co-ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting possible profiles, drawings with raster foundaments). Computer Aid of Transportation Projecting clication for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, dat	k rules in graphic ilites, AutoCAD e KZ a exchange). Adv	nvironment 3 anced block
14KSP CAD systems" terrand CA systems. 14PODP verview of CAx ap	Constructing with Computer Aid n determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic common work co-ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting possible profiles, drawings with raster foundaments). Computer Aid of Transportation Projecting olication for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, dates, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transition)	k rules in graphic ilites, AutoCAD e KZ a exchange). Adv	nvironment 3 anced block
14KSP CAD systems" terrand CA systems. 14PODP verview of CAx apodification (attributor)	Constructing with Computer Aid n determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic common work Co-ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting possible profiles, drawings with raster foundaments). Computer Aid of Transportation Projecting Dilication for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, dates, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transition). Basics of 3D modelling.	k rules in graphic illites, AutoCAD e KZ a exchange). Adv. n curve, cross-and	3 anced block d longitudin
14KSP CAD systems" terrand CA systems. 14PODP verview of CAx apodification (attributed) 14PRG The Course Programmer.	Constructing with Computer Aid a determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic common work co-ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting possible profiles, drawings with raster foundaments). Computer Aid of Transportation Projecting computer Aid of Transportation Projecting computer Aid of Transportation projecting group, external references. Basic tasks automatizing (programming, scripting, dates, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transition). Basics of 3D modelling. Programming	k rules in graphic illites, AutoCAD e KZ a exchange). Adv. n curve, cross-and KZ nming language is	3 anced block d longitudin 2 s expanded
14KSP CAD systems" terrand CA systems. 14PODP verview of CAx apodification (attributed) 14PRG The Course Programmer.	Constructing with Computer Aid a determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic common work co-ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting possible profiles, drawings with raster foundaments). Computer Aid of Transportation Projecting clication for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, dates, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transition). Basics of 3D modelling. Programming cumming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python programming	k rules in graphic illites, AutoCAD e KZ a exchange). Adv. n curve, cross-and KZ nming language is	3 anced block d longitudin 2 s expanded
14KSP CAD systems" terrand CA systems. 14PODP everview of CAx appodification (attributed) 14PRG The Course Programmer.	Constructing with Computer Aid an determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic common work co-ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting possible profiles, drawings with raster foundaments). Computer Aid of Transportation Projecting clication for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, dates, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transition). Basics of 3D modelling. Programming cumming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python programicipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and search	k rules in graphic illites, AutoCAD e KZ a exchange). Adv. n curve, cross-and KZ nming language is	3 anced block d longitudina 2 s expanded
14KSP CAD systems" terr and CA systems. 14PODP EVERVIEW OF CAX apposed fication (attribution) 14PRG The Course Progrere so that the parents and the parents	Constructing with Computer Aid In determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic common work Co-ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting possible profiles, drawings with raster foundaments). Computer Aid of Transportation Projecting Dilication for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, dates, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transition). Basics of 3D modelling. Programming Imming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python programicipant 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 DOS	k rules in graphic krules, AutoCAD e KZ a exchange). Adv. n curve, cross-and KZ nming language is hing, tuples, sets,	3 anced block d longitudin 2 s expanded dictionaries
14KSP CAD systems' terriand CA systems. 14PODP verview of CAx apodification (attributed of the course Progrement Office Progrement of the course Progrement Office Progr	Constructing with Computer Aid In determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic common work Co-ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting possible profiles, drawings with raster foundaments). Computer Aid of Transportation Projecting Dilication for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, dates, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transition). Basics of 3D modelling. Programming Imming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python programicipant 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 DOS Project 2 DOS	k rules in graphic illites, AutoCAD e KZ a exchange). Adv. n curve, cross-and KZ nming language is hing, tuples, sets,	3 anced block d longitudin: 2 s expanded dictionarie: 2 2
14KSP CAD systems" terr and CA systems. 14PODP verview of CAx apodification (attributed to the course Progrere so that the paragraph of the course Progres of the course Pr	Constructing with Computer Aid In determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic common work Co-ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting possible profiles, drawings with raster foundaments). Computer Aid of Transportation Projecting Dilication for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, dates, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transition). Basics of 3D modelling. Programming Imming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python programicipant 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 DOS	k rules in graphic krules, AutoCAD e KZ a exchange). Adv. n curve, cross-and KZ nming language is hing, tuples, sets,	3 anced block d longitudina 2 s expanded dictionaries

	D : 1 T	1/7	
	Barrierless Transport	KZ	2
	less accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students v	will gain theoretical	knowledge
of barrierless enviro	onment 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.	·	5,
4.4)/4.DM		1/7	
14Y1BM	Biometric Methods	KZ	2
Basic biometric te	rms, authentication methods, principles and performance measurement of biometric systems, overview of biometric technologies, hai	nd geometry, iris re	ecognition,
retina recognition n	nethod, 2D and 3D face recognition, vein patterns on the wrist, ear biometrics, fingerprint recognition, skin spectroscopy, behavioral m	nethods, the use of	f biometrics
	in transport applications, safety and risks of biometric technologies.		
4.4\/4.1\\\/		KZ	
14Y1HW	Computer Hardware		2
Computer archite	cture, basics of logical circuits design and their realization using FPGA. In detail, description of computer architecture and separate p	parts designing - co	ontrollers,
	arithmetic and logical units, I/O subsystem.		
14Y1MP	Modeling Complex Assemblies and Models in Parametric Modeller	KZ	2
Assemblies prog	gramming - tools and methodology of working subassemblies and assemblies, sheet metal parts modelling, welded assemblies, pipel	ines, and distribution	on lines.
	Photorealistic output rendering - physical and material properties, lighting sources. MKP - visual example.		
14Y1OJ	Object - oriented programming in JAVA	KZ	2
	Encapsulation. Classes. Attributes. Access modifiers. Methods and overloading. Special methods (constructors, getters / setters). Ba		
		-	
data types. Innerita	nce. Polymorphism. Statics, constants, interfaces, abstract classes, enum, packages, exceptions, collections, generics, lambda expre	ssions, anonymou	s functions.
14Y10P	Operating System	KZ	2
Distributions, Ins	tallation GNU/Linux OS. X-window system. Rights management - users and groups, ACL rights. Filesystems and attributes. Programs	s and processess.	OS boot.
	console programs / commands. Config files. SW management, package systems. Programs in graphic shell - text, spreadsheet, graph		
Turnevers. Dasic c		no editors, sourid, v	nueo anu
	communication. Services management. Safe and secure configuration of OS. Remote administration.		
14Y1P2	Computer Aid of Transportation Projecting 2	KZ	2
	plication for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, data		nced blocks
-	Ites, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transition		
modification (attribu		i cuive, cioss-and	iongitudinai
	section). Basics of 3D modelling.		
14Y1PA	3D Modeling in AutoCAD	KZ	2
	arametric modeller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup creation, object		
Work in ob non p		data ordation, work	With data
	connected with external database. Basic definition of work with lights, materials and reflexes. Models presentation.		
14Y1PG	Computer Graphics	KZ	2
Basic formats of d	raphic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with editir	ng programs (withi	n the user
`	level scope) using layers, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics		
4.4V/4.DI			
14Y1PI	Corporate Information System	KZ	2
Data-informatio	n-knowledge, components of information system, syntatic and semantic sense of data, structure of corporate information system, par	rticular information	system
(personalistic, prod	uction, storage, etc.), corporate information politic and information control, risks of information system operation, legal environment of	information system	operation,
, , ,	state information system, information system security, data protection, safety politics.	,	
4.0745.1		177	
14Y1PJ	C Programming Language	KZ	2
C programming lan	guage. Preprocessor, basics of the C language (data types, syntax, commands), functions, pointes, dynamical memory allocation, strin	ıg, files, structures a	and unions.
	Implementations of abstract data types (FIFO, LIFO, list), programming techniques (sorting, searching, recursion), using bitwise op	orerators.	
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 formu		incluaing
addressing, error de	etection. Working with large spreadsheets, filters, advanced filters, database functions. Pivot tables and charts, conditional formatting, so		
	data analysis. Examples and questions from various companies and training.	olution finding, solv	er, macros,
		olution finding, solv	er, macros,
1/V1TI	Creating Interactive Internet Applications	-	rer, macros,
14Y1TI	Creating Interactive Internet Applications	KZ	2
	ting language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions. Your	KZ	2
	· · · · · · · · · · · · · · · · · · ·	KZ	2
Possibilities of scrip	ting language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions. Your in PHP language.	KZ r own application p	2 rogrammed
Possibilities of scrip	ting language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions. Your in PHP language. Editing of Theses in MS Word	KZ r own application pr	2 rogrammed
Possibilities of scrip 14Y1UP Students will be	ting language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions. Your in PHP language. Editing of Theses in MS Word introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, creat	KZ r own application po	2 rogrammed 2 s, lists of
Possibilities of scrip 14Y1UP Students will be	ting language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions. Your in PHP language. Editing of Theses in MS Word introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, creat obs, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions.	KZ r own application po	2 rogrammed 2 s, lists of
Possibilities of scrip 14Y1UP Students will be	ting language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions. Your in PHP language. Editing of Theses in MS Word introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, creat	KZ r own application po	2 rogrammed 2 s, lists of
Possibilities of scrip 14Y1UP Students will be figures, tables, grap	ting language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions. Your in PHP language. Editing of Theses in MS Word Introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, creat ohs, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions that they are able to concentrate mainly on writing a thesis.	KZ r own application po KZ te tables of content liting dissertations a	2 rogrammed 2 s, lists of and theses,
Possibilities of scrip 14Y1UP Students will be ifigures, tables, grap 14Y1VM	ting language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions. Your in PHP language. Editing of Theses in MS Word introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, creat ohs, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions so that they are able to concentrate mainly on writing a thesis. Development of Applications for Mobile Devices	KZ r own application policy KZ te tables of content liting dissertations a	2 rogrammed 2 s, lists of and theses, 2
Possibilities of scrip 14Y1UP Students will be ifigures, tables, grap 14Y1VM	ting language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions. Your in PHP language. Editing of Theses in MS Word introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, creat ohs, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions so that they are able to concentrate mainly on writing a thesis. Development of Applications for Mobile Devices programming, Java programming language, development environment, operating system Android, development application - widgets,	KZ r own application policy KZ te tables of content liting dissertations a	2 rogrammed 2 s, lists of and theses, 2
Possibilities of scrip 14Y1UP Students will be ifigures, tables, grap 14Y1VM Object oriented p	ting language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions. Your in PHP language. Editing of Theses in MS Word Introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, creat ons, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions so that they are able to concentrate mainly on writing a thesis. Development of Applications for Mobile Devices programming, Java programming language, development environment, operating system Android, development application - widgets, permissions, services, GUI.	KZ r own application position KZ te tables of content liting dissertations at KZ KZ	2 rogrammed 2 ss, lists of and theses, 2 ss, menu,
Possibilities of scrip 14Y1UP Students will be ifigures, tables, grap 14Y1VM	ting language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions. Your in PHP language. Editing of Theses in MS Word introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, creat ohs, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions so that they are able to concentrate mainly on writing a thesis. Development of Applications for Mobile Devices programming, Java programming language, development environment, operating system Android, development application - widgets,	KZ r own application policy KZ te tables of content liting dissertations a	2 rogrammed 2 s, lists of and theses, 2
Possibilities of scrip 14Y1UP Students will be if figures, tables, grap 14Y1VM Object oriented p	ting language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions. Your in PHP language. Editing of Theses in MS Word Introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, creat ons, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions to that they are able to concentrate mainly on writing a thesis. Development of Applications for Mobile Devices programming, Java programming language, development environment, operating system Android, development application - widgets, permissions, services, GUI. Webdesign 1	KZ r own application points KZ te tables of content liting dissertations a KZ containers, thread	2 rogrammed 2 rs, lists of and theses, 2 rs, menu, 2
Possibilities of scrip 14Y1UP Students will be ifigures, tables, grap 14Y1VM Object oriented p	ting language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions. Your in PHP language. Editing of Theses in MS Word Introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, creat ons, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions so that they are able to concentrate mainly on writing a thesis. Development of Applications for Mobile Devices programming, Java programming language, development environment, operating system Android, development application - widgets, permissions, services, GUI. Webdesign 1 The basics of communication HTTP, URL and addressing, markup languages HTML and XHTML, HTML tags, rules of web accessibility	KZ r own application points KZ te tables of content liting dissertations a KZ , containers, thread KZ y and usability, CSS	2 rogrammed 2 ss, lists of and theses, 2 ss, menu, 2 sproperties
Possibilities of scrip 14Y1UP Students will be ifigures, tables, grap 14Y1VM Object oriented p 14Y1W1 Students will learn and selectors	ting language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions. Your in PHP language. Editing of Theses in MS Word Introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, creat ohs, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions to make they are able to concentrate mainly on writing a thesis. Development of Applications for Mobile Devices programming, Java programming language, development environment, operating system Android, development application - widgets, permissions, services, GUI. Webdesign 1 the basics of communication HTTP, URL and addressing, markup languages HTML and XHTML, HTML tags, rules of web accessibility, the issue of web browsers, creating one to three column layout pages, sites validation, conditional comments. Topics will be practice	KZ r own application processing the tables of content liting dissertations at the containers, thread the containers, thread the containers, thread the containers and the containers are containers.	2 rogrammed 2 s, lists of and theses, 2 s, menu, 2 s properties inples.
Possibilities of scrip 14Y1UP Students will be ifigures, tables, grap 14Y1VM Object oriented p	ting language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions. Your in PHP language. Editing of Theses in MS Word Introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, creat ons, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions so that they are able to concentrate mainly on writing a thesis. Development of Applications for Mobile Devices programming, Java programming language, development environment, operating system Android, development application - widgets, permissions, services, GUI. Webdesign 1 The basics of communication HTTP, URL and addressing, markup languages HTML and XHTML, HTML tags, rules of web accessibility	KZ r own application points KZ te tables of content liting dissertations a KZ , containers, thread KZ y and usability, CSS	2 rogrammed 2 ss, lists of and theses, 2 ss, menu, 2 sproperties
Possibilities of scrip 14Y1UP Students will be ifigures, tables, grap 14Y1VM Object oriented p 14Y1W1 Students will learn and selectors 14Y1W2	ting language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions. Your in PHP language. Editing of Theses in MS Word Introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, creat ohs, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions to make they are able to concentrate mainly on writing a thesis. Development of Applications for Mobile Devices programming, Java programming language, development environment, operating system Android, development application - widgets, permissions, services, GUI. Webdesign 1 the basics of communication HTTP, URL and addressing, markup languages HTML and XHTML, HTML tags, rules of web accessibility, the issue of web browsers, creating one to three column layout pages, sites validation, conditional comments. Topics will be practice	KZ r own application processing the tables of content liting dissertations at the containers, thread the containers and the containers that the c	2 s, lists of and theses, 2 s, menu, 2 s properties inples. 2
Possibilities of scrip 14Y1UP Students will be ifigures, tables, grap 14Y1VM Object oriented p 14Y1W1 Students will learn and selectors 14Y1W2	ting language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions. Your in PHP language. Editing of Theses in MS Word Introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, creat obs, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions to move the seamless of that they are able to concentrate mainly on writing a thesis. Development of Applications for Mobile Devices programming, Java programming language, development environment, operating system Android, development application - widgets, permissions, services, GUI. Webdesign 1 The basics of communication HTTP, URL and addressing, markup languages HTML and XHTML, HTML tags, rules of web accessibility, the issue of web browsers, creating one to three column layout pages, sites validation, conditional comments. Topics will be practice Webdesign 2 advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, web services.	KZ r own application processing the tables of content liting dissertations at the containers, thread the containers and the containers that the c	2 s, lists of and theses, 2 s, menu, 2 s properties inples. 2
Possibilities of scrip 14Y1UP Students will be if figures, tables, grap 14Y1VM Object oriented p 14Y1W1 Students will learn and selectors 14Y1W2 Students will learn	ting language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions. Your in PHP language. Editing of Theses in MS Word Introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, creat ons, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions, etc. Footnotes, captions, index. They practice of Mobile Devices Development of Applications for Mobile Devices Development environment, operating system Android, development application - widgets, permissions, services, GUI. Webdesign 1 Webdesign 1 Webdesign 1 Webdesign 2 advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, web sendirectives. Topics will be practiced on practical examples.	KZ r own application processing the stables of content liting dissertations at the stables of content liting dissertations at the stables of containers, thread the stables of the stables	2 s, lists of and theses, 2 s, menu, 2 s properties inples. 2 configuration
Possibilities of scrip 14Y1UP Students will be if figures, tables, grap 14Y1VM Object oriented p 14Y1W1 Students will learn and selectors 14Y1W2 Students will learn 14Y1WG	ting language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions. Your in PHP language. Editing of Theses in MS Word Introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, creat ons, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions, etc. Footnotes, captions, index. They practice on the principles of the principles of corrections of finished documents. They will properly apply styles, creations of finished documents. Topics will be practice on practical examples. Webdesign 1 Webdesign 2 advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, web sendirectives. Topics will be practiced on practical examples. Webdesign	KZ r own application process of content liting dissertations at the liting dissertation at the liting dissertations at the liting dissertation at the l	2 s, lists of and theses, 2 s, menu, 2 s properties inples. 2 onfiguration
Possibilities of scrip 14Y1UP Students will be if figures, tables, grap 14Y1VM Object oriented p 14Y1W1 Students will learn and selectors 14Y1W2 Students will learn 14Y1WG	Editing of Theses in MS Word Introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, creat ons, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions on that they are able to concentrate mainly on writing a thesis. Development of Applications for Mobile Devices Development environment, operating system Android, development application - widgets, permissions, services, GUI. Webdesign 1 The issue of web browsers, creating one to three column layout pages, sites validation, conditional comments. Topics will be practice Webdesign 2 advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, web sendirectives. Topics will be practiced on practical examples. Webdesign In the basics of HTTP communication, URL and addressing, HTML5 markup language, advanced CSS3 techniques, accessible and united the basics of HTTP communication, URL and addressing, HTML5 markup language, advanced CSS3 techniques, accessible and united the basics of HTTP communication, URL and addressing, HTML5 markup language, advanced CSS3 techniques, accessible and united the basics of HTTP communication, URL and addressing, HTML5 markup language, advanced CSS3 techniques, accessible and united the basics of HTTP communication, URL and addressing, HTML5 markup language, advanced CSS3 techniques, accessible and united the basics of HTTP communication, URL and addressing, HTML5 markup language, advanced CSS3 techniques, accessible and united the basics of HTTP communication, URL and addressing, HTML5 markup language, advanced CSS3 techniques, accessible and united the basics of HTTP communication, URL and addressing, HTML5 markup language, advanced CSS3 techniques, accessible and united the basics of HTTP communication, URL and addressing, HTML5 markup language, advanced CSS3 techniques, accessible and united the basics of HTTP communic	KZ r own application processing the tables of content liting dissertations at the tables of content liting dissertations at the tables of containers, thread the tables of tables	2 s, lists of and theses, 2 s, menu, 2 s properties inples. 2 onfiguration
Possibilities of scrip 14Y1UP Students will be if figures, tables, grap 14Y1VM Object oriented p 14Y1W1 Students will learn and selectors 14Y1W2 Students will learn 14Y1WG	ting language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions. Your in PHP language. Editing of Theses in MS Word Introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, creat ons, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions, etc. Footnotes, captions, index. They practice on the principles of the principles of corrections of finished documents. They will properly apply styles, creations of finished documents. Topics will be practice on practical examples. Webdesign 1 Webdesign 2 advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, web sendirectives. Topics will be practiced on practical examples. Webdesign	KZ r own application processing the tables of content liting dissertations at the tables of content liting dissertations at the tables of containers, thread the tables of tables	2 s, lists of and theses, 2 s, menu, 2 s properties inples. 2 onfiguration
Possibilities of scrip 14Y1UP Students will be if figures, tables, grap 14Y1VM Object oriented p 14Y1W1 Students will learn and selectors 14Y1W2 Students will learn 14Y1WG Students will learn	Editing of Theses in MS Word Introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, creat one, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless edits on that they are able to concentrate mainly on writing a thesis. Development of Applications for Mobile Devices Development environment, operating system Android, development application - widgets, permissions, services, GUI. Webdesign 1 The basics of communication HTTP, URL and addressing, markup languages HTML and XHTML, HTML tags, rules of web accessibility, the issue of web browsers, creating one to three column layout pages, sites validation, conditional comments. Topics will be practiced webdesign 2 advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, web sendirectives. Topics will be practiced on practical examples. Webdesign In the basics of HTTP communication, URL and addressing, HTML5 markup language, advanced CSS3 techniques, accessible and usedesign, content management systems, web server installation + configuration directives. The subject matter will be trained on experiments and the properties of the properties of the subject matter will be trained on experiments.	KZ r own application processed on practical examples. KZ te tables of content liting dissertations at the containers, thread the containers, thread the containers are the containers and the containers are the containers and the containers are the containers a	2 s, lists of and theses, 2 s, menu, 2 s properties inples. 2 onfiguration 2 esponsive
Possibilities of scrip 14Y1UP Students will be if figures, tables, grap 14Y1VM Object oriented p 14Y1W1 Students will learn and selectors 14Y1W2 Students will learn 14Y1WG Students will learn 14Y1WG 14Y1UG	Editing of Theses in MS Word Introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, creat ones, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions of the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, creat ones, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions of the property of Applications for Mobile Devices Development of Applications for Mobile Devices Development of Applications for Mobile Devices Development application - widgets, permissions, services, GUI. Webdesign 1 The basics of communication HTTP, URL and addressing, markup languages HTML and XHTML, HTML tags, rules of web accessibility, the issue of web browsers, creating one to three column layout pages, sites validation, conditional comments. Topics will be practice Webdesign 2 advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, web sendirectives. Topics will be practiced on practical examples. Webdesign In the basics of HTTP communication, URL and addressing, HTML5 markup language, advanced CSS3 techniques, accessible and usedesign, content management systems, web server installation + configuration directives. The subject matter will be trained on experimentals of programming in JAVA	KZ r own application processing the tables of content liting dissertations at the tables of content liting dissertations at the tables of containers, thread the tables of t	2 s, lists of and theses, 2 s, menu, 2 s properties inples. 2 configuration 2 esponsive
Possibilities of scrip 14Y1UP Students will be ifigures, tables, grap 14Y1VM Object oriented p 14Y1W1 Students will learn and selectors 14Y1W2 Students will learn 14Y1WG Students will learn 14Y1UG Students will learn	Editing of Theses in MS Word Introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, creat only, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions on that they are able to concentrate mainly on writing a thesis. Development of Applications for Mobile Devices Development environment, operating system Android, development application - widgets, permissions, services, GUI. Webdesign 1 The basics of communication HTTP, URL and addressing, markup languages HTML and XHTML, HTML tags, rules of web accessibility, the issue of web browsers, creating one to three column layout pages, sites validation, conditional comments. Topics will be practice. Webdesign 2 advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, web sendirectives. Topics will be practiced on practical examples. Webdesign In 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 expenditure of the programming in JAVA Java SE Platform. IDE Installation and First Project. Comments. Variables and Type System. Operators. User Input and Parsing. Chain	KZ r own application process KZ te tables of content liting dissertations a KZ containers, thread KZ y and usability, CSS and on practical exam KZ ver installation + containers, reseamples. KZ in and Chain Conve	2 s, lists of and theses, 2 s, menu, 2 s properties inples. 2 configuration 2 esponsive 2 ersion. Text
Possibilities of scrip 14Y1UP Students will be ifigures, tables, grap 14Y1VM Object oriented p 14Y1W1 Students will learn and selectors 14Y1W2 Students will learn 14Y1WG Students will learn 14Y1UG Students will learn	Editing of Theses in MS Word Introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, creat only, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions of the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, creat only, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions, etc. Footnotes, captions, index. They practice on the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, creations, etc. Footnotes, captions, index. They will properly apply styles, creations, etc. Footnotes, captions of the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, creations, etc. Footnotes, captions of the principles of programming and properly apply styles, creations, etc. Footnotes, captions of the principles of programming in JAVA Java SE Platform. IDE Installation and First Project. Comments. Variables and Type System. Operators. User Input and Parsing. Chair and entitied in the principles of the principles of the property of the program in the property in	KZ r own application process KZ te tables of content liting dissertations a KZ containers, thread KZ y and usability, CSS and on practical exam KZ ver installation + containers, reseamples. KZ in and Chain Conve	2 s, lists of and theses, 2 s, menu, 2 s properties inples. 2 configuration 2 esponsive 2 ersion. Text
Possibilities of scrip 14Y1UP Students will be ifigures, tables, grap 14Y1VM Object oriented p 14Y1W1 Students will learn and selectors 14Y1W2 Students will learn 14Y1WG Students will learn 14Y1UG Students will learn	Editing of Theses in MS Word Introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, creat only, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions on that they are able to concentrate mainly on writing a thesis. Development of Applications for Mobile Devices Development environment, operating system Android, development application - widgets, permissions, services, GUI. Webdesign 1 The basics of communication HTTP, URL and addressing, markup languages HTML and XHTML, HTML tags, rules of web accessibility, the issue of web browsers, creating one to three column layout pages, sites validation, conditional comments. Topics will be practice. Webdesign 2 advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, web sendirectives. Topics will be practiced on practical examples. Webdesign In 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 expenditure of the programming in JAVA Java SE Platform. IDE Installation and First Project. Comments. Variables and Type System. Operators. User Input and Parsing. Chain	KZ r own application process KZ te tables of content liting dissertations a KZ containers, thread KZ y and usability, CSS and on practical exam KZ ver installation + containers, reseamples. KZ in and Chain Conve	2 s, lists of and theses, 2 s, menu, 2 s properties inples. 2 configuration 2 esponsive 2 ersion. Text
Possibilities of scrip 14Y1UP Students will be ifigures, tables, grap 14Y1VM Object oriented p 14Y1W1 Students will learn and selectors 14Y1W2 Students will learn 14Y1WG Students will learn 14Y1UG Students will learn 14Y1UG Students will learn	Editing of Theses in MS Word In PHP language. Editing of Theses in MS Word Introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, creat only, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions of the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, creat only only writing a thesis. Development of Applications for Mobile Devices Development of Applications for Mobile Devices Development environment, operating system Android, development application - widgets, permissions, services, GUI. Webdesign 1 Webdesign 1 Webdesign 2 advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, web sendirectives. Topics will be practiced on practical examples. Webdesign In the basics of HTTP communication, URL and addressing, HTML5 markup language, advanced CSS3 techniques, accessible and unwebdesign, content management systems, web server installation + configuration directives. The subject matter will be trained on expenditure of the programming in JAVA Java SE Platform. IDE Installation and First Project. Comments. Variables and Type System. Operators. User Input and Parsing. Chair matters and the programment of the parameters, return value, recursion. Program creation.	KZ r own application processing the tables of content liting dissertations at the tables of content liting dissertations at the tables of containers, thread to the table with the table was at the table web rules, researches. KZ usable web rules, researches. KZ in and Chain Convertical conver	2 s, lists of and theses, 2 s, menu, 2 s properties inples. 2 configuration 2 esponsive 2 ersion. Text unctions,
Possibilities of scrip 14Y1UP Students will be ifigures, tables, grap 14Y1VM Object oriented p 14Y1W1 Students will learn and selectors 14Y1W2 Students will learn 14Y1WG Students will learn 14Y1UG Students will learn 14Y1ZJ Introduction to the Chain and Mathe	Editing of Theses in MS Word In PHP language. Editing of Theses in MS Word Introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, creat ons, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions of the goal is to prepare students for seamless editions, etc. Footnotes, captions, index. They practice occurrents mainly on writing a thesis. Development of Applications for Mobile Devices Development of Applications for Mobile Devices Webdesign 1 Webdesign 1 Webdesign 1 Webdesign 2 advanced fechniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, web sendirectives. Topics will be practiced on practical examples. Webdesign In 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 expenditure of the programming in JAVA Java SE Platform. IDE Installation and First Project. Comments. Variables and Type System. Operators. User Input and Parsing. Chairmatical Methods. Terms. Relational Operators and Switches. Cycles for, while, foreach. Field - declaration, initialization, methods for for parameters, return value, recursion. Program creation. Fundamentals of parametric and adaptive modeling	KZ r own application process of content liting dissertations at the liting dissertation at the li	2 s, lists of and theses, 2 s, menu, 2 s properties inples. 2 configuration 2 esponsive 2 ersion. Text unctions, 2
Possibilities of scrip 14Y1UP Students will be ifigures, tables, grap 14Y1VM Object oriented p 14Y1W1 Students will learn and selectors 14Y1W2 Students will learn 14Y1WG Students will learn 14Y1UG Students will learn 14Y1ZJ Introduction to the Chain and Mathe	Editing of Theses in MS Word In PHP language. Editing of Theses in MS Word Introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, creat ons, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions, etc. Footnotes, captions, index. They practice on the goal is to prepare students for seamless editions, etc. Footnotes, captions, index. They practice on the goal is to prepare students for seamless editions, etc. Footnotes, captions for Mobile Devices Development of Applications for Mobile Devices Development of Applications for Mobile Devices Webdesign 1 Webdesign 1 Webdesign 2 advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, web send directives. Topics will be practiced on practical examples. Webdesign In the basics of HTTP communication, URL and addressing, HTML5 markup language, advanced CSS3 techniques, accessible and unwebdesign, content management systems, web server installation + configuration directives. The subject matter will be trained on expenditure of the programming in JAVA Java SE Platform. IDE Installation and First Project. Comments. Variables and Type System. Operators. User Input and Parsing. Chair mattical Methods. Terms. Relational Operators and Switches. Cycles for, while, foreach. Field - declaration, initialization, methods for for parameters, return value, recursion. Program creation. Fundamentals of parametric and adaptive modeling roducts and parts crea	KZ r own application process of content liting dissertations at the liting dissertation at the li	2 s, lists of and theses, 2 s, menu, 2 s properties inples. 2 configuration 2 esponsive 2 ersion. Text unctions, 2
Possibilities of scrip 14Y1UP Students will be ifigures, tables, grap 14Y1VM Object oriented p 14Y1W1 Students will learn and selectors 14Y1W2 Students will learn 14Y1WG Students will learn 14Y1ZJ Introduction to the Chain and Mathe 14Y1ZM Basics of work at p	Editing of Theses in MS Word In PHP language. Editing of Theses in MS Word Introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, creat ons, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions of the goal is to prepare students for seamless editions, etc. Footnotes, captions, index. They practice occurrents mainly on writing a thesis. Development of Applications for Mobile Devices Development of Applications for Mobile Devices Webdesign 1 Webdesign 1 Webdesign 1 Webdesign 2 advanced fechniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, web sendirectives. Topics will be practiced on practical examples. Webdesign In 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 expenditure of the programming in JAVA Java SE Platform. IDE Installation and First Project. Comments. Variables and Type System. Operators. User Input and Parsing. Chairmatical Methods. Terms. Relational Operators and Switches. Cycles for, while, foreach. Field - declaration, initialization, methods for for parameters, return value, recursion. Program creation. Fundamentals of parametric and adaptive modeling	KZ r own application process of content liting dissertations at the liting dissertation at the li	2 s, lists of and theses, 2 s, menu, 2 s properties inples. 2 configuration 2 esponsive 2 ersion. Text unctions, 2
Possibilities of scrip 14Y1UP Students will be ifigures, tables, grap 14Y1VM Object oriented p 14Y1W1 Students will learn and selectors 14Y1W2 Students will learn 14Y1WG Students will learn 14Y1UG Students will learn 14Y1ZJ Introduction to the Chain and Mathe	Editing of Theses in MS Word In PHP language. Editing of Theses in MS Word Introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, creat ons, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editions, etc. Footnotes, captions, index. They practice on the goal is to prepare students for seamless editions, etc. Footnotes, captions, index. They practice on the goal is to prepare students for seamless editions, etc. Footnotes, captions for Mobile Devices Development of Applications for Mobile Devices Development of Applications for Mobile Devices Webdesign 1 Webdesign 1 Webdesign 2 advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, web send directives. Topics will be practiced on practical examples. Webdesign In the basics of HTTP communication, URL and addressing, HTML5 markup language, advanced CSS3 techniques, accessible and unwebdesign, content management systems, web server installation + configuration directives. The subject matter will be trained on expenditure of the programming in JAVA Java SE Platform. IDE Installation and First Project. Comments. Variables and Type System. Operators. User Input and Parsing. Chair mattical Methods. Terms. Relational Operators and Switches. Cycles for, while, foreach. Field - declaration, initialization, methods for for parameters, return value, recursion. Program creation. Fundamentals of parametric and adaptive modeling roducts and parts crea	KZ r own application process of content liting dissertations at the liting dissertation at the li	2 s, lists of and theses, 2 s, menu, 2 s properties inples. 2 configuration 2 esponsive 2 ersion. Text unctions, 2
Possibilities of scrip 14Y1UP Students will be ifigures, tables, grap 14Y1VM Object oriented p 14Y1W1 Students will learn and selectors 14Y1W2 Students will learn 14Y1WG Students will learn 14Y1ZJ Introduction to the Chain and Mathe 14Y1ZM Basics of work at p	Editing of Theses in MS Word Introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, creat ons, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless edits on that they are able to concentrate mainly on writing a thesis. Development of Applications for Mobile Devices Development application - widgets, permissions, services, GUI. Webdesign 1 The issue of web browsers, creating one to three column layout pages, sites validation, conditional comments. Topics will be practice Webdesign 2 advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, web sendirectives. Topics will be practiced on practical examples. Webdesign In the basics of HTTP communication, URL and addressing, HTML5 markup language, advanced CSS3 techniques, accessible and u webdesign, content management systems, web server installation + configuration directives. The subject matter will be trained on e Fundamentals of programming in JAVA Java SE Platform. IDE Installation and First Project. Comments. Variables and Type System. Operators. User Input and Parsing. Chairmatical Methods. Terms. Relational Operators and Switches. Cycles for, while, foreach. Field - declaration, initialization, methods for f parameters, return value, recursion. Program creation. Fundamentals of parametric and adaptive modeling roducts and parts creation. Sketch drawing by help of geometric relations, parametric dimensions, creation of adaptive models from 21 from and to another systems. Fundamentals of assemblies creation. Data Processing	KZ r own application provided in the content of the	2 s, lists of and theses, 2 s, menu, 2 s properties inples. 2 configuration 2 esponsive 2 and export 3
Possibilities of scrip 14Y1UP Students will be ifigures, tables, grap 14Y1VM Object oriented p 14Y1W1 Students will learn and selectors 14Y1W2 Students will learn 14Y1WG Students will learn 14Y1UG Students will learn 14Y1ZJ Introduction to the Chain and Mathe 14Y1ZM Basics of work at p 14ZDA Introduction to data	Editing of Theses in MS Word in PHP language. Editing of Theses in MS Word introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, creat only, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless ed so that they are able to concentrate mainly on writing a thesis. Development of Applications for Mobile Devices permissions, services, GUI. Webdesign 1 The basics of communication HTTP, URL and addressing, markup languages HTML and XHTML, HTML tags, rules of web accessibility, the issue of web browsers, creating one to three column layout pages, sites validation, conditional comments. Topics will be practice webdesign 2 advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, web sendirectives. Topics will be practiced on practical examples. Webdesign In the basics of HTTP communication, URL and addressing, HTML5 markup language, advanced CSS3 techniques, accessible and unwebdesign, content management systems, web server installation + configuration directives. The subject matter will be trained on expendent to the programment of programming in JAVA Java SE Platform. IDE Installation and First Project. Comments. Variables and Type System. Operators. User Input and Parsing. Chair matical Methods. Terms. Relational Operators and Switches. Cycles for, while, foreach. Field - declaration, initialization, methods for from parameters, return value, recursion. Program creation. Fundamentals of parametric and adaptive modeling roducts and parts creation. Sketch drawing by help of geometric relations, parametric dimensions, creation of adaptive models from 21 from and to another systems. Fundamentals of assemblies creation.	KZ r own application processing from practices KZ te tables of content liting dissertations at the containers, thread to the containers, the containers that the co	2 s, lists of and theses, 2 s, menu, 2 s properties inples. 2 configuration 2 esponsive 2 and export 3

15DPLG	Transportation Psychology	Z	2
bject of psycholog	gy and its basic concepts. Information intake, decision-making and behaviour. Performance. Engineering psychology and vehicle const	truction. Psycholog	gical aspe
of travel	route and traffic conditions, accidents and traffic incidents. Selection and training of the staff. Work and leisure. Age as a factor in training of the staff.	ansport operation.	
15JZ1A	Foreign Language - English 1	Z	3
ammatical Structu	ares and Style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and co	mmunicative skills	Element
:	stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles of	of rhetoric.	
15JZ2A	Foreign Language - English 2	Z,ZK	3
ammatical structu	res and style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and co	mmunicative skills	Element
:	stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles of	of rhetoric.	
15JZ3F	Foreign Language - French 3	Z	3
rammar and stylis	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la	anguage structure	knowled
nd perceptive and	communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v	with (professional)	text and
	features. Practice of oral and written presentation.		
15JZ3I	Foreign Language - Italian 3	Z	3
rammar and stylis	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la	anguage structure	knowled
nd perceptive and	communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work was a communicative skills, vocabulary development.	with (professional)	text and
	features. Practice of oral and written presentation.		
15JZ3N	Foreign Language - German 3	Z	3
	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la		
nd perceptive and	communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v	with (professional)	text and
	features. Practice of oral and written presentation.		
15JZ3R	Foreign Language - Russian 3	Z	3
•	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language level and study focus at the Faculty.	0 0	
nd perceptive and	communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v	with (professional)	text and
	features. Practice of oral and written presentation.		1
15JZ3S	Foreign Language - Spanish 3	Z	3
=	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la		
d perceptive and	communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v	with (professional)	text and
	features. Practice of oral and written presentation.		_
15JZ4F	Foreign Language - French 4	Z,ZK	3
	ttics. 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.		
nd perceptive and	communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v	with (professional)	text and
	features. Practice of oral and written presentation.		
	<u> </u>		
15JZ4I	Foreign Language - Italian 4	Z,ZK	3
rammar and stylis	Foreign Language - Italian 4 stics. 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.	anguage structure	knowled
rammar and stylis	Foreign Language - Italian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v	anguage structure	knowled
rammar and stylis	Foreign Language - Italian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lacommunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work vocabulary development. Basic stylistic forms and written presentation.	anguage structure	knowled text and
rammar and stylis and perceptive and	Foreign Language - Italian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lacommunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work features. Practice of oral and written presentation. Foreign Language - German 4	anguage structure with (professional)	knowled text and
rammar and stylis nd perceptive and 15JZ4N rammar and stylis	Foreign Language - Italian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lacommunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - German 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lacest conversation and professional topics based on the language level and study focus at the Faculty.	anguage structure with (professional) Z,ZK anguage structure	knowled text and
rammar and stylis nd perceptive and 15JZ4N rammar and stylis	Foreign Language - Italian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - German 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lacommunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of the stick is a stylistic forms. Presentation of own knowledge in oral and written form.	anguage structure with (professional) Z,ZK anguage structure	knowled text and
rammar and stylis and perceptive and 15JZ4N rammar and stylis and perceptive and	Foreign Language - Italian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - German 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation.	anguage structure with (professional) Z,ZK anguage structure with (professional)	knowled text and
rammar and stylis and perceptive and 15JZ4N rammar and stylis and perceptive and 15JZ4R	Foreign Language - Italian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - German 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Russian 4	anguage structure with (professional) Z,ZK anguage structure with (professional) Z,ZK	knowled text and 3 knowled text and 3
rammar and stylisted perceptive and 15JZ4N rammar and stylisted perceptive and 15JZ4R rammar	Foreign Language - Italian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - German 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Russian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lastics.	anguage structure with (professional) Z,ZK anguage structure with (professional) Z,ZK anguage structure	knowled text and sknowled text
rammar and stylisted perceptive and 15JZ4N rammar and stylisted perceptive and 15JZ4R rammar	Foreign Language - Italian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lacommunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - German 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lacommunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Russian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lacommunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of the communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of the communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of the communicative skills, vocabulary development.	anguage structure with (professional) Z,ZK anguage structure with (professional) Z,ZK anguage structure	knowled text and sknowled text
rammar and stylisted perceptive and 15JZ4N rammar and stylisted perceptive and 15JZ4R rammar and stylisted perceptive and stylisted perceptive and	Foreign Language - Italian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lactor communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - German 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lactor communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Russian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lactors are communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation.	Z,ZK anguage structure with (professional) Z,ZK anguage structure with (professional) Z,ZK anguage structure with (professional)	knowled text and 3 knowled text and 3 knowled text and 4 knowled text and
15JZ4N rammar and stylisted perceptive and stylisted perceptive and 15JZ4R rammar and stylisted perceptive and stylisted perceptive and 15JZ4R rammar and stylisted perceptive and 15JZ4S	Foreign Language - Italian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lactor communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - German 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lactor communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Russian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lactors are communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Spanish 4	anguage structure with (professional) Z,ZK anguage structure with (professional) Z,ZK anguage structure with (professional) Z,ZK anguage structure with (professional)	knowled text and sknowled text
15JZ4N rammar and stylisted perceptive and stylisted perceptive and 15JZ4R rammar and stylisted perceptive and 15JZ4R rammar and stylisted perceptive and 15JZ4S	Foreign Language - Italian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lacommunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - German 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lacommunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Russian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lacommunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Spanish 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lactics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lactics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lactics.	Z,ZK anguage structure with (professional)	knowled text and showled text and showle
15JZ4N rammar and stylisted perceptive and stylisted perceptive and 15JZ4R rammar and stylisted perceptive and 15JZ4R rammar and stylisted perceptive and 15JZ4S	Foreign Language - Italian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lactor communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - German 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lactor communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Russian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lactor communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Spanish 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lactor communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of the language level and study focus at the Faculty. Improvement of lactor communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of the language level and study focus at the Faculty. Improvement of lactor communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of the language level and study focus at the faculty of lactor communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of the language level and study focus at the faculty of lactor communicativ	Z,ZK anguage structure with (professional)	knowled text and sknowled skno
ammar and stylis d perceptive and 15JZ4N ammar and stylis d perceptive and 15JZ4R ammar and stylis d perceptive and 15JZ4S ammar and stylis d perceptive and 4 perceptive and 5	Foreign Language - Italian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lacommunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - German 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lacommunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Russian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lacommunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Spanish 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lacommunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation.	Z,ZK anguage structure with (professional)	knowled text and sknowled text
ammar and stylis d perceptive and 15JZ4N ammar and stylis d perceptive and 15JZ4R ammar and stylis d perceptive and 15JZ4S ammar and stylis d perceptive and 15JZ4S ammar and stylis d perceptive and 15X31D	Foreign Language - Italian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lactor communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - German 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lactor communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Russian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lactor communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Spanish 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lactors. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lactors. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lactors. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lactors are represented to the features. Practice of oral and written presentation. Project 1 DOS	Z,ZK anguage structure with (professional)	knowlectext and sknowlectext and
ammar and stylis d perceptive and 15JZ4N ammar and stylis d perceptive and 15JZ4R ammar and stylis d perceptive and 15JZ4S ammar and stylis d perceptive and d perceptive and	Foreign Language - Italian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lacommunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - German 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lacommunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Russian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lacommunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Spanish 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lacommunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation.	Z,ZK anguage structure with (professional)	knowled text and sknowled text
ammar and stylis d perceptive and 15JZ4N ammar and stylis d perceptive and 15JZ4R ammar and stylis d perceptive and 15JZ4S ammar and stylis d perceptive and 15JZ4S ammar and stylis d perceptive and 15X31D	Foreign Language - Italian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lactor communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - German 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lactor communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Russian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lactor communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Spanish 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lactors. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lactors. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lactors. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lactors are represented to the features. Practice of oral and written presentation. Project 1 DOS	Z,ZK anguage structure with (professional)	knowled text and sknowled text
ammar and stylis d perceptive and 15JZ4N ammar and stylis d perceptive and 15JZ4R ammar and stylis d perceptive and 15JZ4S ammar and stylis d perceptive and 15JZ4S ammar and stylis d perceptive and 15X31D 15X32D 15X33D	Foreign Language - Italian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - German 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Russian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Spanish 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Project 1 DOS Project 2 DOS Project 3 DOS	Z,ZK anguage structure with (professional) Z Z Z	knowled text and sknowled text
ammar and stylis d perceptive and 15JZ4N ammar and stylis d perceptive and 15JZ4R ammar and stylis d perceptive and 15JZ4S ammar and stylis d perceptive and 15JZ4S ammar and stylis d perceptive and 15X31D 15X32D 15X33D 15Y1BO	Foreign Language - Italian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - German 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Russian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Spanish 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Project 1 DOS Project 2 DOS Project 2 DOS Project 3 DOS Work Safety and Health Protection in Transportation	anguage structure with (professional) Z,ZK anguage structure with (professional) Z Z Z KZ	knowled text and sknowled text
15JZ4R rammar and stylist d perceptive and 15JZ4R rammar and stylist d perceptive and 15JZ4S rammar and stylist d perceptive and 15JZ4S rammar and stylist d perceptive and 15X31D 15X32D 15X33D 15Y1BO	Foreign Language - Italian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - German 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Russian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Spanish 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Project 1 DOS Project 2 DOS Project 3 DOS	anguage structure with (professional) Z,ZK anguage structure with (professional) Z Z Z KZ	knowled text and sknowled text
15JZ4R rammar and stylist d perceptive and 15JZ4R rammar and stylist d perceptive and 15JZ4S rammar and stylist d perceptive and 15JZ4S rammar and stylist d perceptive and 15X31D 15X32D 15X33D 15Y1BO undamental legisla	Foreign Language - Italian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lacommunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - German 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lacommunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Russian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lacommunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Spanish 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lacommunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Project 1 DOS Project 1 DOS Project 2 DOS Project 2 DOS Project 3 DOS Work Safety and Health Protection in Transportation attive, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation. Health insurance of home and foreign business trips, statistics, working practice.	anguage structure with (professional) Z,ZK anguage structure with (professional) Z Z KZ ealth protection p	3 knowled text and know
15JZ4N 15JZ4R 15JZ4R 15JZ4R 15JZ4R 15JZ4R 15JZ4R 15JZ4S 15	Foreign Language - Italian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lacommunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - German 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lacommunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Russian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lacommunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Spanish 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lacommunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Project 1 DOS Project 1 DOS Project 2 DOS Project 2 DOS Project 3 DOS Work Safety and Health Protection in Transportation ative, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation. Health insurance of home and foreign business trips, statistics, working practice. History of Railway	anguage structure with (professional) Z,ZK anguage structure with (professional) Z Z Z KZ ealth protection p	knowled text and sknowled text
ammar and stylis d perceptive and 15JZ4N ammar and stylis d perceptive and 15JZ4R ammar and stylis d perceptive and 15JZ4S ammar and stylis d perceptive and 15JZ4S ammar and stylis d perceptive and 15X31D 15X32D 15X33D 15Y1BO ndamental legislatorse-drawn railways and 15Y1DZ orse-drawn railways and 15Y1DZ orse-drawn railways and 15Y1DZ orse-drawn railways and 15JZ4N railways and 15JZ4	Foreign Language - Italian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lacommunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - German 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lacommunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Russian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lacommunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Spanish 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lacommunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Project 1 DOS Project 1 DOS Project 2 DOS Project 2 DOS Project 3 DOS Work Safety and Health Protection in Transportation attive, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation. Health insurance of home and foreign business trips, statistics, working practice.	anguage structure with (professional) Z,ZK anguage structure with (professional) Z Z Z KZ ealth protection p	Rnowled text and sknowled text
ammar and stylis d perceptive and 15JZ4N ammar and stylis d perceptive and 15JZ4R ammar and stylis d perceptive and 15JZ4S ammar and stylis d perceptive and 15X31D 15X32D 15X33D 15Y1BO Indamental legislations of the perceptive and 15Y1DZ orse-drawn railways and 15Y1DZ orse-drawn railways and 15Y1DZ orse-drawn railways and 15Y1DZ orse-drawn railways and 15UZ4N railways and 15Y1DZ orse-drawn railways and 15ZZ4N railways and	Foreign Language - Italian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lacommunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - German 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lacommunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Russian 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lacommunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Spanish 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lacommunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Spanish 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lacommunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Project 1 DOS Project 1 DOS Project 2 DOS Project 2 DOS Project 3 DOS Work Safety and Health Protection in Transportation ative, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation. Health insurance of home and fo	anguage structure with (professional) Z,ZK anguage structure with (professional) Z Z Z KZ ealth protection p	knowled text and sknowled text
ammar and stylis d perceptive and 15JZ4N ammar and stylis d perceptive and 15JZ4R ammar and stylis d perceptive and 15JZ4S ammar and stylis d perceptive and 15JZ4S ammar and stylis d perceptive and 15X31D 15X32D 15X33D 15Y1BO indamental legislatic orse-drawn railways, railw	Foreign Language - Italian 4 titics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lacommunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work features Practice of oral and written presentation. Foreign Language - German 4 titics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lacommunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Russian 4 stitics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lacommunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Spanish 4 stitics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lacommunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Spanish 4 stitics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lacommunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Project 1 DOS Project 1 DOS Project 2 DOS Project 3 DOS Work Safety and Health Protection in Transportation ative, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation. Health insurance of home and foreign busin	anguage structure with (professional) Z,ZK anguage structure with (professional) Z Z KZ ealth protection p	knowled text and sknowled text
ammar and stylisted perceptive and stylisted stylisted perceptive and s	Foreign Language - Italian 4 titics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of its communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - German 4 titics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of late communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Russian 4 titics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of late communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Spanish 4 titics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of late communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Project 1 DOS Project 1 DOS Project 2 DOS Project 3 DOS Work Safety and Health Protection in Transportation ative, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation. Health insurance of home and foreign business trips, statistics, working practice. History of Railway and development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repray development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repray development in the 2nd half of 19th century, regional railways epoch, rail	anguage structure with (professional) Z,ZK anguage structure with (professional) Z Z KZ ealth protection p KZ ublic", electric tracons, railway lines of	knowled text and sknowled text
ammar and stylisted perceptive and stylisted stylisted perceptive and s	Foreign Language - Italian 4 titics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - German 4 titics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Russian 4 titics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Spanish 4 titics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Spanish 4 titics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Project 1 DOS Project 1 DOS Project 2 DOS Project 2 DOS Project 3 DOS Work Safety and Health Protection in Transportation ative, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation. Health insurance of h	anguage structure with (professional) Z,ZK anguage structure with (professional) Z Z Z KZ ealth protection p KZ ublic", electric tractions, railway lines of KZ ttle Entente, its pr	knowled text and sknowled text
rammar and stylisted perceptive and stylisted	Foreign Language - Italian 4 titics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - German 4 titics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Russian 4 titics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Spanish 4 titics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Spanish 4 titics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Project 1 DOS Project 2 DOS Project 2 DOS Project 2 DOS Project 3 DOS Work Safety and Health Protection in Transportation ative, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation. Health insurance of h	anguage structure with (professional) Z,ZK anguage structure with (professional) Z Z Z KZ ealth protection p KZ ublic", electric tractions, railway lines of KZ ttle Entente, its pr	knowled text and sknowled text
rammar and stylisted perceptive and stylisted stylisted stylisted perceptive and stylisted stylisted stylisted stylisted perceptive and stylisted styli	Foreign Language - Italian 4 titics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of a communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work features. Practice of oral and written presentation. Foreign Language - German 4 titics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of a communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work features. Practice of oral and written presentation. Foreign Language - Russian 4 titics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of a communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work features. Practice of oral and written presentation. Foreign Language - Spanish 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of a communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Project 1 DOS Project 1 DOS Project 1 DOS Project 2 DOS Project 2 DOS Project 2 DOS Work Safety and Health Protection in Transportation at two presentation of terms, risks and possible health damage, working conditions and health protection with focus on transportation. Health insurance of home and foreign business trips, statistics, working practice. History of Railway and evelopment 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 ormation of n	anguage structure with (professional) Z,ZK anguage structure with (professional) Z Z Z KZ ealth protection p KZ ublic", electric trace ons, railway lines of the consequences of the consequ	knowled text and sknowled text
ammar and stylisted perceptive and stylisted stylisted perceptive and s	Foreign Language - Italian 4 tics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of a communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - German 4 tics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of a communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Russian 4 tics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of a communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Spanish 4 tics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of a communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Project 1 DOS Project 1 DOS Project 2 DOS Project 2 DOS Project 3 DOS Work Safety and Health Protection in Transportation ative, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation. Health insurance of home and foreign business trips, statistics, working practice. History of Railway apys, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repay ay development in the 2nd half of 20th century, high-speed railway origins, railway linuctions. Excursions and projections. European Integration	anguage structure with (professional) Z,ZK anguage structure with (professional) Z Z Z KZ ealth protection p KZ ublic", electric tractions, railway lines of the consequences of the consequ	knowled text and sknowled text
ammar and stylis d perceptive and 15JZ4N ammar and stylis d perceptive and 15JZ4R ammar and stylis d perceptive and 15JZ4S ammar and stylis d perceptive and 15JZ4S ammar and stylis d perceptive and 15X31D 15X32D 15X33D 15Y1BO Indamental legislation of the perceptive and 15Y1DZ orse-drawn railways, railway	Foreign Language - Italian 4 titics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of Ic communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - German 4 titics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of Ic communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Russian 4 titics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of Ic communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Spanish 4 titics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of Ic communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of the states. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of Ic communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of the states. Practice of oral and written presentation. Project 1 DOS Project 2 DOS Project 2 DOS Project 3 DOS Work Safety and Health Protection in Transportation ative, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation. Health insurance of home and foreign business trips, statistics, working practice. History of Railway and the pr	anguage structure with (professional) Z,ZK anguage structure with (professional) Z Z Z KZ ealth protection p KZ ublic", electric trace ons, railway lines of the consequences of the consequ	knowled text and sknowled text
ammar and stylisted perceptive and stylisted stylisted perceptive and s	Foreign Language - Italian 4 tics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of a communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - German 4 tics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of a communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Russian 4 tics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of a communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Foreign Language - Spanish 4 tics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of a communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Project 1 DOS Project 1 DOS Project 2 DOS Project 2 DOS Project 3 DOS Work Safety and Health Protection in Transportation ative, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation. Health insurance of home and foreign business trips, statistics, working practice. History of Railway apys, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repay ay development in the 2nd half of 20th century, high-speed railway origins, railway linuctions. Excursions and projections. European Integration	anguage structure with (professional) Z,ZK anguage structure with (professional) Z Z Z KZ ealth protection p KZ ublic", electric trace ons, railway lines of the consequences of the consequ	knowled text and sknowled text

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	factors on health of	of workers.
Creation and prote	ction of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technology to public health.	ossibilities and skil	lls of a man.
	Practical examples from the field of transportation; relevant legislature.		
15Y1HL	History of Civil Aviation	KZ	2
	g, development of aircrafts lighter than air. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of a	•	•
vvoria airports. F	amous aviators. Helicopters. CSA airplanes. Development of aircrafts in Czechoslovakia between the years 1945-1989. Classic era o aviation. Modern era of civil aviation. Airline companies. Supersonic flying.	ı avlatıon. Golden	era of civil
15Y1MK		KZ	2
TOTTIVIN	Modern History in Context: Every Day Life and Transport Historical overview of modern history of every day life, science, technology and transport in a wider context.	KZ	2
15Y1NE	German in the Economy and Society	KZ	2
	and social issues of German speaking countries and of the EU. Reading and listening of texts. Lexical, grammatical and semantic ar	I	I
recent conomic	selected topics.	lary 515 of texts. Dis	000000000000000000000000000000000000000
15Y1ZV	East-West dichotomy: Prelude to the Cold War	KZ	2
	, evolution of the "West" and "East" from the 1500s. Focus on the history in the period between 1850 nad 1950. Milestones and continu	I	I
in the end of 19th	century and the beginning of the 20th century. Revolutions, the causes and consequences. Scientific and technological progress, the	e causes and cons	sequences.
	Economic and financial history. Social changes. Discussions on texts, sources.		
16DOKY	Vehicle Technology	Z,ZK	5
Technical nom	enclature in transportation technology. Vehicle in legislation. Design. Operation. Influence on environment. Vehicle and ecology. Traction	-	eristics -
	combustion engines, electric engines, change of energy principles. Powertrain construction. Power transmission. Brake syste		
16DYJV	Vehicle Dynamics	Z,ZK	5
	hanics. Wheel and axle suspension mechanism. Wheel to road positioning characteristics. Wheel - road contact. Skid and its characteristics wheel - road contact. Skid and its characteristics wheel - road contact.	_	
acceleration and d	eceleration. Vertical dynamics, spring suspension, driving characteristics. Directional dynamics, gyroscopical characteristics. Driving sta	ability conditions. F	nerodynamic
16DA\/	forces. Driving and feedback. ABS, ESP.	7.71/	1
16PAV	Passive Safety luation. Testing and legislation. Crash tests. Carbody properties. Injury mechanics. Restrain systems. Airbags. Road user safety. Mathe	Z,ZK	4
Noau accident eva	safety systems.	ematic modelling. F	- OST COMISION
16UDOP	Introduction into Vehicles	Z	2
	portation systems. Functionality and setup. Movement and drive principles. Engines and their characteristics. Rail, road, air and wate	_	1
vomoioo ana nanc	of transport. Lifting equipment and conveyors. Legislation.	r transport. 7 ttorrit	auvo moano
16X31D	Project 1 DOS	Z	2
16X32D	Project 2 DOS	Z	2
16X33D	Project 3 DOS	Z	4
16Y1EN		KZ	2
-	Energy Requirements of Vehicles cdriving inertial of the vehicles. Types of energy - kinetic, static, heat, chemical and others. Ways of energy change into kinetic energy	I	_
Dynamics and the	drive, steam engine, air engine. Energy accumulation means, accumulator, flywheel, fuel cell. Energy recuperation. WTW anal	-	ino, cicotrio
16Y1IS	Interactive simulators and simulations	KZ	2
	ry and application of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical m	I	1
	lation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and intera		
16Y1KS	Quality and Reliability of Vehicles	KZ	2
	bility theory in design, development, production and operation of vehicles. Definition and possible approach to quality and reliability. K	ey legislation. FME	A (Failure
Mode and Effects	Analysis), QFD (Quality Function Deployment), DFx (Design for Assamly, Manufacturying, Quality, Services) and other methods upon the control of the cont	ised in industrial a	pplications.
	Knowledge-based systems of quality and reliability, data collection.		
16Y1PV	Operation, Construction and Maintenance of Vehicles	KZ	2
Methods of vehicle	e production. Vehicle maintenance. Vehicle diagnostics. Maintenence and repair plans. Engine maintenance and emission measurement	ent. Transmission r	mechanism.
	General principles of engine diagnostics.		
16Y1RE	Control and Electronic Vehicle Systems	KZ	2
	ots of regulation. Tools for analytical solution, linear system description. Basic types of a regulator (PID), properties, advantages, disadva		
and hybrid drive	e control. Electric drive. Vehicle communication bus (CAN, LIN, FlexRay, ISObus, KWP2000 protocole etc.). Vehicle electronic control, comfort systems.	sarety, communic	ation and
16Y1SO	Strategy and innovation in mobility	KZ	2
	novation, definition. Innovation strategy. Innovation life cycle and ecosystem, main sources and funding opportunities. Successful inno		1
	ation. Sprint method and its use. Innovative business model - main patterns and examples, design, strategy, processes and outlook (
, , , , , , , , , , , , , , , , , , ,	of use). Creating an innovation strategy. Customer and value map, design and testing.		F
16Y1VT	Development in Railroad Vehicles	KZ	2
	s traction. Railroad vehicle parametres regulation. Control and driving of railroad vehicles. Importance in heavy duty and personal trai	I	1
	assesment. New materials in design. International standardization.		
16Y1ZG	Introduction into Applied Computer Graphics	KZ	2
	s, division and applications with emphasis on transport, including development and research. Colours, colour perception, colour sche		ciples of 2D
and 3D generati	on, elementary algorithms for graphic data workout. Visualisation principles and tasks, technics, graphics and visualisation HW basic	s. Introduction to 2	D and 3D
	graphics software.	ı	
16Y1ZL	Vehicle Testing, Legislation and Construction	KZ	2
	otorbike costruction, aggregate computing, driving resistance, build and parameters of traction, constructional arrangement of personal of		, motorbikes,
	slation in the EU and in the world, technical legislation creation, testing methods, vehicle tests, accelerated tests, mathematical mode		
17FID	Financing and Investment in Transport	Z,ZK	4
	ng of transport infrastructure, the role of public administration in the financing and realization of investment in transport, the investment		cie, subsidy
	programs and their rules, competition, effectiveness and efficiency of spending public funds, evaluation systems of public projects and		2
17TEDL Rasic terms in tran	Transport Technology and Logistics sport technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and freight tran	KZ	3
	odus, technologic factors of the side of operator and client, organisation of city transport, logistic technologies and their aplication us		
17X31D	Project 1 DOS	Z	2
,	1 10,000 1 5 0 0	. —	

17X32D	Project 21 DOS	Z	2
17X33D	Project 3 DOS	Z	4
17Y1EV	Public Sector Economy	KZ	2
	cial theory of public sector, public choice theory, externalites, decisions about public finance allocation, economic assesment of public		
	R, state budget, management of public projects a their economic efficiency assessment, way of elaboration of PPP projects, funding from		<u> </u>
17Y1LL	Logistics of Passenger and Freight Air Transport	KZ	2
Logistics airline pas	senger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial trans	sport process pas	ssengers and
17Y1MD	air cargo. Information systems in air transport. Global distribution systems.	KZ	2
	Marketing in Transportation of marketing applied to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transport a		_
Concrai principios	the application of marketing.	and the resulting d	illicronoco ill
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		
	nancing), savings and investments (investment horizon, return, risk, investment strategy), insurance (insurance types, suitability and		
	(retirement savings and insurance).		
17Y1PM	Personnel Management	KZ	2
	es, work group, man as personality, planning, choice, evaluation and education of human sources, work adaptation, teamwork, inter		1
17Y1SK	Urban and Regional Rail Transport Systems	KZ	2
	ransport demand, modal-split, distribution of passenger flows on public regional transport lines. Optimization of line management, linetimetable. Vehicle circulation creation. Optimizing driver shifts and arranging them in turnus. Effects of barrier-free and public transport.		
evaluation of the	timetable. Vehicle circulation creation. Optimizing driver shifts and arranging them in turnus. Effects of barrier-free and public transposers. marketing.	ort preierences. I	rie roie oi
17Y1SL	Sociology of Human Resources	KZ	2
	Sociology of Human Resources nd their importance, work group as a special kind of social group, communication, personal management, modern management, hum	l .	1
	of the organization.		g, canal
17Y1ST	Titan Simulation	KZ	2
	ement game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same produ	I	_
_	ity 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.		
18DYKS	Dynamics of Structures and Systems	Z,ZK	3
-	s with multiple degrees of freedom. Natural modes and natural frequencies. Method of stiffness constants, method of elastic constant		
Systems with contin	uously distributed mass. Matrix form of equations of vibration. Finite element method in dynamics of structures. Solving vibrations by s Subspace iteration methods. Introduction to nonlinear vibrations.	uperposition of na	aturai modes
18KIDY		Z.ZK	4
-	Kinematics and Dynamics g a line and a curve. Kinematics of rigid body. Kinematics of the point mass and the system of mass points. Dynamics of a mass poin	_,	1
	n. Method of Newton. D'Alembert principle. Free and forced vibration with one degree of freedom. Viscous damping. Impact theory. In	-	
	vibration with two degrees of freedom.		
18MECK	Mechanics of Constructions	KZ	3
Energetic solution o	f elastic beam. Solution of statically indeterminate systems - force and deformation method. Stiffness and compliance matrix of a sys	stem. Finite differe	ence method
Histo	bry and fundamentals of structural design. Characteristics of steel, design of steel structures. Introduction to mathematical theory of	elasticity in 3D.	_
18MTY	Materials Science and Engineering	Z,ZK	3
	erials science and engineering explains mechanical properties of structural materials based on their bonding forces and microstructu		
is paid to metals as	the most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and con to degradation processes in materials, to defectoscopy and to main mechanical tests.	nposites. Attentior	n is also paid
18NUMM	Numerical Methods in Mechanics		
		K7	
		KZ me and spatial dis	3 scretization
Basics of the mos	t used numerical methods in structural mechanics. Central difference method, finite element method, boundary element method. Tir ment method - derivation of the basic equations. Stiffness matrix, mass matrix, damping matrix at element level and structural level.	me and spatial dis	cretization
Basics of the mos	t used numerical methods in structural mechanics. Central difference method, finite element method, boundary element method. Tir	me and spatial dis	cretization
Basics of the mos	t used numerical methods in structural mechanics. Central difference method, finite element method, boundary element method. Tir ement method - derivation of the basic equations. Stiffness matrix, mass matrix, damping matrix at element level and structural level.	me and spatial dis	cretization
Basics of the mos schemes. Finite ele	t used numerical methods in structural mechanics. Central difference method, finite element method, boundary element method. Tir ement method - derivation of the basic equations. Stiffness matrix, mass matrix, damping matrix at element level and structural level. of algebraic equations. Numerical integration. 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	me and spatial dis . Methods for solv	scretization ring systems
Basics of the mos schemes. Finite ele 18PZP Tension and compre	t used numerical methods in structural mechanics. Central difference method, finite element method, boundary element method. The ment method - derivation of the basic equations. Stiffness matrix, mass matrix, damping matrix at element level and structural level. of algebraic equations. Numerical integration. 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.	me and spatial dis . Methods for solv Z,ZK and welded joints	scretization ring systems 3 of structures
Basics of the mos schemes. Finite ele 18PZP Tension and compre	t used numerical methods in structural mechanics. Central difference method, finite element method, boundary element method. The ment method - derivation of the basic equations. Stiffness matrix, mass matrix, damping matrix at element level and structural level. of algebraic equations. Numerical integration. 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	me and spatial dis . Methods for solv Z,ZK and welded joints	acretization ring systems 3 of structures
Basics of the mos schemes. Finite ele 18PZP Tension and compre 18SAT General system o	t used numerical methods in structural mechanics. Central difference method, finite element method, boundary element method. The ment method - derivation of the basic equations. Stiffness matrix, mass matrix, damping matrix at element level and structural level. of algebraic equations. Numerical integration. 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 forces in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determinate.	The and spatial display the and spatial display the spatial displa	ascretization ring systems 3 of structures 4 ple girders.
Basics of the mos schemes. Finite ele 18PZP Tension and compre 18SAT General system o	t used numerical methods in structural mechanics. Central difference method, finite element method, boundary element method. The ment method - derivation of the basic equations. Stiffness matrix, mass matrix, damping matrix at element level and structural level. of algebraic equations. Numerical integration. 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 f 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.	The and spatial display the and spatial display the spatial displa	ascretization ring systems 3 of structures 4 ple girders.
Basics of the mosschemes. Finite electric schemes. Finite electric sche	t used numerical methods in structural mechanics. Central difference method, finite element method, boundary element method. The ment method - derivation of the basic equations. Stiffness matrix, mass matrix, damping matrix at element level and structural level of algebraic equations. Numerical integration. 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 If 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.	Z,ZK and welded joints Z,ZK and welded joints Z,ZK e beams and simple Cross-sectional classes.	scretization ring systems 3 of structures 4 ple girders. haracteristics
Basics of the most schemes. Finite electric sc	t used numerical methods in structural mechanics. Central difference method, finite element method, boundary element method. The ment method - derivation of the basic equations. Stiffness matrix, mass matrix, damping matrix at element level and structural level of algebraic equations. Numerical integration. 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 If 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. Seminary from Elasticity and Strength	Z,ZK and welded joints at beams and simple Cross-sectional cl	as of structures 4 ple girders. haracteristics
Basics of the most schemes. Finite electric sc	t used numerical methods in structural mechanics. Central difference method, finite element method, boundary element method. The ment method - derivation of the basic equations. Stiffness matrix, mass matrix, damping matrix at element level and structural level of algebraic equations. Numerical integration. 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 If 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.	Z,ZK and welded joints at beams and simple Cross-sectional cl	as of structures 4 ple girders. haracteristics
Basics of the most schemes. Finite electric sc	t used numerical methods in structural mechanics. Central difference method, finite element method, boundary element method. The ment method - derivation of the basic equations. Stiffness matrix, mass matrix, damping matrix at element level and structural level. of algebraic equations. Numerical integration. Elasticity and Strength assion. 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 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. Seminary from Elasticity and Strength ce. Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling.	Z,ZK and welded joints at beams and simple Cross-sectional cl	as of structures 4 ple girders. haracteristics
Basics of the most schemes. Finite electric sc	t used numerical methods in structural mechanics. Central difference method, finite element method, boundary element method. The ment method - derivation of the basic equations. Stiffness matrix, mass matrix, damping matrix at element level and structural level of algebraic equations. Numerical integration. Elasticity and Strength assion. 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 If forces in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determinate bork. Kinematic method for calculation of reactions of statically determinate systems. Determination of axial forces in truss constructions. of planar shapes. Fiber polygons and chains. Seminary from Elasticity and Strength ce. Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of bean	The and spatial dispersion of the spatial di	aspectation or systems 3 of structures 4 ple girders. haracteristics 0 ection curve
Basics of the mosschemes. Finite electric schemes. Finite electric sche	t used numerical methods in structural mechanics. Central difference method, finite element method, boundary element method. The ment method - derivation of the basic equations. Stiffness matrix, mass matrix, damping matrix at element level and structural level. of algebraic equations. Numerical integration. Elasticity and Strength assion. 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 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. Seminary from Elasticity and Strength ce. Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Seminary from Structural Analysis se. General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and all works for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of j	Z,ZK and welded joints and sectional classification. Z,ZK and welded joints and simple framework.	a cretization ring systems 3 of structures 4 ple girders. haracteristics 0 ection curve 0 k. Application
Basics of the mos schemes. Finite electric sch	t used numerical methods in structural mechanics. Central difference method, finite element method, boundary element method. The ment method - derivation of the basic equations. Stiffness matrix, mass matrix, damping matrix at element level and structural level. of algebraic equations. Numerical integration. Elasticity and Strength assion. 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 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. Seminary from Elasticity and Strength ce. Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Seminary from Structural Analysis se. General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and all works for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of j Geometry of cross sections. Plane fiber polygons.	me and spatial dis . Methods for solv Z,ZK and welded joints Z,ZK be beams and simp Cross-sectional cl Z n. Analysis of defl Z simple framework joints and method	a cretization ring systems 3 of structures 4 ple girders. haracteristics 0 ection curve 0 k. Application of sections.
Basics of the mosschemes. Finite electric schemes. Finite electric sche	t used numerical methods in structural mechanics. Central difference method, finite element method, boundary element method. The ment method - derivation of the basic equations. Stiffness matrix, mass matrix, damping matrix at element level and structural level. of algebraic equations. Numerical integration. 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 If 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. Seminary from Elasticity and Strength ce. Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Seminary from Structural Analysis see. General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and all works for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of j Geometry of cross sections. Plane fiber polygons. Seminary from Technical Documentation	The and spatial distribution of the spatial distribution o	a cretization ring systems 3 of structures 4 ple girders. haracteristics 0 ection curve 0 k. Application of sections.
Basics of the mosschemes. Finite electric schemes. Finite electric sche	t used numerical methods in structural mechanics. Central difference method, finite element method, boundary element method. The ment method - derivation of the basic equations. Stiffness matrix, mass matrix, damping matrix at element level and structural level. of algebraic equations. Numerical integration. Elasticity and Strength assion. 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 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. Seminary from Elasticity and Strength ce. Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Seminary from Structural Analysis see. General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and all works for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of j Geometry of cross sections. Plane fiber polygons. Seminary from Technical Documentation ds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional	The and spatial distribution of the spatial distribution o	a cretization ring systems 3 of structures 4 ple girders. haracteristics 0 ection curve 0 k. Application of sections.
Basics of the mosschemes. Finite electric schemes. Finite electric sche	t used numerical methods in structural mechanics. Central difference method, finite element method, boundary element method. The ment method - derivation of the basic equations. Stiffness matrix, mass matrix, damping matrix at element level and structural level. of algebraic equations. Numerical integration. Elasticity and Strength assion. 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 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. Seminary from Elasticity and Strength ce. Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Seminary from Structural Analysis se. General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and all works for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of j Geometry of cross sections. Plane fiber polygons. Seminary from Technical Documentation ds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional arrangement of drawing sheets.	me and spatial dis . Methods for solv Z,ZK and welded joints Z,ZK e beams and simp Cross-sectional cl Z m. Analysis of defl Z simple framework joints and method Z al and geometrica	a specification of structures of section curve of sections.
Basics of the mosschemes. Finite electric schemes. Finite electric sche	t used numerical methods in structural mechanics. Central difference method, finite element method, boundary element method. The ment method - derivation of the basic equations. Stiffness matrix, mass matrix, damping matrix at element level and structural level. of algebraic equations. Numerical integration. Elasticity and Strength assion. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolted at Analysis of deflection curve of beams. Torsion of circular cross sections. Combined loading. Stability. Structural Analysis If 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. Seminary from Elasticity and Strength ce. Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Seminary from Structural Analysis se. General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and all works for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of j Geometry of cross sections. Plane fiber polygons. Seminary from Technical Documentation ds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional arrangement of drawing sheets. Technical Documentation	Temperature and spatial distributions. Methods for solver and welded joints and welded joints are beams and simple fross-sectional columns. Analysis of deflections and method and geometrica and geometrica and spatial distributions.	accuracy,
Basics of the mosschemes. Finite electric schemes. Finite electric sche	t used numerical methods in structural mechanics. Central difference method, finite element method, boundary element method. The ment method - derivation of the basic equations. Stiffness matrix, mass matrix, damping matrix at element level and structural level. of algebraic equations. Numerical integration. 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 If 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. Seminary from Elasticity and Strength ce. Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Seminary from Structural Analysis se. General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and all works for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of j Geometry of cross sections. Plane fiber polygons. Seminary from Technical Documentation ds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional arrangement of drawing sheets. Technical Documentation ds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional standardization, technical drawings, representation of technical o	Temperature and spatial distributions. Methods for solver and welded joints and welded joints are beams and simple fross-sectional columns. Analysis of deflections and method and geometrica and geometrica and spatial distributions.	accuracy,
Basics of the mos schemes. Finite electric sch	t used numerical methods in structural mechanics. Central difference method, finite element method, boundary element method. The ment method - derivation of the basic equations. Stiffness matrix, mass matrix, damping matrix at element level and structural level. of algebraic equations. Numerical integration. 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 If 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. Seminary from Elasticity and Strength ce. Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Seminary from Structural Analysis se. General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and all works for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of j Geometry of cross sections. Plane fiber polygons. Seminary from Technical Documentation ds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional arrangement of drawing sheets. Technical Documentation ds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional arrangement of drawing sheets.	me and spatial dis . Methods for solv Z,ZK and welded joints Z,ZK e beams and simple Cross-sectional class Z m. Analysis of deflection and method simple framework goints and method section and geometrica and geometrica	accuracy,
Basics of the mos schemes. Finite electric sch	t used numerical methods in structural mechanics. Central difference method, finite element method, boundary element method. Tirement method - derivation of the basic equations. Stiffness matrix, mass matrix, damping matrix at element level and structural level. of algebraic equations. Numerical integration. Elasticity and Strength In the sission 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 If 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. Seminary from Elasticity and Strength ce. Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Seminary from Structural Analysis se. General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and all works for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of j Geometry of cross sections. Plane fiber polygons. Seminary from Technical Documentation ds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional arrangement of drawing sheets. Project 1 DOS	me and spatial dis . Methods for solv Z,ZK and welded joints Z,ZK e beams and simple Cross-sectional classifications Z m. Analysis of deflemation and method in the companion of the companion	accuracy,
Basics of the mos schemes. Finite electric sch	t used numerical methods in structural mechanics. Central difference method, finite element method, boundary element method. The ment method - derivation of the basic equations. Stiffness matrix, mass matrix, damping matrix at element level and structural level. of algebraic equations. Numerical integration. 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 If 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. Seminary from Elasticity and Strength ce. Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Seminary from Structural Analysis se. General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and all works for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of j Geometry of cross sections. Plane fiber polygons. Seminary from Technical Documentation ds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional arrangement of drawing sheets. Technical Documentation ds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional arrangement of drawing sheets.	me and spatial dis . Methods for solv Z,ZK and welded joints Z,ZK e beams and simple Cross-sectional class Z m. Analysis of deflection and method simple framework goints and method section and geometrica and geometrica	accuracy,

18Y1AM			
	Anatomy, Mobility and Safety of Man	KZ	2
•	natomical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circulation	•	
and biomechanics	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.	nan and his treath	nent. Human
18Y1EM	Experimental Methods in Mechanics	KZ	2
	ole of experimental mechanics. Sensors for mechanical testing. Overview of experimental methods. Destructive and non-destructive t		1
	cedures and sample preparation. Tensile and bending tests. Electrical resistance strain gages. Optical based strain measurement. Fal	_	-
	Instrumented hardness testing. Introduction to electron microscopy. Errors in measurement.		
18Y1MT	Engineering Materials	KZ	2
-	ew of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers and	-	ntion is paid
	ogical materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's		
18Y1PS	Computer Simulations in Mechanics view of tools for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model developmer	KZ	of geometry
· ·	stems. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary conditions and		
	tasks of structural and modal analysis. Introduction to complex nonlinear problems.		
18Y1UK	Introduction of Rail Vehicles	KZ	2
Basic characterist	ics and parameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion trail	in and unit trains.	Rolling and
track resistance. To	tal running resistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehicle - h	nydromechanic, h	ydrodynamic
2221/24	and electric drive. Design concept rail vehicles and drive of wheel set.	7 71/	
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 tab	-	
and no dilaryolo,	tasks. Soft and hard systems, methods for soft system analysis.	, aigenuillis IU	
20UITS	Introduction to Intelligent Transport Systems	Z,ZK	7
	gislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamentals of inform		mmunication
systems for ITS. Pr	inciples and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real examples	of possible applic	cations of the
	principles of ITS.		_
20X31D	Project 1 DOS	Z	2
20X32D	Project 2 DOS	Z	2
20X33D	Project 3 DOS	Z	4
20Y1AE	Applied Electronics	KZ	2
	semiconductor components, their principles, characteristics and typical connection diagrams. Semiconductor PN junction diodes, trans Ogic gates. Functions of basic electronic circuits and methods for their designs (rectifiers, voltage regulator with Zener diode, transisto	=	-
arripinioro, baolo k	amplifier as an inverting and noninverting amplifier).	a do dir diripililoi,	oporational
20Y1AF	Alternative Forms of Transportation Project Financing	KZ	2
-	Alternative Forms of Transportation Project Financing such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt paym		
In will be specifed s	such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt paym ot a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of secu	ents come from it	ts budget but
In will be specifed s the final debtor is n	such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt paym ot a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of secu- of transportation and telecomunication projects.	ents come from it urities as an alterr	ts budget but native source
In will be specifed state final debtor is n	such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt paymot a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of secuniform of transportation and telecomunication projects. Environmental Aspects of Transport	ents come from it urities as an alterr	ts budget but native source
In will be specifed state final debtor is not a 20Y1EA State of the atmosp	such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt payment of a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of secunification and telecomunication projects. Environmental Aspects of Transport Shere, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilistic	ents come from it urities as an alterr KZ forecasts, forecas	ts budget but native source 2 st evaluation.
In will be specifed so the final debtor is n 20Y1EA State of the atmosp Air quality, mair	such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt paymot a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of sector of transportation and telecomunication projects. Environmental Aspects of Transport There, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilistic pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transportation.	ents come from it urities as an altern KZ forecasts, forecas ortation in climate	ts budget but native source 2 st evaluation.
In will be specifed so the final debtor is n 20Y1EA State of the atmosp Air quality, mair 20Y1EK	such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt payment of a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of secunification and telecomunication projects. Environmental Aspects of Transport Shere, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilistic	ents come from it urities as an altern KZ forecasts, forecas ortation in climate KZ	2 st evaluation. e change.
In will be specifed sthe final debtor is not solve a specific of the atmosp. Air quality, mair 20Y1EK Practical experience	such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt payment of a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of secundary of transportation and telecomunication projects. Environmental Aspects of Transport There, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilistic in pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transportation in Electrical Engineering	ents come from it urities as an altern KZ forecasts, forecast ortation in climate KZ symbols and labe	2 st evaluation. c change. 2 ling, nominal
In will be specifed sthe final debtor is not solve a specific of the atmosp. Air quality, mair 20Y1EK Practical experience	such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt payment a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of sector of transportation and telecomunication projects. Environmental Aspects of Transport There, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilistic pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transportation in Electrical Engineering e with measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock hazard, see the public sector body perform the final debtor, i. e. debt payment of the public sector body perform the final debtor, i. e. debt payment of the public sector body perform the final debtor, i. e. debt payment of the public sector body perform the final debtor, i. e. debt payment of the public sector body perform the final debtor, i. e. debt payment of the final debtor, i. e. debt payment of the public sector body perform the final debtor, i. e. debt payment of the final debtor, i. e. debt payment of the final debtor in the final	ents come from it urities as an altern KZ forecasts, forecast ortation in climate KZ symbols and labe	2 st evaluation. c change. 2 ling, nominal
In will be specifed sthe final debtor is not some second and secon	such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt payment a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of secund fransportation and telecomunication projects. Environmental Aspects of Transport There, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilistic pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transportation in Electrical Engineering e with measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock hazard, allowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legislatic in relation to health and safety and electrical engineering. Communication and presentation skills	ents come from it urities as an altern KZ forecasts, forecast ortation in climate KZ symbols and labe on, standards and	s budget but native source 2 st evaluation. c change. 2 lling, nominal I regulations
In will be specifed sthe final debtor is not some and the final de	such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt payment a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of sector of transportation and telecomunication projects. Environmental Aspects of Transport There, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilistic pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transportation in Electrical Engineering e with measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock hazard, sallowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legislatic in relation to health and safety and electrical engineering. Communication and presentation skills sand their fulfillment, current communication networks, work with various sources, formal requirements of emails and final theses, but a direct particular direction and presentation shalls	ents come from it urities as an alterr KZ forecasts, forecast ortation in climate KZ symbols and labe on, standards and KZ asic typology of p	s budget but native source 2 st evaluation. c change. 2 ling, nominal regulations 2 ersonalities,
In will be specifed sthe final debtor is not some second and the final debtor is not second	such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt payment a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of secund fransportation and telecomunication projects. Environmental Aspects of Transport There, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilistic pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transportation in Electrical Engineering e with measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock hazard, sallowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legislation in relation to health and safety and electrical engineering. Communication and presentation skills es and their fulfillment, current communication networks, work with various sources, formal requirements of emails and final theses, bettional intelligence, manipulation and way of working with it, coping with stressful situations, formal requirements of presentations, way	ents come from it urities as an alterr KZ forecasts, forecast ortation in climate KZ symbols and labe on, standards and KZ asic typology of p	s budget but native source 2 st evaluation. e change. 2 ling, nominal regulations 2 ersonalities,
In will be specifed at the final debtor is not a 20Y1EA. State of the atmosp Air quality, mair 20Y1EK. Practical experience voltage, maximum 20Y1KP. Motivation, prioritical teamwork, emotivation, emotivation, emotivation, prioritical states.	such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt payment a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of sector of transportation and telecomunication projects. Environmental Aspects of Transport There, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilistic pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transportation in Electrical Engineering e with measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock hazard, sallowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legislation in relation to health and safety and electrical engineering. Communication and presentation skills es and their fulfillment, current communication networks, work with various sources, formal requirements of emails and final theses, but intelligence, manipulation and way of working with it, coping with stressful situations, formal requirements of presentations, way presentation, presentation skills, presentation skills in online environment.	ents come from it urities as an alterr KZ forecasts, forecast ortation in climate KZ symbols and labe on, standards and KZ asic typology of ps of communicati	s budget but native source 2 st evaluation. c change. 2 ling, nominal I regulations 2 ersonalities, on during
In will be specifed at the final debtor is not a 20Y1EA. State of the atmospherical Air quality, main 20Y1EK. Practical experience voltage, maximum 20Y1KP. Motivation, prioritie teamwork, emoi 20Y1LN.	such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt payment a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of sect of transportation and telecomunication projects. Environmental Aspects of Transport There, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilistic pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transportation in Electrical Engineering e with measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock hazard, sallowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legislation in relation to health and safety and electrical engineering. Communication and presentation skills es and their fulfillment, current communication networks, work with various sources, formal requirements of emails and final theses, be tional intelligence, manipulation and way of working with it, coping with stressful situations, formal requirements of presentations, way presentation, presentation skills, presentation skills in online environment. Location and Navigation	ents come from it urities as an alterr KZ forecasts, forecast ortation in climate KZ symbols and labe on, standards and KZ asic typology of press of communication KZ	s budget but native source 2 st evaluation. c change. 2 ling, nominal I regulations 2 ersonalities, on during 2
In will be specifed at the final debtor is not a 20Y1EA. State of the atmospherical Air quality, main 20Y1EK. Practical experience voltage, maximum 20Y1KP. Motivation, prioritie teamwork, emoi 20Y1LN.	such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt payment a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of sector of transportation and telecomunication projects. Environmental Aspects of Transport There, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilistic pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transportation in Electrical Engineering e with measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock hazard, sallowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legislation in relation to health and safety and electrical engineering. Communication and presentation skills es and their fulfillment, current communication networks, work with various sources, formal requirements of emails and final theses, but intelligence, manipulation and way of working with it, coping with stressful situations, formal requirements of presentations, way presentation, presentation skills, presentation skills in online environment.	ents come from it urities as an alterr KZ forecasts, forecast ortation in climate KZ symbols and labe on, standards and KZ asic typology of press of communication KZ	s budget but native source 2 2 st evaluation. e change. 2 ling, nominal I regulations 2 ersonalities, on during 2
In will be specifed at the final debtor is not a 20Y1EA. State of the atmospherical experience voltage, maximum 20Y1EP. Motivation, prioritical teamwork, emoispherical experience voltage, maximum 20Y1EP. Motivation, prioritical teamwork, emoispherical experience voltage, maximum 20Y1EP. Motivation and experience voltage, maximum 20Y1EP. Motivation and experience voltage voltage.	such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt payment a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of section of transportation and telecomunication projects. Environmental Aspects of Transport where, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilistic pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transport ewith measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock hazard, sallowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legislation in relation to health and safety and electrical engineering. Communication and presentation skills est and their fulfillment, current communication networks, work with various sources, formal requirements of emails and final theses, be tional intelligence, manipulation and way of working with it, coping with stressful situations, formal requirements of presentations, way presentation, presentation skills, presentation skills in online environment. Location and Navigation examples of road networks, localization on the network. Routing algorithms, their properties and implementation. Description and examples are properties and implementation.	ents come from it urities as an alterr KZ forecasts, forecast ortation in climate KZ symbols and labe on, standards and KZ asic typology of press of communication KZ mples of datasets	s budget but native source 2 st evaluation. c change. 2 ling, nominal regulations 2 ersonalities, on during 2 s for finding
In will be specifed at the final debtor is not a 20Y1EA. State of the atmosp Air quality, mair 20Y1EK. Practical experience voltage, maximum 20Y1KP. Motivation, prioritie teamwork, emoid 20Y1LN. Description and example 20Y1OI.	such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt payment a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of secund fransportation and telecomunication projects. Environmental Aspects of Transport There, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilistic in pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transportation in Electrical Engineering e with measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock hazard, so allowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legislation in relation to health and safety and electrical engineering. Communication and presentation skills est and their fulfillment, current communication networks, work with various sources, formal requirements of emails and final theses, but intelligence, manipulation and way of working with it, coping with stressful situations, formal requirements of presentations, way presentation, presentation skills, presentation skills in online environment. Location and Navigation examples of road networks, localization on the network. Routing algorithms, their properties and implementation. Description and examples	ents come from it urities as an alterr KZ forecasts, forecast ortation in climate KZ symbols and labe on, standards and KZ asic typology of pres of communication KZ mples of datasets KZ	s budget but native source 2 st evaluation. c change. 2 ling, nominal regulations 2 ersonalities, on during 2 s for finding 2
In will be specifed at the final debtor is not a 20Y1EA. State of the atmosp Air quality, mair 20Y1EK. Practical experience voltage, maximum 20Y1KP. Motivation, prioritie teamwork, emoi 20Y1LN. Description and experience and experience are specified by the second properties of the second properties are second properties.	such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt paymot a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of secund fransportation and telecomunication projects. Environmental Aspects of Transport There, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilistic in pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transport in Electrical Engineering Qualification in Electrical Engineering e with measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock hazard, so allowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legislation in relation to health and safety and electrical engineering. Communication and presentation skills est and their fulfillment, current communication networks, work with various sources, formal requirements of emails and final theses, but intelligence, manipulation and way of working with it, coping with stressful situations, formal requirements of presentations, way presentation, presentation skills, presentation skills in online environment. Location and Navigation examples of road networks, localization on the network. Routing algorithms, their properties and implementation. Description and examples of road networks, localization on the network. Routing algorithms, their properties and implementation.	ents come from it urities as an alterrest KZ forecasts, forecast ortation in climate KZ symbols and labe on, standards and KZ asic typology of pas of communicati KZ mples of datasets KZ for users (timetals	s budget but native source 2 st evaluation. c change. 2 ling, nominal regulations 2 ersonalities, on during 2 s for finding 2
In will be specifed at the final debtor is not a 20Y1EA. State of the atmosp Air quality, mair 20Y1EK. Practical experience voltage, maximum 20Y1KP. Motivation, prioritic teamwork, emotion 20Y1LN. Description and example 20Y1OI. Fare collection sypat 20Y1OK.	such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt paymot a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of section of transportation and telecomunication projects. Environmental Aspects of Transport where, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilistic in pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transportation in Electrical Engineering e with measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock hazard, allowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legislation in relation to health and safety and electrical engineering. Communication and presentation skills es and their fulfillment, current communication networks, work with various sources, formal requirements of emails and final theses, be itional intelligence, manipulation and way of working with it, coping with stressful situations, formal requirements of presentations, way presentation, presentation skills, presentation skills in online environment. Location and Navigation examples of road networks, localization on the network. Routing algorithms, their properties and implementation. Description and examples of road networks, localization on the network. Routing algorithms, their properties and implementation. Fare Collection and Information Systems retems in public transport and their components (on-board units, validators, turnstiles,). Information systems and their components nels) and operators (cycles, location or current delay of vehicles,). The issue of tariff systems. Other examples of clearance systems and components of tariff systems.	ents come from it urities as an alterrest KZ forecasts, forecast ortation in climate KZ symbols and labe on, standards and KZ asic typology of person of communication KZ for users (timetal ems (parking).	s budget but native source 2 st evaluation. e change. 2 ling, nominal regulations 2 ersonalities, on during 2 of or finding 2 oles, maps, 2
In will be specifed at the final debtor is not a 20Y1EA. State of the atmosp Air quality, mair 20Y1EK. Practical experience voltage, maximum 20Y1KP. Motivation, prioritic teamwork, emotion 20Y1LN. Description and example 20Y1OI. Fare collection sypat 20Y1OK. Basic lighting quantities.	such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt paymot a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of section of transportation and telecomunication projects. Environmental Aspects of Transport Environmental Aspects of Transport pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transport and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transported to pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transported to pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transpore with measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock hazard, allowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legislatic in relation to health and safety and electrical engineering. Communication and presentation skills es and their fulfillment, current communication networks, work with various sources, formal requirements of emails and final theses, be tional intelligence, manipulation and way of working with it, coping with stressful situations, formal requirements of presentations, way presentation, presentation skills, presentation skills in online environment. Location and Navigation Examples of road networks, localization on the network. Routing algorithms, their properties and implementation. Description and examples of road networks, localization on the network. Routing algorithms, their properties and implementation. Fare Collection and Information Systems reterms in public transport and their components (on-board uni	ents come from it urities as an alterrest KZ forecasts, forecast ortation in climate KZ symbols and laberon, standards and KZ asic typology of presof communication KZ for users (timetal ems (parking). KZ haires (lifetime of light arities as an alternation of lifetime of lifetime of light arities as an alternation of lifetime of lifetime of lifetime of lifetime of lifetime of lifetime as an alternation of lifetime	s budget but native source 2 st evaluation. e change. 2 lling, nominal regulations 2 regulations 2 st for finding 2 st for finding 2 sight sources,
In will be specifed at the final debtor is not a 20Y1EA. State of the atmosp Air quality, mair 20Y1EK. Practical experience voltage, maximum 20Y1KP. Motivation, prioritic teamwork, emotion 20Y1LN. Description and example 20Y1OI. Fare collection sypat 20Y1OK. Basic lighting quantities.	such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt paymot a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of sector of transportation and telecomunication projects. Environmental Aspects of Transport Chere, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilistic of pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transport and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transport ewith measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock hazard, so allowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legislatic in relation to health and safety and electrical engineering. Communication and presentation skills Examples and their fulfillment, current communication networks, work with various sources, formal requirements of emails and final theses, but it is an additional intelligence, manipulation and way of working with it, coping with stressful situations, formal requirements of presentations, way presentation, presentation skills, presentation skills in online environment. Location and Navigation Examples of road networks, localization on the network. Routing algorithms, their properties and implementation. Description and examples of road networks, localization on the network. Routing algorithms, their properties and implementation. Fare Collection and Information Systems Extens in public transport and their components (networks, localization or current delay of vehicles,). The issue of tariff systems. Other examples of clearance systems in public transport and their components (netw	ents come from it urities as an alterrest KZ forecasts, forecast ortation in climate KZ symbols and laberon, standards and KZ asic typology of presof communication KZ for users (timetal ems (parking). KZ haires (lifetime of light arities as an alternation of lifetime of lifetime of light arities as an alternation of lifetime of lifetime of lifetime of lifetime of lifetime of lifetime as an alternation of lifetime	s budget but native source 2 2 st evaluation. e change. 2 2 ling, nominal regulations 2 2 rersonalities, on during 2 2 s for finding 2 2 sight sources, ight sources, ight sources, in a control of the control of
In will be specifed at the final debtor is not a 20Y1EA. State of the atmosp Air quality, mair 20Y1EK. Practical experience voltage, maximum 20Y1KP. Motivation, prioritic teamwork, emotion 20Y1LN. Description and example 20Y1OI. Fare collection sy par 20Y1OK. Basic lighting quantilight distribution),	such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt paymot a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of sector of transportation and telecomunication projects. Environmental Aspects of Transport Environmental Aspects of Transport Chere, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilistic in pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transportation in Electrical Engineering e with measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock hazard, seed allowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legislatic in relation to health and safety and electrical engineering. Communication and presentation skills es and their fulfillment, current communication networks, work with various sources, formal requirements of emails and final theses, be it in the presentation of the presentation skills, presentations, formal requirements of presentations, way presentation, presentation skills, presentation skills in online environment. Location and Navigation examples of road networks, localization on the network. Routing algorithms, their properties and implementation. Description and examples of road networks, localization on the network. Routing algorithms, their properties and implementation. Fare Collection and Information Systems stems in public transport and their components (on-board units, validators, turnsiles,). Information systems and their components els) and operators (cycles, location or current delay of vehicles,). The issue of tariff systems. Other examples of clearance systems and terms, street lighting components (luminair	ents come from it urities as an alterrest in the content of the co	s budget but native source 2 st evaluation. e change. 2 lling, nominal regulations 2 ersonalities, on during 2 s for finding 2 gles, maps, 2 light sources, DIALux and
In will be specifed at the final debtor is not a content of the strong of the final debtor is not a content of the final d	such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt paymot a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of sector of transportation and telecomunication projects. Environmental Aspects of Transport Shere, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilistic in pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transportation in Electrical Engineering e with measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock hazard, so allowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legislatic in relation to health and safety and electrical engineering. Communication and presentation skills es and their fulfillment, current communication networks, work with various sources, formal requirements of emails and final theses, but intelligence, manipulation and way of working with it, coping with stressful situations, formal requirements of presentations, way presentation, presentation skills, presentation skills in online environment. Location and Navigation examples of road networks, localization on the network. Routing algorithms, their properties and implementation. Description and examples of road networks, localization on the network formation systems Fare Collection and Information Systems restens in public transport and their components (on-board units, validators, turnstiles,). Information systems and their components (electrical engineering). The issue of tariff systems. Other examples of clearance systems and terms, street lighting components (luminaires, control cabinets for street lighting, street lighting cables), characteristics of lumin standards,	ents come from it urities as an alterrest as an alterrest in the control of the c	s budget but native sources 2 st evaluation. e change. 2 ling, nominal regulations 2 personalities, on during 2 s for finding 2 ling, maps, 2 light sources, DIALux and 2
In will be specifed a the final debtor is not a 20Y1EA. State of the atmosp Air quality, mair 20Y1EK. Practical experience voltage, maximum 20Y1KP. Motivation, prioritic teamwork, emotion and control of the control o	such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt paymot a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of sector of transportation and telecomunication projects. Environmental Aspects of Transport Environmental Aspects of Transport Chere, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilistic in pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transportation in Electrical Engineering e with measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock hazard, seed allowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legislatic in relation to health and safety and electrical engineering. Communication and presentation skills es and their fulfillment, current communication networks, work with various sources, formal requirements of emails and final theses, be it in the presentation of the presentation skills, presentations, formal requirements of presentations, way presentation, presentation skills, presentation skills in online environment. Location and Navigation examples of road networks, localization on the network. Routing algorithms, their properties and implementation. Description and examples of road networks, localization on the network. Routing algorithms, their properties and implementation. Fare Collection and Information Systems stems in public transport and their components (on-board units, validators, turnsiles,). Information systems and their components els) and operators (cycles, location or current delay of vehicles,). The issue of tariff systems. Other examples of clearance systems and terms, street lighting components (luminair	ents come from it urities as an alterrest as an alterrest in the content of the c	s budget but native source 2 st evaluation. e change. 2 cling, nominal regulations 2 personalities, on during 2 s for finding 2 cles, maps, 2 clight sources, DIALux and 2 A framework
In will be specifed a the final debtor is not a 20Y1EA. State of the atmosp Air quality, mair 20Y1EK. Practical experience voltage, maximum 20Y1KP. Motivation, prioritic teamwork, emotion and control of the control o	such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt paymot a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of section of transportation and telecomunication projects. Environmental Aspects of Transport where, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilistic in pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transportation in Electrical Engineering e with measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock hazard, so allowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legislatic in relation to health and safety and electrical engineering. Communication and presentation skills as and their fulfillment, current communication networks, work with various sources, formal requirements of emails and final theses, be stimulated in the fulfillment, current communication networks, work with various sources, formal requirements of presentations, way presentation, presentation skills, presentation skills in online environment. Location and Navigation examples of road networks, localization on the network. Routing algorithms, their properties and implementation. Description and examples of road networks, localization on the network Routing algorithms, their properties and implementation. Fare Collection and Information Systems stems in public transport and their components (on-board units, validators, turnstiles,). Information systems and their components nets) and operators (cycles, location or current delay of vehicles,). The issue of tariff systems. Other examples of clearance systems in public transport and their components (luminaires, contro	ents come from it urities as an alterrest as an alterrest in the content of the c	s budget but native sources 2 st evaluation to change. 2 lling, nominal regulations 2 personalities, on during 2 s for finding 2 sight sources DIALux and 2 A framework
In will be specifed a the final debtor is not a 20Y1EA. State of the atmosp Air quality, mair 20Y1EK. Practical experience voltage, maximum 20Y1KP. Motivation, prioritic teamwork, emotion and control of the control o	such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt paym of a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of sect of transport and the transportation and telecomunication projects. Environmental Aspects of Transport there, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilistic pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transport and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transport allowed currents in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock hazard, allowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legislatic in relation to health and safety and electrical engineering. Communication and presentation skills so and their fulfillment, current communication networks, work with various sources, formal requirements of emails and final theses, but in all intelligence, manipulation and way of working with it, coping with stressful situations, formal requirements of presentations, way presentation, presentation skills, presentation skills in online environment. Location and Navigation Examples of road networks, localization on the network. Routing algorithms, their properties and implementation. Description and examples of road networks, localization on the network alidators, turnstiles,). Information systems and their components rels) and operators (cycles, location or current delay of vehicles,). The issue of tariff systems. Other examples of clearance systems in public transport and their components (on-board units, validators, turnstiles,). Information systems and thei	ents come from it urities as an alterrest as an alterrest in the content of the c	s budget but native sources 2 st evaluation. e change. 2 lling, nominal regulations 2 ersonalities, on during 2 s for finding 2 loles, maps, 2 light sources, DIALux and 2 A framework
In will be specifed a the final debtor is not a 20Y1EA. State of the atmosp Air quality, mair 20Y1EK. Practical experience voltage, maximum 20Y1KP. Motivation, prioritic teamwork, emotion and control of the control o	such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt paym of a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of sector of transportation and telecomunication projects. Environmental Aspects of Transport	ents come from it urities as an alterrest as an alterrest in the content of the c	s budget but native sources 2 st evaluation. e change. 2 lling, nominal regulations 2 sersonalities, on during 2 sersonalities, on during 2 soles, maps, 2 light sources, DIALux and 2 A framework of standards 2
In will be specifed a the final debtor is not a 20Y1EA State of the atmosp Air quality, mair 20Y1EK Practical experience voltage, maximum 20Y1KP Motivation, prioritic teamwork, emotion 20Y1LN Description and control of the control	such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt paym of a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of sector of transportation and telecomunication projects. Environmental Aspects of Transport there, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilistic a pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transport and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transport and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transport and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transport and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transport and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transport contentions, possible and safety and electrical equipment green and transport communication and presentation asked and electrical engineering. Communication and presentation skills and electrical engineering. Communication and presentation skills in online environments of emails and final theses, be it in relation, presentation skills, presentation skills in online environments. Location and Navigation Examples of road networks, localization on the network. Routing algorithms, their properties and implementation. Description and examples of road networks, localization on the network. Routing algorithms, their properties and implementation. Description and examples of road networks, localization or current delay of vehicles,). The issue of tariff systems. Other ex	ents come from it urities as an alterrest as an alterrest in the content of the c	s budget but native source 2 st evaluation. e change. 2 lling, nominal regulations 2 ersonalities, on during 2 s for finding 2 soles, maps, 2 light sources, DIALux and 2 A framework of standards 2 tro-magnetic,
In will be specifed a the final debtor is not a 20Y1EA State of the atmosp Air quality, mair 20Y1EK Practical experience voltage, maximum 20Y1KP Motivation, prioritie teamwork, emoid 20Y1LN Description and experience considerable and a 20Y1OI Fare collection sy par 20Y1OK Basic lighting quantilight distribution), 20Y1PK General principles of standards for systems 20Y1SC Principles of sensor 21SLD	such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt paym of a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of sector of transportation and telecomunication projects. Environmental Aspects of Transport where, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilistic prollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transport and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transport and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transport and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transport employed their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transport and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transport connection against short circuit and overload protection, control and revision, first aid, legislatic in relation to health and safety and electrical engineering. Communication and presentation skills sand their fulfillment, current communication networks, work with various sources, formal requirements of emails and final theses, be it in a finite protection and way of working with it, coping with stressful situations, formal requirements of presentations, way presentation skills, presentation skills in online environment. Location and Navigation examples of road networks, localization on the network. Routing algorithms, their properties and implementation. Description and examples of road networks, localization on the network. Routing algorithms, their propertie	ents come from it urities as an alterrest as an alterrest in the content of the c	s budget but native source 2 st evaluation. e change. 2 cling, nominal regulations 2 ersonalities, on during 2 s for finding 2 slight sources, DIALux and 2 A framework of standards 2 tro-magnetic,
In will be specifed a the final debtor is not a 20Y1EA State of the atmosp Air quality, mair 20Y1EK Practical experience voltage, maximum 20Y1KP Motivation, prioritic teamwork, emoid 20Y1LN Description and experience and a 20Y1OI Fare collection sy par 20Y1OK Basic lighting quantilight distribution), 20Y1PK General principles of standards for systems 20Y1SC Principles of sensor 21SLD History, definiti	such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt paym of a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of sector of transportation and telecomunication projects. Environmental Aspects of Transport	ents come from it urities as an alterrest as an alterrest in the content of the c	s budget but native source 2 st evaluation. e change. 2 lling, nominal l regulations 2 ersonalities, on during 2 s for finding 2 poles, maps, 2 sight sources, DIALux and 2 A framework of standards 2 tro-magnetic, 0 balance,
In will be specifed a the final debtor is not a 20Y1EA State of the atmosp Air quality, mair 20Y1EK Practical experience voltage, maximum 20Y1KP Motivation, prioritie teamwork, emoid 20Y1LN Description and experience considerable and a 20Y1OI Fare collection sypar 20Y1OK Basic lighting quantilight distribution), 20Y1PK General principles of standards for systems 20Y1SC Principles of sensor 21SLD History, definiti	such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt paym of a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of sector of transportation and telecomunication projects. Environmental Aspects of Transport	ents come from it urities as an alterrest as an alterrest in the content of the c	s budget but native sources 2 st evaluation. e change. 2 lling, nominal regulations 2 ersonalities, on during 2 s for finding 2 light sources, DIALux and 2 A framework of standards 2 tro-magnetic, 0 balance,
In will be specifed at the final debtor is not a content of the strong of the final debtor is not a content of the final d	such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt paym of a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of sector of transportation and telecomunication projects. Environmental Aspects of Transport	ents come from it urities as an alterrest as an alterrest in the content of the c	s budget but native source 2 st evaluation. e change. 2 lling, nominal regulations 2 ersonalities, on during 2 s for finding 2 poles, maps, 2 sight sources, DIALux and 2 A framework of standards 2 tro-magnetic, 0 balance,

04.7000	Desirat 0 DOO	7	
21X32D	Project 2 DOS	Z	2
21X33D	Project 3 DOS	Z	4
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 In RAC System. NOTAM messages.PIB (Pre-flight Informtion Bulletin). AIC (Aeoronautical Inf. Circulars). Aeronautical Charts. EAD (Eu		
tile Ozecii Kep. Ai	(Quality Mng. System). ADQ (Aeronautical Data Quality). AIXM (Aeronautical Inf. Exchnage Format).	Topella AlS Dalab	ase). QIVIS
21Y1BS		KZ	2
_	Unmanned aircraft systems 1 n Development. Aircraft design. Legislation in force in the Czech Republic. Planning and execution of the flight. Airspace division. Ope		
Offinalified Aviation	procedures. Practical flights.	rational risks and	operational
21Y1LJ	Aeronautical Radio and Flight Instruments	KZ	2
	story of aircraft instrumentation, aerometric instrumentation, Earth magnetism, aircraft electric equipment, gyroscopic instrumentation		
	ft equipment, engine instrumentation, warning and recording systems, instrumentation operational requirements, radiocommunication		
21Y1LS	Air Traffic Services	KZ	2
	n Czech Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, APP		
	at USA and Czechoslovakia. ATS - Model of financing. Training System of Air Traffic Controllers. Future development of ATS	S.	
21Y1MP	Matlab for project-oriented study	KZ	2
The subject's syllab	ous 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
particular exampl	les, based on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improveme	nt of students' Mat	tlab skills.
21Y1OH	Airline Business and Operations	KZ	2
	s a comprehensive view of the commercial, operational and transportation activities of air transport companies. It focuses on the organiz		
various aspects of t	heir strategy, economic and operational indicators. It introduces students in detail to operational processes and the essentials of transp	ortation processes	s. It provides
	a basic view of the economic aspects of air transport.		
21Y1PA	Air Traffic Control Operating Procedures	KZ	2
	on the ATC simulator with the following focus - getting familiar with the simulation environment, acquiring basic habits, aircraft identify clearance, use of RNAV points. Practical exercises focused on the basis of vectoring, timely application of vertical spacing, EST and	•	- 1
lever changes, ATC	Exercises in the APPROACH airspace, arrivals, departures and conflict solutions.	i KEV message ira	ansmission.
21Y1PC	ATC Procedures and Activities	KZ	2
	procedures, basics of communication and phraseology, aircraft identification, spacing and traffic coordination. In addition, the course of		
-	ts and low visibility operational procedures. Students will during the course learn basic safety management applications applied acro		
21Y1RZ	Human Resources Management	KZ	2
The position of h	numan resources in the organization and related disciplines file. Substance, importance and challenges of human resources manage	ment. Internal and	external
environment of hum	nan resource management. Human resource planning. Search, recruitment and selection of employees. Motivation, evaluation and ren	nuneration of staff.	Positioning,
	dismissal and redundancies of employees. Education of employees. Planning career management.		
21Y1SI	ATC Simulator	KZ	2
	vith the simulation environment, acquiring basic habits, aircraft identification procedures, vectoring, level changes, ATC clearance, us	· ·	
exercises focusin	g on basic vectoring, early application of vertical separation, EST and REV message passing. Practical exercises in the APPROACH	l area, practicing a	rrival and
04)/4711	departure management procedures, conflict resolution.	1/7	
21Y1TH	Aircraft Technical Handling	KZ	2
_	and pushing tractors. GPU. Air conditioning and heating units. Aircraft fuel equipment. De-acing and anti-icing units. Loading and unlo ssangers onboarding and offboarding. Operational processes of aircraft technical handling and regulations. Modernization and techn		ment ior
21Y1UL	Aircraft Maintenance	KZ	2
-	and technical operations. Maintenance and work processes. Defects search methods, status check diagnostic tools. Selection and qua		
•	on for maintenance. Optimization of time maintenance intervals. Regulation no. 1321/2014 Part 145. Human factors of aircraft maintenance.		
	EASA for aircraft maintenance. Seminars will be focused on practical application.		
21ZALD	Basics of Air Transport	KZ	2
History, definitions,	terminology, basic rules. VFR/IFR. Basics of aerodynamics. Propulsion of aircraft. Aircraft design. Basics of navigation, radio navigation.	Weight, balance, p	erformance.
Flight planning, opti	imization of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic management, grou	nd handling, secur	ity. Air crew.
	Airlines and economics. Space technologies.		
22DON	Traffic Accidents	Z,ZK	6
	d Accidents and Forensic Expertise; Rail, Water and Air Accidents; Road Accident Documentation and Documentation Technology; A		
-	cident Trace Analysis and Fake Accidents; Simulation Programmes for Road Accident Analysis; Pedestrian and Cyclist Accidents; Veh Phicles; Safe road layout and collision diagrams; Not giving right of way; Technical defects of vehicles; Restraints - passive road safety	-	- 1
and autonomous ve	Prevention (traffic education, awareness, repression)	, Accidents at leve	ii ciossiiigs,
22METD	Measurement Methods and Technology in Transportation	ZK	4
	ethods in transport, their meaning and use. Geodetic basics in Czechia. Angular, length and height measurements. Principles of map		
	nents. Surveying and setting out. Challenges of localization, navigation and Global Navigation Satellite Systems. Laser scanning (terre	-	
	photography and photogrammetry. Dynamic measurements of vehicles. High-speed cameras.		
22X31D	Project 1 DOS	Z	2
22X32D	Project 2 DOS	Z	2
22X33D	Project 3 DOS	Z	4
23X31D	Project 1 DOS	Z	2
23X32D	Project 2 DOS	Z	2
23X33D	Project 3 DOS	Z	4
23Y1EH	Electronics and hardware in security of transportation	KZ	2
	eters of signals. Passive circuits, properties, basic measurements. Passive filters, semiconductors. Operational amplifiers, basic circu		
	gic circuits. AD converters. Connection of analog and digital parts. Basic blocks of digital signal processing. Measurement processing. D	· ·	
	in electronics.		
23Y1KB	Cyber security in transportation	KZ	2
•	security and cyber security, legal status in the field of cyber security, virtual cyberspace and communities, taxonomy of crimes in cyberspace and		
engineerin	g, cyber attack technology, information security, cyber attacks on telematics systems, security of systems with artificial intelligence, r	orms and standar	as.

23Y1KM	Crisis Management	KZ	2
Theory and legal fra	ame of crisis management with direction to Rescue system (IZS). After introduction to safety domain, there are terms and knowledge of	n: theory and po	sition of crisis
manag	pement and its targets; IZS-crisis management-crisis planning; and basic legislation. Practical part is concentrated to responsibility m	atrix compilation.	
23Y1KO	Quantum Physics and Optoelectronics	KZ	2
	Ground of quantum physics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics component	ents.	
23Y1KY	Cybernality	KZ	2
Juridical aspects of	behavior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism. Inf	oware and conne	cted aspects.
23Y1MK	Crisis Situation Management in Critical Infrastructure	KZ	2
Determination of c	ritical infrastructute elements on all levels, their protection systems, responsibilities of particular agencies of the state administration	and the self-gove	rnment, and
their	esponsibilities to anounce particular safety provisions. Physical and cyber protection of critical infrastructure with special attention to	the soft targets.	
23Y1MU	Emergency Events Management Solution in Transport Infrastructure	KZ	2
Basic solutions of e	mergency events with emphasis of the transport infrastructure events and their solution management. Knowledge in the emergency pla	anning and specia	al procedures
	in liquidation work within the transport infrastructure.		
23Y1OK	Protection of Critical Objects and Infrastructures	KZ	2
Types of technologi	cal systems, critical item, risks and their courses, criticality, vulnerability, connectivity, dependability, resilience, failure, protection, safe	ty of critical objec	ts and critical
	infrastructures.		
23Y1TP	Criminal Law in IT and Transportation	KZ	2
Introduction of cri	minal law into legal order, conception of culpability and criminal delict, consequency of other legal standards. international treaty and	criminal law, inve	estigation of
	crime, specific indicia of criminal court cases, practical examples.		
23Y1VS	Negotiation and Cooperation	KZ	2
Code of conduct fo	r negotiation. The influence of personality traits on the negotiations. Negotiation and commanding. Teamwork. Variants teams. Inform	al and formal role	in the team.
Principles of negoti	ation, the essence of negotiation, the differences in negotiation in business and in crisis situations, the principle of "win both", specific	ations and biddir	ng, the role of
	trust.		
TV-1	Physical Education	Z	1
TV-2	Physical Education	Z	1
TVKLV	Physical Education Course	Z	0
TVKZV	Physical Education Course	Z	0

For updated information see http://bilakniha.cvut.cz/en/FF.html Generated: day 2025-06-23, time 22:36.