Study plan

Name of study plan: Bachelor TET-LOG 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: 90

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:

Note on the grou	p:					
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 Tomáš Třasák, Olga Vraštilová, Magdalena Hykšová, Bohumil Kovář, Ondřej Navrátil Bohumil Kovář Ondřej Navrátil (Gar.)	Z,ZK	7	2P+4C+22B	Z	Z
11LA	Linear Algebra Magdalena Hykšová, Lucie Kárná, Pavel Provinský, Martina Bečvářová Magdalena Hykšová Martina Bečvářová (Gar.)	Z,ZK	3	2P+1C+10B	Z	Z
12ZYDI	Introduction to Transportation Engineering Zuzana Čarská, Dagmar Kočárková	Z,ZK	2	1P+1C	Z	Z
18MTY	Materials Science and Engineering Tomáš Doktor, Jaromír Kylar, Veronika Drechslerová, Nela Krčmářová, Jitka Řezníčková, Jaroslav Valach, Vít Malinovský, Jaromír Kylar Jaroslav Valach Tomáš Doktor (Gar.)	Z,ZK	3	2P+1C+10B	Z	Z
11GIE	Geometry Pavel Provinský, Oldřich Hykš, Šárka Voráčová Oldřich Hykš Oldřich Hykš (Gar.)	KZ	3	2P+2C+12B	Z	Z
14ASD	Algorithm and Data Structures Tomáš Brandejský, Michal Jeřábek, Alena Kubáčová, Jan Procházka, Vít Fábera, Martin Fiala, Lukáš Svoboda, Tereza Panská Vít Fábera Vít Fábera (Gar.)	KZ	3	0P+2C+8B	Z	Z
14KSP	Constructing with Computer Aid Lukáš Svoboda	KZ	2	0P+2C+8B	Z	Z
18TED	Technical Documentation Jitka Řezníčková, Vít Malinovský Jitka Řezníčková Jitka Řezníčková (Gar.)	KZ	2	1P+1C+8B	Z	Z
15DPLG	Transportation Psychology	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-1E1-20/2	1 Name=1st Sem.	Bachelor F	ull-Time I E I 1	trom 2020/21

11CAL1	Calculus 1	Z,ZK	/
Sequence of real number	rs 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.

12ZYDI	Introduction to Transportation Engineering	Z,ZK	2
Role of transportatio	n in land-use planning. Basic terms in transportation engineering. Traffic survey and traffic prognosis. Introduction to topic of roa	ads, public mass tra	nsport. Negative
impacts of transporta	ation to environment and safety.		
18MTY	Materials Science and Engineering	Z,ZK	3
Basic course of mate	rials science and engineering explains mechanical properties of structural materials based on their bonding forces and microst	tructure. However th	e main attention
is paid to metals as t	he most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers an	d composites. Atten	tion is also paid
to degradation proce	sses in materials, to defectoscopy and to main mechanical tests.		
11GIE	Geometry	KZ	3
Differential geometry	rof curves - parameterization, the arc of the curve, torsion and curvature, Frenet`s trihedron. Kinematics - a curve as a trajecto	ory of the motion, th	e velocity, and
acceleration of a par	ticle moving on a curved path.		
14ASD	Algorithm and Data Structures	KZ	3
Students will analyze	problems, design a theoretical solution to a given problem and write the resulting algorithm using flowcharts, practice reading	algorithms written i	using flowcharts,
	an algebra to construct constraints in algorithms. Students will be introduced to the basics of the Python programming language	ge - variable, branch	ning, loops, they
and use basic Boole	an algebra to construct constraints in algorithms. Students will be introduced to the basics of the Fython programming languag	g	3,,,
	n variables of basic data types (integer, floating point and string) and the list data structure in their programs.		3,, -,
		KZ	2
will learn to work with 14KSP	n variables of basic data types (integer, floating point and string) and the list data structure in their programs.	KZ	2
will learn to work with 14KSP "CAD systems" term	n variables of basic data types (integer, floating point and string) and the list data structure in their programs. Constructing with Computer Aid	KZ n work rules in grap	2 hic applications
will learn to work with 14KSP "CAD systems" term and CA systems. Co	n variables of basic data types (integer, floating point and string) and the list data structure in their programs. Constructing with Computer Aid determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic commor	KZ n work rules in grap	2 hic applications
will learn to work with 14KSP "CAD systems" term and CA systems. Co	n variables of basic data types (integer, floating point and string) and the list data structure in their programs. Constructing with Computer Aid determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic commor ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting positions).	KZ n work rules in grap	2 hic applications
will learn to work with 14KSP "CAD systems" term and CA systems. Co profiles, drawings with 18TED	n variables of basic data types (integer, floating point and string) and the list data structure in their programs. Constructing with Computer Aid determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic commor ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting posts the raster foundaments).	KZ n work rules in grap ssibilites, AutoCAD	2 hic applications environment
will learn to work with 14KSP "CAD systems" term and CA systems. Co profiles, drawings with 18TED	n variables of basic data types (integer, floating point and string) and the list data structure in their programs. Constructing with Computer Aid determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic commor ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting posts the raster foundaments). Technical Documentation international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensions.	KZ n work rules in grap ssibilites, AutoCAD	2 hic applications environment
will learn to work with 14KSP "CAD systems" term and CA systems. Co profiles, drawings with 18TED Technical standards,	n variables of basic data types (integer, floating point and string) and the list data structure in their programs. Constructing with Computer Aid determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic commor ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting posts the raster foundaments). Technical Documentation international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensions.	KZ n work rules in grap ssibilites, AutoCAD	2 hic applications environment
will learn to work with 14KSP "CAD systems" term and CA systems. Co profiles, drawings with 18TED Technical standards, arrangement of draw 15DPLG	n variables of basic data types (integer, floating point and string) and the list data structure in their programs. Constructing with Computer Aid determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic commor ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting posts the raster foundaments). Technical Documentation international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensioning sheets.	KZ n work rules in grap ssibilites, AutoCAD KZ onal and geometric:	2 hic applications environment 2 al accuracy,
will learn to work with 14KSP "CAD systems" term and CA systems. Co profiles, drawings with 18TED Technical standards, arrangement of draw 15DPLG Subject of psycholog	n variables of basic data types (integer, floating point and string) and the list data structure in their programs. Constructing with Computer Aid determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic commor ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting posts tracter foundaments). Technical Documentation international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensioning sheets. Transportation Psychology	KZ n work rules in grap ssibilites, AutoCAD KZ onal and geometrica Z construction. Psych	2 hic applications environment 2 al accuracy,
will learn to work with 14KSP "CAD systems" term and CA systems. Co profiles, drawings with 18TED Technical standards, arrangement of draw 15DPLG Subject of psycholog	n variables of basic data types (integer, floating point and string) and the list data structure in their programs. Constructing with Computer Aid determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic commor ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting post the raster foundaments). Technical Documentation International standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensioning sheets. Transportation Psychology y and its basic concepts. Information intake, decision-making and behaviour. Performance. Engineering psychology and vehicle	KZ n work rules in grap ssibilites, AutoCAD KZ onal and geometrica Z construction. Psych	2 hic applications environment 2 al accuracy,
will learn to work with 14KSP "CAD systems" term and CA systems. Co profiles, drawings with 18TED Technical standards, arrangement of draw 15DPLG Subject of psycholog of travel route and trail 16UDOP	revariables of basic data types (integer, floating point and string) and the list data structure in their programs. Constructing with Computer Aid determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic common coordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting position that raster foundaments). Technical Documentation international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensioning sheets. Transportation Psychology y and its basic concepts. Information intake, decision-making and behaviour. Performance. Engineering psychology and vehicle affic conditions, accidents and traffic incidents. Selection and training of the staff. Work and leisure. Age as a factor in transport	KZ n work rules in grap ssibilites, AutoCAD KZ onal and geometrica Z construction. Psych t operation.	2 hic applications environment 2 al accuracy, 2 ological aspects
will learn to work with 14KSP "CAD systems" term and CA systems. Coprofiles, drawings with 18TED Technical standards, arrangement of draw 15DPLG Subject of psycholog of travel route and trafful 16UDOP Vehicles and transport	n variables of basic data types (integer, floating point and string) and the list data structure in their programs. Constructing with Computer Aid determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic commor ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting position raster foundaments). Technical Documentation 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. Transportation Psychology y and its basic concepts. Information intake, decision-making and behaviour. Performance. Engineering psychology and vehicle affic conditions, accidents and traffic incidents. Selection and training of the staff. Work and leisure. Age as a factor in transport. Introduction into Vehicles	KZ n work rules in grap ssibilites, AutoCAD KZ onal and geometrica Z construction. Psych t operation.	2 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 grou	γ.					
Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11CAL2	Calculus 2 Tomáš Třasák, Olga Vraštilová, Magdalena Hykšová, Ondřej Navrátil, Oldřich Hykš Magdalena Hykšová Ondřej 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 Javořík, Ondřej Trešl Lukáš Týfa (Gar.)	Z,ZK	4	2P+2C+10B	L	Z
18SAT	Structural Analysis Tomáš Doktor, Jaromír Kylar, Veronika Drechslerová, Nela Krčmářová, Jitka Řezničková, Jan Falta, Daniel Kytýř, Jan Vyčichl, Jan Šleichrt Daniel Kytýř (Gar.)	Z,ZK	4	2P+2C+14B	L	Z
20SYSA	Systems Analysis Petr Bureš, Zuzana Bělinová, Jiří Růžička, Patrik Horažďovský Zuzana Bělinová (Gar.)	Z,ZK	5	2P+2C+14B	L	Z
14PRG	Programming Alena Kubáčová, Jan Procházka, Martin Fiala, Lukáš Svoboda, Jana Kaliková, Jan Krčál Jana Kaliková Jana Kaliková (Gar.)	KZ	2	0P+2C+8B	L	Z
17TEDL	Transport Technology and Logistics Vit Janoš, Michal Drábek, Zdeněk Michl, Rudolf Vávra, Stanislav Metelka Zdeněk Michl Vít Janoš (Gar.)	KZ	3	2P+1C	L	Z
21ZALD	Basics of Air Transport Jakub Hospodka, Tomáš Tlučhoř, Jiří Volt, Peter Olexa, Jan Slezáček, 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 De	scriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Parame	etric tests Nonpa	rametric tests
Regression and correlat	ion analysis		
12ZTS	Railway Lines and Stations	Z,ZK	4
Rail transport. Railway t	ack geometry parameters. Route layout of railway lines. Railway line construction - railway substructure and superstructure. S	Spatial layout of r	ailway lines.
Railway control systems	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 force	s in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determinat	e beams and sin	nple girders.
Principle of virtual work.	Kinematic method for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction	s. Cross-section	al characteristics
of planar shapes. Fiber	polygons and chains.		
20SYSA	Systems Analysis	Z,ZK	5
Introduction to system s	ciences, system viewpoint, terminology, typical system analysis tasks, system identification, system interface and interface tas	ks, processes, s	stem behaviour
and its analysis, strong	unctions and processes, genetic code, system identity, system architecture. Tools for system analysis - Petri nets, decision ta	bles, algorithms	or structural
tasks. Soft and hard sys	tems, methods for soft system analysis.		
14PRG	Programming	KZ	2
The Course Programmii	ng builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python progra	mming language	is expanded
here so that the participa	ant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and sea	arching, tuples, s	ets, dictionaries,
working with date and ti	me, regular expressions, functions and procedures, working with files (CSV, JSON, XML).		
17TEDL	Transport Technology and Logistics	KZ	3
Basic terms in transport	technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and freight transport planning.	ansport, organisa	ation of traffic in
each transport modus, t	echnologic factors of the side of operator and client, organisation of city transport, logistic technologies and their aplication us	ing various trans	port modus.
21ZALD	Basics of Air Transport	KZ	2
History, definitions, term	nology, basic rules. VFR/IFR. Basics of aerodynamics. Propulsion of aircraft. Aircraft design. Basics of navigation, radio navigatio	n. Weight, baland	ce, performance.
Flight planning, optimiza	tion of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic management, gr	ound handling, s	ecurity. Air crew.
Airlines and economics.	Space technologies.		
TV-2	Physical Education	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 grou	γ·					
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 Oldřich Hykš, Jana Kuklová, Pavel Demo, Zuzana Malá, Tomáš Vítů Jana Kuklová Pavel Demo (Gar.)	Z,ZK	5	2P+2C+18E	Z	Z
12MDE	Transport Models and Transport Excesses Tomáš Padělek, Josef Kocourek	Z,ZK	3	2P+1C+8E	Z	Z
11TGA	Graph Theory and its Applications in Transport Alena Rybičková, Denisa Mocková, Dušan Teichmann Alena Rybičková Alena Rybičková (Gar.)	Z,ZK	4	2P+2C+12E	Z	Z
18PZP	Elasticity and Strength Tomáš Doktor, Jitka Řezníčková, Daniel Kytýř, Jan Vyčichl, Jan Šleichrt, Josef Jíra, Ondřej Jiroušek Ondřej Jiroušek (Gar.)	Z,ZK	3	2P+1C+10E	Z	Z
20UITS	Introduction to Intelligent Transport Systems Jiří Růžička, Patrik Horažďovský, Kristýna Navrátilová, Eva Hajčiarová, Martin Šrotýř, Martin Langr, Vladimír Faltus, Pavel Hrubeš Martin Langr	Z,ZK	7	3P+2C+20E	Z	Z
12PPOK	Designing Roads, Highways and Motorways Tomáš Padělek, Josef Kocourek, Petr Kumpošt Josef Kocourek (Gar.)	KZ	3	1P+2C+10E	Z	Z
14DATS	Database Systems Jana Kaliková, Jan Krčál Jana Kaliková Jana Kaliková (Gar.)	KZ	2	1P+1C+10E	Z	Z
15JZ1A	Foreign Language - English 1 Markéta Vojanová, Dana Boušová, Marie Michlová, Marek Tomeček, Jan Feit, Markéta Musilová, Peter Morpuss, Jitka Heřmanová, Eva Rezlerová Lenka Monková (Gar.)	Z	3	0P+4C+10E	Z	Z

11FYZ	the courses of this group of Study Plan: Code=3S-BP-TET-24/25 Name=3rd Sem. Bachelor Full Physics	Z.ZK	5
=	Newton's laws, force fields, mechanics of continuum, thermodynamics, introduction to electrostatics and electric current.	_, ,	•
12MDE	Transport Models and Transport Excesses	Z,ZK	3
	c flow and methods for their measurement. Models of the traffic flow, communications load, line and urban systems. Theory of sment. Statistical characteristics of transport. Transport excesses, their analysis, the causes, identify and minimize the conseq	•	•
11TGA	Graph Theory and its Applications in Transport	Z,ZK	4
Basic terms of graph th	eory, paths in graphs, flows in networks, location problems, design problems on graphs, optimum routing, use of graphs in oth	er scientific discip	olines.
18PZP	Elasticity and Strength	Z,ZK	3
		,	
Tension and compress	on. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolte	d and welded join:	ts of structures.

20UITS	Introduction to Intelligent Transport Systems	Z,ZK	7
Terminology and legi	slative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamentals of i	nformation and tel	ecommunication
systems for ITS. Prin	ciples and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real exam	ples of possible ap	plications of the
principles of ITS.			
12PPOK	Designing Roads, Highways and Motorways	KZ	3
Definition, types, ow	nership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and stand	ard speed. Route i	n rural areas.
Pange of vision for s			
narige of vision for s	opping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. S	afety device. Cros	sings, junctions
intersections.	opping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. S	afety device. Cros	sings, junctions,
•	opping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. S Database Systems	afety device. Cros	sings, junctions,
intersections. 14DATS		KZ	2
intersections. 14DATS Basic concepts of da	Database Systems	KZ	2
intersections. 14DATS Basic concepts of da	Database Systems tabase systems, conceptual model, relational data model, the principles of normal forms, relational database design, security a	KZ	2

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

The role of the block: ZP

Code of the group: X1-BP-LOG-21/22

Name of the group: Research Groups Bachelor Full-Time TET-LOG from 2021/22

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

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

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

Credits in the group: 6 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11X31	Project 1 Michal Matowicki Michal Matowicki	Z	2	0P+1C	L	ZP
12X31	Project 1 Dagmar Kočárková, Martin Höfler	Z	2	0P+1C	L	ZP
14X31	Project 1 Jana Kaliková, Jan Krčál	Z	2	0P+1C	L	ZP
15X31	Project 1	Z	2	0P+1C	L	ZP
16X31	Project 1	Z	2	0P+1C	L	ZP
17X31	Project 1 Vit Janoš, Michal Drábek, Zdeněk Michl, Rudolf Vávra, Stanislav Metelka, Alena Rybičková, Denisa Mocková, Dušan Teichmann, Roman Štěrba, Václav Baroch (Gar.)	Z	2	0P+1C	L	ZP
18X31	Project 1	Z	2	0P+1C	L	ZP
20X31	Project 1 Jiří Růžička	Z	2	0P+1C	L	ZP
21X31	Project 1 Jakub Hospodka, Jakub Kraus, Andrej Lališ, Slobodan Stojić, Lenka Hanáková, Terézia Pilmannová, Peter Vittek, Natalia Guskova, Kateřina Grötschelová,	Z	2	0P+1C	L	ZP
22X31	Project 1	Z	2	0P+1C	L	ZP
23X31	Project 1	Z	2	0P+1C	L	ZP
11X32	Project 2	Z	2	0P+2C	Z	ZP
12X32	Project 2	Z	2	0P+2C	Z	ZP
14X32	Project 2 Jana Kaliková, Jan Krčál	Z	2	0P+2C	Z	ZP
15X32	Project 2	Z	2	0P+2C	Z	ZP
16X32	Project 2 Petr Bouchner, Tereza Kunclová	Z	2	0P+2C	Z	ZP
17X32	Project 2 Vít Janoš, Michal Drábek, Zdeněk Michl, Rudolf Vávra, Stanislav Metelka, Alena Rybičková, Denisa Mocková, Dušan Teichmann, Andrea Hrníčková,	Z	2	0P+2C	Z	ZP
18X32	Project 2 Nela Krčmářová	Z	2	0P+2C	Z	ZP
20X32	Project 2 Vladimír Faltus	Z	2	0P+2C	Z	ZP
21X32	Project 2 Jakub Hospodka, Jakub Kraus, Andrej Lališ, Slobodan Stojić, Lenka Hanáková, Terézia Pilmannová, Peter Vittek, Natalia Guskova, Kateřina Grötschelová,	Z	2	0P+2C	Z	ZP
22X32	Project 2	Z	2	0P+2C	Z	ZP

23X32	Project 2	Z	2	0P+2C	Z	ZP
11X33	Project 3	Z	2	0P+1C	L	ZP
12X33	Project 3 Dagmar Kočárková, Tomáš Padělek, Josef Kocourek, Martin Höfler, Jakub Zajíček, Ivo Novotný	Z	2	0P+1C	L	ZP
14X33	Project 3 Jana Kaliková, Jan Krčál	Z	2	0P+1C	L	ZP
15X33	Project 3	Z	2	0P+1C	L	ZP
16X33	Project 3 Petr Bouchner, Dmitrij Rožděstvenský	Z	2	0P+1C	L	ZP
17X33	Project 3 Vit Janoš, Michal Drábek, Zdeněk Michl, Rudolf Vávra, Stanislav Metelka, Alena Rybičková, Denisa Mocková, Dušan Teichmann, Roman Štěrba, Václav Baroch (Gar.)	Z	2	0P+1C	L	ZP
18X33	Project 3 Tomáš Fíla	Z	2	0P+1C	L	ZP
20X33	Project 3	Z	2	0P+1C	L	ZP
21X33	Project 3 Jakub Hospodka, Andrej Lališ, Slobodan Stojić, Lenka Hanáková, Terézia Pilmannová, Peter Vittek, Natalia Guskova, Kateřina Grötschelová, Stanislav Pleninger,	Z	2	0P+1C	L	ZP
22X33	Project 3	Z	2	0P+1C	L	ZP
23X33	Project 3	Z	2	0P+1C	L	ZP

Characteristics of the courses of this group of Study Plan: Code=X1-BP-LOG-21/22 Name=Research Groups Bachelor Full-Time TET-LOG from 2021/22

11X31	Project 1	Z	2
12X31	Project 1	Z	2
14X31	Project 1	Z	2
15X31	Project 1	Z	2
16X31	Project 1	Z	2
17X31	Project 1	Z	2
18X31	Project 1	Z	2
20X31	Project 1	Z	2
21X31	Project 1	Z	2
22X31	Project 1	Z	2
23X31	Project 1	Z	2
11X32	Project 2	Z	2
12X32	Project 2	Z	2
14X32	Project 2	Z	2
15X32	Project 2	Z	2
16X32	Project 2	Z	2
17X32	Project 2	Z	2
18X32	Project 2	Z	2
20X32	Project 2	Z	2
21X32	Project 2	Z	2
22X32	Project 2	Z	2
23X32	Project 2	Z	2
11X33	Project 3	Z	2
12X33	Project 3	Z	2
14X33	Project 3	Z	2
15X33	Project 3	Z	2
16X33	Project 3	Z	2
17X33	Project 3	Z	2
18X33	Project 3	Z	2
20X33	Project 3	Z	2
21X33	Project 3	Z	2
22X33	Project 3	Z	2
23X33	Project 3	Z	2

Name of the block: Compulsory courses in the program

Minimal number of credits of the block: 72

The role of the block: P

Code of the group: 4S-BP-LOG-24/25

Name of the group: 4th Sem. Bachelor Full-Time TET-LOG from 2024/25

Requirement credits in the group: In this group you have to gain 26 credits
Requirement courses in the group: In this group you have to complete 7 courses

Credits in the group: 06

Credits in the group: 26

Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11MSP	Modeling of Systems and Processes Bohumil Kovář, Lucie Kárná Bohumil Kovář Bohumil Kovář (Gar.)	Z,ZK	4	2P+2C+12E	L	Р
17ESYS	Transport Systems Economy Roman Štěrba, Rudolf Franz Heidu Rudolf Franz Heidu (Gar.)	Z,ZK	6	3P+2C+18E	L	Р
17LGT	Logistics Tomáš Horák, Eliška Glaserová Tomáš Horák (Gar.)	Z,ZK	6	3P+2C+18E	L	Р
11LP	Linear Programming Šárka Voráčová, Pavla Pecherková, Ivan Nagy Pavla Pecherková Ivan Nagy (Gar.)	KZ	3	2P+1C+12E	L	Р
11MDP	Transport Prognostic Methods Alena Rybičková Alena Rybičková (Gar.)	KZ	2	2P+0C+10E	L	Р
16DPO	Vehicle Technology Josef Mik, Josef Svoboda, Přemysl Toman Josef Mik (Gar.)	KZ	2	2P+0C+10E	L	Р
15JZ2A	Foreign Language - English 2 Markéta Vojanová, Marie Michlová, Jan Feit, Markéta Musilová, Peter Morpuss, Jitka Heřmanová, Eva Rezlerová, Barbora Horáčková Marek Tomeček (Gar.)	Z,ZK	3	0P+4C+10E	L	Р

Characteristics of the courses of this group of Study Plan: Code=4S-BP-LOG-24/25 Name=4th Sem. Bachelor Full-Time TET-LOG from 2024/25

11MSP	Modeling of Systems and Processes	Z,ZK	4
System and subsys	tem, external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of c	lifferential and differ	ential equations.
Linear and nonlinea	ır system, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer functi	on. Stability of LTI s	systems.
Discretization of co	ntinuous systems. System interconnection.		
17ESYS	Transport Systems Economy	Z,ZK	6
Macroeconomics, m	nacroeconomic indicators, transport system, transport externalities, energy in transport, shared economy, state transport system	and its quantificatio	n, rationalization
of transport system			
17LGT	Logistics	Z,ZK	6
Logistics definition,	basic concepts, store, warehouse, transport and handling equipment, logistics technology, logistics centers, information and int	elligent logistics sy	stems, logistics
ait.			
city.			
11LP	Linear Programming	KZ	3
11LP	Linear Programming problems to the linear programming, transcription of some practical problems to the linear programming problems. Simplex and converged to the linear programming problems are converged to the linear programming problems.	1 1	_
11LP Formulation of the p		1 1	_
11LP Formulation of the p	problem of linear programming, transcription of some practical problems to the linear programming problems. Simplex and conversely	1 1	_
11LP Formulation of the p solutions, duality pr 11MDP	problem of linear programming, transcription of some practical problems to the linear programming problems. Simplex and convinciple in linear programming, stability of solution of linear programming problem. Traffic problem.	ex polyedra. Simple	ex method, basic
11LP Formulation of the p solutions, duality pr 11MDP	problem of linear programming, transcription of some practical problems to the linear programming problems. Simplex and convinciple in linear programming, stability of solution of linear programming problem. Traffic problem. Transport Prognostic Methods	ex polyedra. Simple	ex method, basic
11LP Formulation of the psolutions, duality pr 11MDP The techniques of 6	problem of linear programming, transcription of some practical problems to the linear programming problems. Simplex and convinciple in linear programming, stability of solution of linear programming problem. Traffic problem. Transport Prognostic Methods	ex polyedra. Simple	ex method, basic
TILP Formulation of the psolutions, duality pr 11MDP The techniques of eindices. 16DPO	problem of linear programming, transcription of some practical problems to the linear programming problems. Simplex and convinciple in linear programming, stability of solution of linear programming problem. Traffic problem. Transport Prognostic Methods economical analysis in the domain of analysis of dependencies, analysis and construction of time series and comparsion of states.	KZ KZ	x method, basic 2 differencies and
TILP Formulation of the psolutions, duality pr 11MDP The techniques of cindices. 16DPO Vehicle. Functions,	problem of linear programming, transcription of some practical problems to the linear programming problems. Simplex and convinciple in linear programming, stability of solution of linear programming problem. Traffic problem. Transport Prognostic Methods economical analysis in the domain of analysis of dependencies, analysis and construction of time series and comparsion of state Vehicle Technology	KZ KZ	x method, basic 2 differencies and
TILP Formulation of the psolutions, duality pr 11MDP The techniques of cindices. 16DPO Vehicle. Functions,	problem of linear programming, transcription of some practical problems to the linear programming problems. Simplex and convinciple in linear programming, stability of solution of linear programming problem. Traffic problem. Transport Prognostic Methods economical analysis in the domain of analysis of dependencies, analysis and construction of time series and comparsion of state Vehicle Technology principles. Drive, vehicle construction. Road transport, safety, heavy duty vehicle desing, dynamics. Rail transport, safety, carrian analysis of transport. Management and control of various means of transport. Safety.	KZ KZ	x method, basic 2 differencies and
11LP Formulation of the psolutions, duality pr 11MDP The techniques of eindices. 16DPO Vehicle. Functions, Transshipment. Tec	problem of linear programming, transcription of some practical problems to the linear programming problems. Simplex and convinciple in linear programming, stability of solution of linear programming problem. Traffic problem. Transport Prognostic Methods economical analysis in the domain of analysis of dependencies, analysis and construction of time series and comparsion of state Vehicle Technology principles. Drive, vehicle construction. Road transport, safety, heavy duty vehicle desing, dynamics. Rail transport, safety, carria	KZ istical values using KZ ge design. Drive. E	2 differencies and 2 ectric traction.

Code of the group: 5S-BP-LOG-24/25

Name of the group: 5th Sem. Bachelor Full-Time TET-LOG from 2024/25 Requirement credits in the group: In this group you have to gain 23 credits

Requirement courses in the group: In this group you have to complete 6 courses

Credits in the group: 23

Note on the group:

1010 011 1110 9	·oup.					
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
12ZPV	Railway Operation Martin Jacura, Jan Kruntorád	Z,ZK	4	2P+1C+12B	Z	Р
17EPOD	Economics of Transport Company Václav Baroch, Alexandra Dvořáčková Alexandra Dvořáčková (Gar.)	Z,ZK	6	4P+2C+18B	B Z	Р
17TVD	Technology of Public Transport Vít Janoš, Zdeněk Michl, Stanislav Metelka, Jiří Pospíšil Vít Janoš (Gar.)	Z,ZK	5	2P+2C+18B	Z,L	Р
14DMG	Datamining Radek Holý Radek Holý (Gar.)	KZ	2	0P+2C+10B	B Z	Р
17MAGD	Marketing in Transport Petra Skolilová Petra Skolilová (Gar.)	KZ	4	2P+1C+12B	B Z	Р

17ZAP Fundamentals od law Petra Skolilová, Martina Děvěrová (Gar.) Z 2 2P+0C+10	B Z	Р
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Characteristics of the courses of this group of Study Plan: Code=5S-BP-LOG-24/25 Name=5th Sem. Bachelor Full-Time TET-LOG from 2024/25

12ZPV	Railway Operation	Z,ZK	4
Legislation in railway tr	nasport. Railway vehicles. Railway signals and signal devices. Railway traffic organisation and operation. Simplified railway tra	offic operation. Rail	way vehicles
brakes. Railway vehicle	s marking. Operation intervals. Theoretical graph of train running.		
17EPOD	Economics of Transport Company	Z,ZK	6
Economy, marginal utili	ty, marginal costs, function of supply and demand, market equilibrium, perfect competition and types of market arrangement.	Transportation ma	rket, transport
company, it's environm	ent, balance sheet, costs, revenue, profit and maximalization of profit. Business plan, taxation in transport.		
17TVD	Technology of Public Transport	Z,ZK	5
The course contents a	detailed description of new knowledge and basic principles of hierarchical planning of public transport system accenting the c	eneral transport p	lanning and
quantified transport der	mand. The course would be oriented on multiple and multi-level optimisation of passenger public transport system.		
140MC	Determining	1/7	_
14DMG	Datamining	KZ	2
	and knowledge, data warehouses and OLAP technology for data mining, data preprocessing in the process of knowledge acc		_
Types of data sources a mining characteristics of	and knowledge, data warehouses and OLAP technology for data mining, data preprocessing in the process of knowledge acc of concepts (classes), mining association rules from relational db. and data warehousing, classification (decisions tree, Bayes	uisition systems fo	or data mining,
Types of data sources a mining characteristics of	and knowledge, data warehouses and OLAP technology for data mining, data preprocessing in the process of knowledge acc	uisition systems fo	or data mining,
Types of data sources a mining characteristics of	and knowledge, data warehouses and OLAP technology for data mining, data preprocessing in the process of knowledge acc of concepts (classes), mining association rules from relational db. and data warehousing, classification (decisions tree, Bayes	uisition systems fo	or data mining,
Types of data sources a mining characteristics of Prediction. Cluster analam 17MAGD	and knowledge, data warehouses and OLAP technology for data mining, data preprocessing in the process of knowledge acc of concepts (classes), mining association rules from relational db. and data warehousing, classification (decisions tree, Bayes ysis. Mining in complex structured data, multimedia dbf., www.	uisition systems for an cob., using neu	or data mining, iral networks).
Types of data sources a mining characteristics of Prediction. Cluster anal 17MAGD Development of strateg	and knowledge, data warehouses and OLAP technology for data mining, data preprocessing in the process of knowledge according to concepts (classes), mining association rules from relational db. and data warehousing, classification (decisions tree, Bayes ysis. Mining in complex structured data, multimedia dbf., www. Marketing in Transport	uisition systems for an cob., using neu	or data mining, ural networks). 4 ket. Website
Types of data sources a mining characteristics of Prediction. Cluster anal 17MAGD Development of strateg development, search et	and knowledge, data warehouses and OLAP technology for data mining, data preprocessing in the process of knowledge according to concepts (classes), mining association rules from relational db. and data warehousing, classification (decisions tree, Bayes ysis. Mining in complex structured data, multimedia dbf., www. Marketing in Transport Marketing plans. Implementation of marketing campaigns. Branding and brand promotion. Public relations industry, business	uisition systems for an cob., using neu	or data mining, ural networks). 4 ket. Website

Code of the group: 6S-BP-LOG-22/23

Name of the group: 6th Sem. Bachelor Full-Time TET-LOG from 2022/23 Requirement credits in the group: In this group you have to gain 23 credits

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

Credits in the group: 23 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
17FID	Financing and Investment in Transport Alexandra Dvořáčková, Olga Mertlová Olga Mertlová (Gar.)	Z,ZK	4	2P+1C+12B	L	Р
17IVED	Integration of Public Transport Roman Štěrba Roman Štěrba (Gar.)	Z,ZK	3	2P+1C+10B	L	Р
17KLID	Quality in Transport Service Pavel Edvard Vančura Pavel Edvard Vančura (Gar.)	Z,ZK	3	2P+1C+10B	L	Р
17MRR	Managerial Decision-making and Management Daniel Pilát, Petra Skolilová Petra Skolilová (Gar.)	Z,ZK	4	2P+2C	L	Р
14MPG	Modern Programming Approaches Michal Jeřábek, Vít Fábera Michal Jeřábek Vít Fábera (Gar.)	KZ	2	0P+2C+8B	L	Р
17GEDS	Geography of Transport Systems Miroslav Marada Miroslav Marada (Gar.)	KZ	2	2P+0C+8B	L	Р
12ZAR	Introduction to Architectural Design Karel Hájek	Z	3	2P+0C+8B	L	Р
17NAPR	Freight Traffic Roman Štěrba Roman Štěrba (Gar.)	Z	2	2P+0C+8B	L	Р

Characteristics of the courses of this group of Study Plan: Code=6S-BP-LOG-22/23 Name=6th Sem. Bachelor Full-Time TET-LOG from 2022/23

17FID	Financing and Investment in Transport	Z,ZK	4
Sources of financi	ng of transport infrastructure, the role of public administration in the financing and realization of investment in transport, the inves	tment project projec	ct cycle, subsid
programs and thei	r rules, competition, effectiveness and efficiency of spending public funds, evaluation systems of public projects and programs.		
17IVED	Integration of Public Transport	Z,ZK	3
ransport policy of	both EU and CR, transport sectoral strategies, land use planning and evolution of space organization, integration of public servi	ce in territory, forms	and content of
ctivities and orga	nizational structures of integrated public transport systems, internal and external bindings, contracting, carriage relations, conditi	ons of both rail and	bus transport
perations, grading	g and quality, IS, marketing.		
17KLID	Quality in Transport Service	Z,ZK	3
eneral interpreta	tion of quality, standards and international standardization, integrated management systems, modern attitudes of quality manage	ement, quality in trai	nsport service
and logistics, meth	ods of quality measurement, quality management, risks and opportunities, public transport quality, view of costumers, carriers ar	nd PT-organizers, qu	uality standard
quality costs, mark	eting and costumer satisfaction.		
7MRR	Managerial Decision-making and Management	Z,ZK	4
ecision-making p	rocess; identifying exactly what the problem is; evaluating the issue; solving the issue; using multiple perspective analysis to make	ce a decision; usual	method of
hinking.			
I4MPG	Modern Programming Approaches	KZ	2
students will be re	minded of some aspects of Pythom programming, learn basic concepts and constructs from object-oriented programming and the	eir implementation	in Python. The
	basics of working with data libraries in Python, namely NumPy, Pandas, Mathlatlib, and practice with examples of smaller and Is		

17GEDS	Geography of Transport Systems	KZ	2				
Regional differentiation of the transport system. Sociogeographic regionalization and its relation to transport. Transport and local and regional development. Spatial interaction							
theoretical and methodological framework. Mobility research - travel behavior, mode choice and the influence onto "modal-split." Modal competition. Practical use of transport-geographical							
analysis in transportat	analysis in transportation 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 transport. Railway stations. Local							
communications. International airports.							
17NAPR	Freight Traffic	Z	2				
Freight traffic and trans	Freight traffic and transportation system conditions of implementation forwarding						

Name of the block: Compulsory elective courses

Minimal number of credits of the block: 6

The role of the block: PV

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

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

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

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

Credits in the group: 6 Note on the group:

	Name of the course / Name of the group of courses					
Code	(in case of groups of courses the list of codes of their members)	Completion	Credits	Scope	Semester	Role
	Tutors, authors and guarantors (gar.)					
21Y1AM	Aeronautical Information Management (AIM) Radek Hodač Radek Hodač (Gar.)	KZ	2	2P+0C	Z	PV
00Y1XB	Active participation in a scientific project, workshop, short-term trip abroad Patrik Horažďovský Patrik Horažďovský Patrik Horažďovský (Gar.)	KZ	2	2P+0C		PV
20Y1AF	Alternative Forms of Transportation Project Financing Mária Jánešová Mária Jánešová (Gar.)	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	KZ	2	2P+0C	Z	PV
20Y1AE	Applied Electronics	KZ	2	2P+0C	Z	PV
14Y1BE	Barrierless Transport Jan Krčál	KZ	2	2P+0C	L	PV
15Y1BO	Work Safety and Health Protection in Transportation	KZ	2	2P+0C	L,Z	PV
11Y1BK	Error Detection Codes for Interlocking Systems Lucie Kárná Lucie Kárná Lucie Kárná (Gar.)	KZ	2	2P+0C	Z	PV
21Y1BS	Unmanned aircraft systems 1	KZ	2	2P+0C	L	PV
14Y1BM	Biometric Methods	KZ	2	2P+0C	Z	PV
15Y1DZ	History of Railway	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 Jan Feit Jan Feit (Gar.)	KZ	2	2P+0C	Z	PV
18Y1EM	Experimental Methods in Mechanics Daniel Kytýř Daniel Kytýř Daniel Kytýř (Gar.)	KZ	2	2P+0C	Z,L	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	KZ	2	2P+0C	L	PV
15Y1HD	History of City Mass Transport Milan Dont Milan Dont (Gar.)	KZ	2	2P+0C	Z	PV
12Y1HD	Traffic Noise	KZ	2	2P+0C	L	PV
15Y1HE	Work Hygiene and Ergonomics in Traffic Petr Musil Petr Musil (Gar.)	KZ	2	2P+0C	Z	PV
16Y1IS	Interactive simulators and simulations	KZ	2	2P+0C	L,Z	PV

12Y1KN	Combined Transportation Petr Nejedlý Petr Nejedlý (Gar.)	KZ	2	2P+0C	Z	PV
12Y1KP	Communication and Promotion of Transport Projects	KZ	2	2P+0C	L	PV
20Y1KP	Communication and presentation skills Jiří Růžička, Patrik Horaždovský, Kristýna Navrátilová Jiří Růžička Jiří Růžička (Gar.)	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	KZ	2	2P+0C	L,Z	PV
20Y1LN	Location and Navigation	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 Petr Koudelka (Gar.)	KZ	2	2P+0C	L,Z	PV
21Y1MP	Matlab for project-oriented study Lenka Hanáková, Vladimír Socha Lenka Hanáková Vladimír Socha (Gar.)	KZ	2	2P+0C	Z	PV
14Y1MP	Modeling Complex Assemblies and Models in Parametric Modeller	KZ	2	2P+0C	Z	PV
15Y1MK	Modern History in Context: Every Day Life and Transport	KZ	2	2P+0C	L	PV
15Y1NE	German in the Economy and Society	KZ	2	2P+0C	Z	PV
21Y1OH	Airline Business and Operations Peter Olexa, Peter Vittek, Ladislav Capoušek Peter Olexa Peter Vittek (Gar.)	KZ	2	2P+0C	Z	PV
23Y1OK	Protection of Critical Objects and Infrastructures	KZ	2	2P+0C	L	PV
20Y1OI	Fare Collection and Information Systems	KZ	2	2P+0C	L	PV
14Y1OJ	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,L	PV
20Y1OK	Road Lighting	KZ	2	2P+0C	L	PV
11Y1PV	Parametrical and Multicriterial Programming Olga Vraštilová 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	KZ	2	2P+0C	L,Z	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	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 Terézia Pilmannová, Stanislav Pleninger Terézia Pilmannová Stanislav Pleninger (Gar.)	KZ	2	2P+0C	Z	PV
12Y1PD	Assessment of Transport Structures	KZ	2	2P+0C	Z	PV
20Y1PK	Product Quality Management Processes Martin Leso Martin Leso (Gar.)	KZ	2	2P+0C	Z	PV
14Y1PJ	C Programming Language	KZ	2	2P+0C	Z	PV
12Y1C1	Designing Roads in Civil 3D I	KZ	2	2P+0C	L,Z	PV
12Y1C2	Designing Roads in Civil 3D II Tomáš Honc Tomáš Honc (Gar.)	KZ	2	2P+0C	Z,L	PV
14Y1PA	3D Modeling in AutoCAD	KZ	2	2P+0C	Z	PV
16Y1PV	Operation, Construction and Maintenance of Vehicles	KZ	2	2P+0C	L	PV
12Y1PU	Organization Disposition of Railway Stations	KZ	2	2P+0C	L	PV
12Y1RU	Railway Lines Reconstruction	KZ	2	2P+0C	Z	PV
16Y1RE	Control and Electronic Vehicle Systems Josef Mik, Přemysl Toman Josef Mik (Gar.)	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	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 David Lehet, Jaroslav Machan Jaroslav Machan (Gar.)	KZ	2	2P+0C	Z	PV
12Y1SU	Road Management and Maintenance	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,Z	PV
11Y1TG	Graph Theory Lucie Kárná	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	KZ	2	2P+0C	L	PV
12Y1VR	Public Transport in Cities and Regions Vladimír Pušman Vladimír Pušman (Gar.)	KZ	2	2P+0C	Z	PV
23Y1VS	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 Voráčová	KZ	2	2P+0C	L	PV
14Y1ZJ	Fundamentals of programming in JAVA	KZ	2	2P+0C	Z	PV
12Y1ZU	Principles of Urbanism Karel Hájek Karel Hájek (Gar.)	KZ	2	2P+0C	Z,L	PV
15Y1ZV	East-West dichotomy: Prelude to the Cold War Marie Michlová Marie Michlová (Gar.)	KZ	2	2P+0C	Z	PV
16Y1ZL	Vehicle Testing, Legislation and Construction Zuzana Radová Zuzana Radová (Gar.)	KZ	2	2P+0C	Z	PV

Characteristics of	of the courses of this group of Study Plan: Code=Y1-BP-LOG-24/25 Name=Comp. Sel. Cours	es Bachelor	Full-Time
TET-LOG from 20	024/25		
21Y1AM	Aeronautical Information Management (AIM)	KZ	2
Definition and basic or	verview of AIS and AIM. Transition from AIS to AIM. Regulatory base. Provision of AIS/AIM in the Czech Rep. AIP (Aeronautica	al Inf. Publication).	VFR Manual of
the Czech Rep. AIRA0	C System. NOTAM messages.PIB (Pre-flight Informtion Bulletin). AIC (Aeoronautical Inf. Circulars). Aeronautical Charts. EAD (Europena AIS Da	tabase). QMS
(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 suc	h forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt p	ayments come fro	m its budget but
the final debtor is not a	a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of	securities as an al	ternative source
of transportation and t	elecomunication projects.		
18Y1AM	Anatomy, Mobility and Safety of Man	KZ	2
Survey of tissues. Ana	tomical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circulat	ion and nervous s	ystem. Structure
and biomechanics of r	nuscular-skeletal system. Injury of human organs and musculo-skeletal system during traffic accidents. Mobility of ill and injure	ed man and his tre	atment. Human
joint prostheses. Prote	ctive means and traffic safety regulations.		
14Y1AV	Animation and Visualization	KZ	2
Advanced modification	ns and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and	Space Warp object	cts. Atmospheric
and other effects, rend	dering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animatio	n using Inverse Ki	inematics.
12Y1AE	Applied Ecology	KZ	2
General ecology - eco	logical concepts and principles, ecosystem, ecological factors, energy flow through the ecosystem. Application of knowledge v	vithin EIA docume	entation. Special
ecology. Landscape e	cology - origin and historical development. Landscape definition and classification. Success. Traffic constructions in the country	/side. Landscape	and nature
protection. Applied eco	ology.		
20Y1AE	Applied Electronics	KZ	2
Basic electronic semic	conductor components, their principles, characteristics and typical connection diagrams. Semiconductor PN junction diodes, tra	ansistors, thyristor	, operational
amplifiers, basic logic	gates. Functions of basic electronic circuits and methods for their designs (rectifiers, voltage regulator with Zener diode, transi	stor as an amplific	er, operational
amplifier as an invertir	ng and noninverting amplifier).		

14Y1BE	Barrierless Transport	KZ	2
	accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Studential point of view accessible public transportation in terms of architectural barriers and also for transportation-technological point of view.	_	-
	ent roads, railway stations, public transport stops, terminal buildings, vehicles, public transport, information and orientation syste	ms and transport	ation technology.
	will be supplemented by practical examples.		
15Y1BO	Work Safety and Health Protection in Transportation	KZ	2
	, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation ne and foreign business trips, statistics, working practice.	. Health protection	n programmes,
11Y1BK	Error Detection Codes for Interlocking Systems	KZ	2
	d methods for its assuring. Safety codes linear codes, cyclic codes, BCH codes, Reed-Solomon codes. Transmission channels		
probability of undetected	d error. Design and assessment of detection codes; requirements of the European standard EN 50159.		
21Y1BS	Unmanned aircraft systems 1	KZ	2
Unmanned Aviation Dev	velopment. Aircraft design. Legislation in force in the Czech Republic. Planning and execution of the flight. Airspace division.	Operational risks	and operational
procedures. Practical flig			
14Y1BM	Biometric Methods	KZ	2
	authentication methods, principles and performance measurement of biometric systems, overview of biometric technologies,		_
-	od, 2D and 3D face recognition, vein patterns on the wrist, ear biometrics, fingerprint recognition, skin spectroscopy, behavior	ral methods, the u	ise of biometrics
	s, safety and risks of biometric technologies.	1/7	0
15Y1DZ	History of Railway team railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Re	KZ	2 action World
•	levelopment in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train conn	•	
	ay junctions. Excursions and projections.	ootiono, ranway iii	100 0011011 4011011,
12Y1DS	Project Documentation in Practice	KZ	2
	creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining proces		_
creation of some project		.	. J
17Y1EV	Public Sector Economy	KZ	2
Economic and financial	theory of public sector, public choice theory, externalites, decisions about public finance allocation, economic assesment of p		BA, MCA, CEA),
tax system of the CR, sta	ate budget, management of public projects a their economic efficiency assessment, way of elaboration of PPP projects, funding	g from EU funds, p	orogram HDM-4.
23Y1EH	Electronics and hardware in security of transportation	KZ	2
Types and parameters of	of signals. Passive circuits, properties, basic measurements. Passive filters, semiconductors. Operational amplifiers, basic circ	cuits, parameters.	Active filters.
Power supplies. Logic ci	rcuits. AD converters. Connection of analog and digital parts. Basic blocks of digital signal processing. Measurement processing	g. Design and fab	rication methods
in electronics.			
20Y1EK	Qualification in Electrical Engineering	KZ	2
· · · · · · · · · · · · · · · · · · ·	h measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock haza	-	_
-	red currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legisla	ation, standards a	and regulations
	safety and electrical engineering.	KZ	2
16Y1EN	Energy Requirements of Vehicles g inertial of the vehicles. Types of energy - kinetic, static, heat, chemical and others. Ways of energy change into kinetic ener		
=	engine. Energy accumulation means, accumulator, flywheel, fuel cell. Energy recuperation. WTW analysis.	gy. Combustion e	rigirie, electric
20Y1EA	Environmental Aspects of Transport	KZ	2
-	e, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabili		
	nts 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
· ·	ation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism		principles and
goals. Europe after Hitle	er's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and	l its consequence	s for Europe.
New quality of French-G	German relationship - a driving power of starting European integration.		
18Y1EM	Experimental Methods in Mechanics	KZ	2
	f experimental mechanics. Sensors for mechanical testing. Overview of experimental methods. Destructive and non-destructive	=	-
	s and sample preparation. Tensile and bending tests. Electrical resistance strain gages. Optical based strain measurement. F	atigue and lifetim	e prediction.
	testing. Introduction to electron microscopy. Errors in measurement.	1/7	
15Y1FD	French Area Studies and Transportation	KZ	2 orminology
	l regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air tra ure. Current political system. System of education, studying in France. Selected authors of French literature. French gastronol	=	erminology.
14Y1HW	Computer Hardware	KZ	2
	basics of logical circuits design and their realization using FPGA. In detail, description of computer architecture and separate		
arithmetic and logical ur		pante areagaming	,
15Y1HL	History of Civil Aviation	KZ	2
	velopment of aircrafts lighter than air. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of		
World airports. Famous	aviators. Helicopters. CSA airplanes. Development of aircrafts in Czechoslovakia between the years 1945-1989. Classic era	of aviation. Golde	n era of civil
aviation. Modern era of	civil aviation. Airline companies. Supersonic flying.		
15Y1HD	History of City Mass Transport	KZ	2
	sport in the world, development of tram, bus and trolley-bus systems. History of transport networks in the world, current tren		ents of tariff and
	ory of city transport in Prague and Brno. History of tram, bus and trolley-bus operation systems in the Czech Republic and SI		
12Y1HD	Traffic Noise	KZ	2
	asic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regulat		
	n acoustic, noise transmission, soundproofing. Types of noise sources in area. Determination of acoustic situation in the area ement of transport noise. Acoustic studies, measuring protocol.	of interest, ivietno	adology of
		V7	
15Y1HE Basic knowledge of occ	Work Hygiene and Ergonomics in Traffic upational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of these	KZ e factors on health	2 of workers
-	of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technology to		
•	of working conditions that do not damage public health. Mutual links. That Phaceline-environment. Adaptation of technology to the field of transportation; relevant legislature.	. peccionido ana	or a mair.
16Y1IS	Interactive simulators and simulations	KZ	2
	pplication of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical m		
-	namics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simu		

12Y1KN Combined Transportation	KZ	2
Combined transport strategy and legislation. Load units. Means of transport in combined transport. Combined transport systems. Transshipping and	eas. Multimodal log	istic centres.
12Y1KP Communication and Promotion of Transport Projects	KZ	2
Fundamentals of Public Relations and the power of public opinion. Work and tasks of PR department and press spokesperson. Communication wi	•	
networks and beyond. Communication strategy of transport projects. Systematic goodwill building. Crisis situations in communication and preparat	on for crisis comm	unication. The
influence of political marketing and political PR on transport projects. Lobbing.	KZ	2
20Y1KP Communication and presentation skills Motivation, priorities and their fulfillment, current communication networks, work with various sources, formal requirements of emails and final these	1	I
teamwork, emotional intelligence, manipulation and way of working with it, coping with stressful situations, formal requirements of presentations, were with various sources, formal requirements of presentations, were presentations and way of working with it, coping with stressful situations, formal requirements of presentations, were presentations and way of working with it, coping with stressful situations, formal requirements of presentations, were presentations and way of working with it.		
presentation, presentation skills, presentation skills in online environment.	.,	3
23Y1KM Crisis Management	KZ	2
Theory and legal frame of crisis management with direction to Rescue system (IZS). After introduction to safety domain, there are terms and knowledge and the safety domain.	dge on: theory and	position of crisis
management and its targets; IZS-crisis management-crisis planning; and basic legislation. Practical part is concentrated to responsibility matrix co	-i	•
23Y1KO Quantum Physics and Optoelectronics	KZ	2
Ground of quantum physics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics components.	1/7	0
23Y1KY Cybernality Juridical aspects of behavior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterroris	KZ	nected aspects
23Y1KB Cyber security in transportation	KZ	2
Basic concepts of security and cyber security, legal status in the field of cyber security, virtual cyberspace and communities, taxonomy of crimes in	1	_
engineering, cyber attack technology, information security, cyber attacks on telematics systems, security of systems with artificial intelligence, norr		
21Y1LJ Aeronautical Radio and Flight Instruments	KZ	2
Basic definitions, history of aircraft instrumentation, aerometric instrumentation, Earth magnetism, aircraft electric equipment, gyroscopic instrument		
other aircraft equipment, engine instrumentation, warning and recording systems, instrumentation operational requirements, radiocommunication		
21Y1LS Air Traffic Services	KZ	2
Airspace structure in Czech Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR at USA and Czechoslovakia. ATS - Model of financing. Training System of Air Traffic Controllers. Future development of ATS.	APP a ACC contro	DI. HISTORY OF ALS
17Y1LL Logistics of Passenger and Freight Air Transport	KZ	2
Logistics airline passenger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aeria	1	_
air cargo. Information systems in air transport. Global distribution systems.		
20Y1LN Location and Navigation	KZ	2
Description and examples of road networks, localization on the network. Routing algorithms, their properties and implementation. Description and	examples of datase	ets for finding
transport connections, routing algorithms, their properties and implementation.		
23Y1MK Crisis Situation Management in Critical Infrastructure	KZ	2
Determination of critical infrastructute elements on all levels, their protection systems, responsibilities of particular agencies of the state administrative their responsibilities to anounce particular safety provisions. Physical and cyber protection of critical infrastructure with special attention to the soft	_	overnment, and
23Y1MU Emergency Events Management Solution in Transport Infrastructure	KZ	2
Basic solutions of emergency events with emphasis of the transport infrastructure events and their solution management. Knowledge in the emerger	1	1
in liquidation work within the transport infrastructure.		
17Y1MD Marketing in Transportation	KZ	2
General principles of marketing applied to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transport	ort and the resultin	g differences in
the application of marketing.	1.7	
18Y1MT Engineering Materials	KZ	2
Systematic overview of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymer to biological materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's selection		attention is paid
21Y1MP Matlab for project-oriented study	KZ	2
The subject's syllabus is focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exer	1	1
particular examples, based on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improve	ment of students' N	/latlab skills.
14Y1MP Modeling Complex Assemblies and Models in Parametric Modeller	KZ	2
Assemblies programming - tools and methodology of working subassemblies and assemblies, sheet metal parts modelling, welded assemblies, pi	pelines, and distrib	ution lines.
Photorealistic output rendering - physical and material properties, lighting sources. MKP - visual example.	1.7	
15Y1MK Modern History in Context: Every Day Life and Transport Historical overview of modern history of every day life, science, technology and transport in a wider context.	KZ	2
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
Recent economic and social issues of German speaking countries and of the EU. Reading and listening of texts. Lexical, grammatical and semant	1	_
selected topics.		
21Y1OH Airline Business and Operations	KZ	2
The course provides a comprehensive view of the commercial, operational and transportation activities of air transport companies. It focuses on the or	ganizational structu	re of companies,
various aspects of their strategy, economic and operational indicators. It introduces students in detail to operational processes and the essentials of	ransportation proce	esses. It provides
a basic view of the economic aspects of air transport.	1/7	
23Y10K Protection of Critical Objects and Infrastructures Types of technological systems, critical item, risks and their courses, criticality, vulnerability, connectivity, dependability, resilience, failure, protection	KZ	2 piects and critical
infrastructures.	, salety of critical of	njecis and childar
20Y10I Fare Collection and Information Systems	KZ	2
Fare collection systems in public transport and their components (on-board units, validators, turnstiles,). Information systems and their components	ı	1
panels) and operators (cycles, location or current delay of vehicles,). The issue of tariff systems. Other examples of clearance systems (parking		
14Y1OJ Object - oriented programming in JAVA	KZ	2
Objective thinking. Encapsulation. Classes. Attributes. Access modifiers. Methods and overloading. Special methods (constructors, getters / setters .		
data types. Inheritance. Polymorphism. Statics, constants, interfaces, abstract classes, enum, packages, exceptions, collections, generics, lambda	T	
14Y1OP Operating System Distributions. Installation GNU/Linux OS. X-window system. Rights management - users and groups, ACL rights. Filesystems and attributes. Progra	KZ	2 s OS boot
runlevels. Basic console programs / commands. Config files. SW management, package systems. Programs in graphic shell - text, spreadsheet, gr	•	
communication. Services management. Safe and secure configuration of OS. Remote administration.		

17Y10F	Personal Finance	KZ	2
, ,	et, financing of basic living needs), debt (loans and credits, payment instruments, interest and fees, debt trap), financing of he	•	• • •
	icing), savings and investments (investment horizon, return, risk, investment strategy), insurance (insurance types, suitability a	and adequacy), se	curing the future
(retirement savings and		1/7	
20Y1OK	Road Lighting	KZ	2
	and terms, street lighting components (luminaires, control cabinets for street lighting, street lighting cables), characteristics of I ards, measurement of illuminance and luminance in road lighting, tunnels, conceptual approach to street lighting design, ligh	•	٠ ا
Relux, street lighting co		ling calculations if	II DIALUX allu
11Y1PV		KZ	2
l l	Parametrical and Multicriterial Programming of linear programming with a parameter in objective function, on right sides and in the matrix of coeficients of linear constraints	1	
			2
17Y1PM	Personnel Management roup, choice, evaluation and education of human sources, work adaptation, teamwork, intercul	KZ	_
			2
12Y1PC	Pedestrian and Cycling Transport Pedestrian crossings. Modifications for blind, dim-sighted and disabled people. Design of cycle routes network. Ways of cycle re	KZ	_
•	of cyclists from other transport modes. Cycle tracks and its design - one way streets, reserved traffic lanes, bus stops, crossi	•	٠. ا
	and road marking for cyclists.	igs with other trai	isport modes,
14Y1PG	Computer Graphics	KZ	2
-	c and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with ec	1 1	
- :	s, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics cards.	nung programs (w	itiliii tile usei
14Y1P2	Computer Aid of Transportation Projecting 2	KZ	2
–	ation for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting,	1	_
	relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic trans		
section). Basics of 3D m	, , , , , , , , , , , , , , , , , , , ,	311011 0di VO, 01000	and longitudina
18Y1PS	Computer Simulations in Mechanics	KZ	2
	of tools for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model develop	1	_
•	s. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary conditions	· · · · · · · · · · · · · · · · · · ·	1
-	nodal analysis. Introduction to complex nonlinear problems.	and application o	
14Y1PI	Corporate Information System	KZ	2
	edge, components of information system, syntatic and semantic sense of data, structure of corporate information system, pa	1	_
	n, storage, etc.), corporate information politic and information control, risks of information system operation, legal environmen		-
**	n, information system security, data protection, safety politics.	•	
14Y1PZ	Advanced Data Processing in Spreadsheets	KZ	2
	with principles of working in a spreadsheet. Graphic layout of the table appearance, formatting of numbers, insertion of form		s, including
	ion. Working with large spreadsheets, filters, advanced filters, database functions. Pivot tables and charts, conditional formattir		- 1
data analysis. Examples	s and questions from various companies and training.		
21Y1PC	ATC Procedures and Activities	KZ	2
Air traffic control proced	lures, basics of communication and phraseology, aircraft identification, spacing and traffic coordination. In addition, the cours	e discusses air tra	affic control at
the airports and low visi	bility operational procedures. Students will during the course learn basic safety management applications applied across the	infrastructure.	
12Y1PD	Assessment of Transport Structures	KZ	2
Assessment of transport	structures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibilitie	es of its protection	and assessment
transport structures on t	the landscape. Rating fragmentation and landscape connectivity in the preparation of linear structures. Practical examples of	assessment of tra	affic buildings on
the environment.			
20Y1PK	Product Quality Management Processes	KZ	2
General principles of or	ganization management. Management systems and international standards; quality management systems. Quality products,	processes, syster	ms. A framework
of standards for systems	management, management principles. Principles of process management, monitoring and measurement systems manageme	nt. Uniform framew	vork of standards
for systems manageme	nt. Process management principles. Metrology and testing. Product certification.		
14Y1PJ	C Programming Language	KZ	2
C programming languag	e. Preprocessor, basics of the C language (data types, syntax, commands), functions, pointes, dynamical memory allocation,	string, files, struct	ures and unions.
Implementations of abst	tract data types (FIFO, LIFO, list), programming techniques (sorting, searching, recursion), using bitwise oprerators.		
12Y1C1	Designing Roads in Civil 3D I	KZ	2
The course is devoted to	o the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go throu	igh the complete o	design of this
	, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The	ne course also inc	ludes a basic
explanation of the traffic	building design in the real-life profession.		
12Y1C2	Designing Roads in Civil 3D II	KZ	2
The course is devoted to	o the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go throu	igh the complete o	design of this
	, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The	ne previously acqu	uired skills are
	d. Students learn to design intersections.		
14Y1PA	3D Modeling in AutoCAD	KZ	2
· · · · · · · · · · · · · · · · · · ·	tric modeller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup creation, objects	ct data creation, v	vork with data
	database. Basic definition of work with lights, materials and reflexes. Models presentation.		
16Y1PV	Operation, Construction and Maintenance of Vehicles	KZ	2
	luction. Vehicle maintenance. Vehicle diagnostics. Maintenence and repair plans. Engine maintenance and emission measure	ement. Transmissi	on mechanism.
General principles of en		1	
12Y1PU	Organization Disposition of Railway Stations	KZ	2
	senger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zo		nation yards.
	ology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic railway r		
12Y1RU	Railway Lines Reconstruction	KZ	2
	erational, maintaining lines and stations, geometrical alignment of railway line, vehicles for railway superstructure and substru	ucture maintenanc	ce, scheduling
	ons, preparation of railway lines reconstruction and maintenance, process of ralway line reconstruction.	1	
16Y1RE	Control and Electronic Vehicle Systems	KZ	2
	regulation. Tools for analytical solution, linear system description. Basic types of a regulator (PID), properties, advantages, disa	=	
	. Electric drive. Vehicle communication bus (CAN, LIN, FlexRay, ISObus, KWP2000 protocole etc.). Vehicle electronic control	, satety, communic	cation and
comfort systems.			

21Y1RZ Human Resources Management	KZ	2
The position of human resources in the organization and related disciplines file. Substance, importance and challenges of	numan resources management. Internal and extern	al
environment of human resource management. Human resource planning. Search, recruitment and selection of employees. I	Motivation, evaluation and remuneration of staff. Pos	itioning,
dismissal and redundancies of employees. Education of employees. Planning career management.		_
17Y1ST Titan Simulation	l l	2
Titan is a management game simulating the business decisions. Lets 2-8 student groups to produce and compete in the m determine the quantity and capacity of production, plan budgets for marketing, research and development. They become fa	·	
of financial corporate reports and they use this information for other business decisions.	milial with the consequences of their decisions by t	ile ioiiii
21Y1SI ATC Simulator	KZ	2
Familiarization with the simulation environment, acquiring basic habits, aircraft identification procedures, vectoring, level ch	l l	
exercises focusing on basic vectoring, early application of vertical separation, EST and REV message passing. Practical ex	=	
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 cons		agnetic,
state (temperature, humidity), chemical and particle flow values. Electrical, pneumatic and hydraulic actuators and solid ph	· · · · · · · · · · · · · · · · · · ·	
17Y1SL Sociology of Human Resources	l l	2
Human resources and their importance, work group as a special kind of social group, communication, personal management	t, modern management, human resources planning	, culture
of the organization.	V7	2
11Y1SI Transportation Software Engineering Basic concepts of software engineering, ranging from domain analysis, requirement analysis and software architectures to an		
and practical usuage.	aryses, design and implementation using formal tec	iiiiques
16Y1KS Quality and Reliability of Vehicles	KZ	2
Quality and reliability theory in design, development, production and operation of vehicles. Definition and possible approach		_
Mode and Effects Analysis), QFD (Quality Function Deployment), DFx (Design for Assamly, Manufacturying, Quality, Service		
Knowledge-based systems of quality and reliability, data collection.		
12Y1SU Road Management and Maintenance	KZ	2
Getting familiar with ownership of roads in the Czech Republic and the administration of the road at the state and county le	vel. It is presented development of road network, sh	nort,
medium and long-term strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specific and summer and summer and summer and summer and summer and summer.	cifics, possibilities and repair methods are discusse	ed in the
classroom as well as investment activity in highway engineering.		
16Y1SO Strategy and innovation in mobility	1	2
Introduction to innovation, definition. Innovation strategy. Innovation life cycle and ecosystem, main sources and funding op	· · · · · · · · · · · · · · · · · · ·	-
co-financing, evaluation. Sprint method and its use. Innovative business model - main patterns and examples, design, strat of use). Creating an innovation strategy. Customer and value map, design and testing.	egy, processes and outlook (business plan and pos	Sibilities
17Y1SK Urban and Regional Rail Transport Systems	KZ	2
Factors affecting transport demand, modal-split, distribution of passenger flows on public regional transport lines. Optimiza		_
evaluation of the timetable. Vehicle circulation creation. Optimizing driver shifts and arranging them in turnus. Effects of barr		
marketing.		
11Y1TG Graph Theory	KZ	2
Basic concepts and terminology of graph theory, graph representation. Problems of graph theory, problem instance. Graph	search algorithms, trees, minimum spanning tree, s	shortest
path problem, Eulerian path, bipartite graph matching, flow networks, circulations, critical path method, traveling salesman problem.	blem. Problem of existence and optimization and alg	gorithms
for their solving. Computational complexity, dealing with NP-complete problems, heuristic approach.		
23Y1TP Criminal Law in IT and Transportation		2
Introduction of criminal law into legal order, conception of culpability and criminal delict, consequency of other legal standa		on of
crime, specific indicia of criminal court cases, practical examples.	ds. international treaty and criminal law, investigation	
crime, specific indicia of criminal court cases, practical examples. 14Y1TI Creating Interactive Internet Applications	ds. international treaty and criminal law, investigation	2
crime, specific indicia of criminal court cases, practical examples. 14Y1TI Creating Interactive Internet Applications Possibilities of scripting language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and de-	ds. international treaty and criminal law, investigation	2
crime, specific indicia of criminal court cases, practical examples. 14Y1TI Creating Interactive Internet Applications Possibilities of scripting language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and de in PHP language.	rds. international treaty and criminal law, investigation KZ monstration of solutions. Your own application progr	2 rammed
crime, specific indicia of criminal court cases, practical examples. 14Y1TI Creating Interactive Internet Applications Possibilities of scripting language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and do in PHP language. 21Y1UL Aircraft Maintenance	rds. international treaty and criminal law, investigation KZ	2 rammed
crime, specific indicia of criminal court cases, practical examples. 14Y1TI Creating Interactive Internet Applications Possibilities of scripting language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and de in PHP language.	MS. international treaty and criminal law, investigation KZ	2 rammed 2 rsonnel.
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14Y1WG Webdesign Students will learn the basics of HTTP communication, URL and addressing, HTML5 markup language, advanced CSS3 techniques, accessible and usable web rules, responsive webdesign, content management systems, web server installation + configuration directives. The subject matter will be trained on examples. 14Y1W1 Webdesign 1 ΚZ 2 Students will learn the basics of communication HTTP, URL and addressing, markup languages HTML and XHTML, HTML tags, rules of web accessibility and usability, CSS properties and selectors, the issue of web browsers, creating one to three column layout pages, sites validation, conditional comments. Topics will be practiced on practical examples. Students will learn advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, web server installation + configuration directives. Topics will be practiced on practical examples. Introduction into Applied Computer Graphics ΚZ Computer graphics, division and applications with emphasis on transport, including development and research. Colours, colour perception, colour schemes, models, principles of 2D and 3D generation, elementary algorithms for graphic data workout. Visualisation principles and tasks, technics, graphics and visualisation HW basics. Introduction to 2D and 3D graphics software. 14Y1ZM Fundamentals of parametric and adaptive modeling Basics of work at products and parts creation. Sketch drawing by help of geometric relations, parametric dimensions, creation of adaptive models from 2D sketches. Import and export from and to another systems. Fundamentals of assemblies creation. 11Y17M Foundation of MATLAB Programming ΚZ 2 To explain the principle of algorithmization, flow charts, description of MATLAB environment and its settings, MATLAB help, mathematical operators, matrices and elements operations, control flow, inputs and outputs, graphics, optimization and program code debugging Fundamentals of programming in JAVA Introduction to the Java SE Platform. IDE Installation and First Project. Comments. Variables and Type System. Operators. User Input and Parsing. Chain and Chain Conversion. Text Chain and Mathematical Methods. Terms. Relational Operators and Switches. Cycles for, while, foreach. Field - declaration, initialization, methods for field work. ASCII. Functions, parameters, return value, recursion. Program creation. Principles of Urbanism Survey on history of city and settlement building. Functional components and their mutual relations (working, living, recreation, transportation). Spacial arrangement of settlements. Types of towns or cities with a certain prevailing function, forms of their development. Brief overview of land-use planning. 15Y1ZV East-West dichotomy: Prelude to the Cold War ΚZ 2 Historical prologue, evolution of the "West" and "East" from the 1500s. Focus on the history in the period between 1850 nad 1950. Milestones and continuity of the international relations in the end of 19th century and the beginning of the 20th century. Revolutions, the causes and consequences. Scientific and technological progress, the causes and consequences. Economic and financial history. Social changes. Discussions on texts, sources. Vehicle Testing, Legislation and Construction ΚZ Vehicle, bus and motorbike costruction, aggregate computing, driving resistance, build and parameters of traction, constructional arrangement of personal cars, trucks, buses, motorbikes, legislation in the EU and in the world, technical legislation creation, testing methods, vehicle tests, accelerated tests, mathematical modelling in testing

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

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

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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
14DPK	Digital Support for Designing of Roads and Highways Libor Žídek, Drahomír Schmidt Drahomír Schmidt (Gar.)	Z	0	0P+2C	Z	٧
14DZT	Digital Support for Railway Lines Martin Brumovský Martin Brumovský (Gar.)	Z	0	0P+2C	L	V
11SCFZ	Seminar of Physics Oldřich Hykš, Jana Kuklová, Zuzana Malá, Tomáš Vítů Zuzana Malá Zuzana Malá (Gar.)	Z	0	0P+2C	Z	٧
21SLD	Seminar of Air Transport Jakub Kraus, Natalia Guskova, Vladimír Plos Vladimír Plos	Z	0	0P+2C	L	٧
18SPP	Seminary from Elasticity and Strength Tomáš Doktor, Jan Vyčichl Jan Vyčichl (Gar.)	Z	0	0P+2C	Z	V
18STD	Seminary from Technical Documentation	Z	0	0P+2C	Z	V
18SS	Seminary from Structural Analysis Jan Vyčichi	Z	0	0P+2C	L	٧
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

		1
14DPK Digital Support for Designing of Roads and	• •	0
Seminars possibilities of technical processing problems focused on designing of	of roads and highways.	
14DZT Digital Support for Railway Lines	Z	0
Seminars possibilities of technical processing problems solved in the field of rai	lway lines.	
11SCFZ Seminar of Physics	Z	0
Solving problems on kinematics, particle dynamics, dynamics of particle system	ns and rigid body. Continuum mechanics, thermodynamics.	
21SLD Seminar of Air Transport	Z	0
	 Propulsion of aircraft. Aircraft design. Basics of navigation, radio navigation. Weight, Limitations of operation, maintenance, service life of aircraft. Traffic management, groups 	
18SPP Seminary from Elasticity and Strength	Z	0
, , , , , , , , , , , , , , , , , , , ,	ss during bending of beam. Design and analysis of cross section of beam. Analysis of	deflection curve
of beam. Torsion of circle cross section. Combined loading. Stability of compres	sed bar and buckling.	
18STD Seminary from Technical Documentation	Z	0
Technical standards, international standardization, technical drawings, representational standards, international standar	ntation of technical objects, technical diagrams and charts, dimensional and geometric	cal accuracy,
arrangement of drawing sheets.		
18SS Seminary from Structural Analysis	Z	0
Examples for practise. General system of forces. Reactions of mass objects and	d compound systems. Internal forces on statically determinate beam and simple frame	work. Application
of principle of virtual works for calculation of reactions of staticaly determinate s	systems. Determination of axial forces in truss construction - method of joints and met	hod of sections.
Geometry of cross sections. Plane fiber polygons.		
11SSF Secondary School Physics Course	Z	0
l i i i i i i i i i i i i i i i i i i i	-ld	•
Basics of kinematics, dynamics, thermodynamics, electric field and magnetic field	eia.	
Basics of kinematics, dynamics, thermodynamics, electric field and magnetic field TVKLV Physical Education Course	eid. Z	0

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	B Z	J
15JZ3I	Foreign Language - Italian 3 Irena Veselková	Z	3	0P+4C+10E	Z	J
15JZ3N	Foreign Language - German 3 Markéta Vojanová, Eva Rezlerová, Martina Navrátilová, Jana Štikarová	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 Zuzana Krinková	Z	3	0P+4C+10E	Z	J
15JZ4F	Foreign Language - French 4 Irena Veselková	Z,ZK	3	0P+4C+10E	L L	J
15JZ4I	Foreign Language - Italian 4	Z,ZK	3	0P+4C+10E	B L	J
15JZ4N	Foreign Language - German 4 Eva Rezlerová, Martina Navrátilová, Jana Štikarová	Z,ZK	3	0P+4C+10E	B 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 language structure knowledge				
and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its				
features. Practice of oral and written presentation.				
15JZ3I	Foreign Language - Italian 3	Z	3	

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

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 cor	nmunicative 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	al and written presentation.	-	·
15JZ3R	Foreign Language - Russian 3	Z	3
Grammar and stylistics	Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of	of language struct	ure knowledge
and perceptive and cor	nmunicative 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	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	of language struct	ure knowledge
and perceptive and cor	nmunicative 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	al and written presentation.		
15JZ4F	Foreign Language - French 4	Z,ZK	3
Grammar and stylistics	Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement	of language struct	ure knowledge
and perceptive and cor	nmunicative 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	all and written presentation.	-	
15JZ4I	Foreign Language - Italian 4	Z,ZK	3
Grammar and stylistics	Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of	of language struct	ure knowledge
and perceptive and cor	nmunicative 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	al and written presentation.		
15JZ4N	Foreign Language - German 4	Z,ZK	3
Grammar and stylistics	Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of	of language struct	ure knowledge
and perceptive and cor	nmunicative 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	al and written presentation.		
15JZ4R	Foreign Language - Russian 4	Z,ZK	3
Grammar and stylistics	Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of	of language struct	ure knowledge
and perceptive and cor	nmunicative 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	al and written presentation.		
15JZ4S	Foreign Language - Spanish 4	Z,ZK	3
Grammar and stylistics	Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of	of language struct	ure knowledge
and perceptive and cor	nmunicative 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	al 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	Calculus 1	Z,ZK	7
Sequence of real n	umbers and its limit. Basic properties of mappings. Function of one real variable, its limit and derivative. Indefinite integral, Newton integral		al, improper
	Riemann integral. First-order differential equations, linear differential equations.		
11CAL2	Calculus 2	Z,ZK	5
Linea	r differential equations and their systems, differential calculus of functions of several real variables. Riemann integral in Rn. Line and	surface integrals.	•
11FYZ	Physics	Z,ZK	5
	Kinematics, dynamics, Newton's laws, force fields, mechanics of continuum, thermodynamics, introduction to electrostatics and electrostatics and electrostatics.	ctric current.	
11GIE	Geometry	KZ	3
Differential geome	try of curves - parameterization, the arc of the curve, torsion and curvature, Frenet's trihedron. Kinematics - a curve as a trajectory	of the motion, the v	elocity, and
	acceleration of a particle moving on a curved path.		
11LA	Linear Algebra	Z,ZK	3
Vector spaces (line	rar combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and the	eir solvability. Deter	minants and
	their applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classifica	tion.	
11LP	Linear Programming	KZ	3
Formulation of the	problem of linear programming, transcription of some practical problems to the linear programming problems. Simplex and convex p	olyedra. Simplex m	ethod, basic
	solutions, duality principle in linear programming, stability of solution of linear programming problem. Traffic problem.		
11MDP	Transport Prognostic Methods	KZ	2
The techniques of	economical analysis in the domain of analysis of dependencies, analysis and construction of time series and comparsion of statistic	al values using diffe	rencies and
	indices.		
11MSP	Modeling of Systems and Processes	Z,ZK	4
System and subsys	stem, external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of differ	ential and differentia	al equations.
Linear and non	llinear system, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer functi	on. Stability of LTI s	systems.
	Discretization of continuous systems. System interconnection.		
11SCFZ	Seminar of Physics	Z	0
	Solving problems on kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermoc	lynamics.	'
11SSF	Secondary School Physics Course	Z	0
	Basics of kinematics, dynamics, thermodynamics, electric field and magnetic field.	1	'

11STAT	Statistics	Z,ZK	4
Basics of probabi	lity Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Paramet Regression and correlation analysis	ric tests Nonparan	netric tests
11TGA	Graph Theory and its Applications in Transport	Z,ZK	4
	f graph theory, paths in graphs, flows in networks, location problems, design problems on graphs, optimum routing, use of graphs in o		iplines.
11X31	Project 1	Z	2
11X32	Project 2	Z	2
11X33	Project 3	Z	2
11Y1BK	Error Detection Codes for Interlocking Systems	KZ	2
Safe communication	n and methods for its assuring. Safety codes linear codes, cyclic codes, BCH codes, Reed-Solomon codes. Transmission channels, de probability of undetected error. Design and assessment of detection codes; requirements of the European standard EN 5015		ssion errors,
11Y1PV	Parametrical and Multicriterial Programming	KZ	2
· · · · · · · · · · · · · · · · · · ·	olem of linear programming with a parameter in objective function, on right sides and in the matrix of coeficients of linear constraints. Co	•	
11Y1SI	Transportation Software Engineering of two provides of tware engineering software engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and implement	KZ	2
Basic concepts of s	and practical usuage.	tation using lorina	rtechniques
11Y1TG	Graph Theory	KZ	2
_	d terminology of graph theory, graph representation. Problems of graph theory, problem instance. Graph search algorithms, trees, mir		l l
path problem, Eule	rian path, bipartite graph matching, flow networks, circulations, critical path method, traveling salesman problem. Problem of existence a	nd optimization an	d algorithms
	for their solving. Computational complexity, dealing with NP-complete problems, heuristic approach.		
11Y1ZM	Foundation of MATLAB Programming	KZ	2
to explain the princ	ciple of algorithmization, flow charts, description of MATLAB environment and its settings, MATLAB help, mathematical operators, matr control flow, inputs and outputs, graphics, optimization and program code debugging.	ices and elements	operations,
12MDE	Transport Models and Transport Excesses	Z,ZK	3
	traffic flow and methods for their measurement. Models of the traffic flow, communications load, line and urban systems. Theory of qu	,	_
transport and its	assessment. Statistical characteristics of transport. Transport excesses, their analysis, the causes, identify and minimize the consequences.	ences. Improving o	of transport
12PPOK	Designing Roads, Highways and Motorways	KZ	3
Definition, types,	ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard	speed. Route in r	ural areas.
Range of vision for	stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet	y device. Crossing	s, junctions,
40)/04	intersections.		
12X31	Project 1	<u>Z</u>	2
12X32	Project 2	Z	2
12X33	Project 3	Z	2
12Y1AE	Applied Ecology	KZ	2
	ecological concepts and principles, ecosystem, ecological factors, energy flow through the ecosystem. Application of knowledge withi ape ecology - origin and historical development. Landscape definition and classification. Success. Traffic constructions in the countrys		
	protection. Applied ecology.		
12Y1C1	Designing Roads in Civil 3D I	KZ	2
	voted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through	•	-
particular linear b	uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The	course also includ	es a basic
10)/100	explanation of the traffic building design in the real-life profession.	V7	0
12Y1C2	Designing Roads in Civil 3D II voted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through	KZ	2 sign of this
	uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The	•	-
	improved and developed. Students learn to design intersections.		
12Y1DS	Project Documentation in Practice	KZ	2
Project document	ation creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process.	Budget and pricing	g. Practical
40)(4115	creation of some project documentation parts.	1/7	
12Y1HD	Traffic Noise	KZ	2
	on, basic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regulations of urban acoustic, noise transmission, soundproofing. Types of noise sources in area. Determination of acoustic situation in the area		
α.σα, ρσ.ρ.σσ	computing and measurement of transport noise. Acoustic studies, measuring protocol.		20.09) 0.
12Y1KN	Combined Transportation	KZ	2
Combined transp	ort strategy and legislation. Load units. Means of transport in combined transport. Combined transport systems. Transshipping areas.	Multimodal logisti	c centres.
12Y1KP	Communication and Promotion of Transport Projects	KZ	2
	Public Relations and the power of public opinion. Work and tasks of PR department and press spokesperson. Communication with the		
networks and bey	ond. Communication strategy of transport projects. Systematic goodwill building. Crisis situations in communication and preparation f influence of political marketing and political PR on transport projects. Lobbing.	or crisis communic	cation. The
12Y1PC	Pedestrian and Cycling Transport	KZ	2
	ans. Pedestrian crossings. Modifications for blind, dim-sighted and disabled people. Design of cycle routes network. Ways of cycle route		
· ·	ration of cyclists from other transport modes. Cycle tracks and its design - one way streets, reserved traffic lanes, bus stops, crossings	-	-
	crossroads. Traffic signs and road marking for cyclists.		
12Y1PD	Assessment of Transport Structures	KZ	2
	sport structures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibilities of	· ·	
nansport structure	s on the landscape. Rating fragmentation and landscape connectivity in the preparation of linear structures. Practical examples of ass the environment.	essinent of traffic	bullulrigs of
12Y1PU	Organization Disposition of Railway Stations	KZ	2
	on. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zon		

12Y1RU			
	Railway Lines Reconstruction	KZ	2
Keeping railway lir	ne operational, maintaining lines and stations, geometrical alignment of railway line, vehicles for railway superstructure and substruct	ure maintenance, s	scheduling
	and organising possesions, preparation of railway lines reconstruction and maintenance, process of ralway line reconstruction	on.	-
12Y1SU	Road Management and Maintenance	KZ	2
	ith ownership of roads in the Czech Republic and the administration of the road at the state and county level. It is presented develop		
J	, , , , , , , , , , , , , , , , , , , ,		
medium and long-te	erm strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and repair	methods are discu	issea in the
10)(1)(D	classroom as well as investment activity in highway engineering.	177	
12Y1VR	Public Transport in Cities and Regions	KZ	2
Professional and	political pillars of public transport. Accessibility of public transport. Transport demand management and directional coordination of lin	es. Principles of lin	e tracing.
Basic operating pa	arameters and transport variations. Types of lines according to their routing and basic operating parameters. Time coordination of line	es. Operational traff	fic control.
	Organization of tram operation in Prague. Tram safety.		
12Y1ZU	Principles of Urbanism	KZ	2
	of city and settlement building. Functional components and their mutual relations (working, living, recreation, transportation). Spacial	l I	
curry crimotory	Types of towns or cities with a certain prevailing function, forms of their development. Brief overview of land-use planning.	anangomon or oc	
40740		-	
12ZAR	Introduction to Architectural Design	Z	3
Urbanism and	l architecture of traffic systems. Bus and trolley-bus transport. Tramway and town tracks. Design of vehicles. Subway. Railway transpor	rt. Railway stations	. Local
	communications. International airports.		
12ZPV	Railway Operation	Z,ZK	4
Legislation in raily	v vay transport. Railway vehicles. Railway signals and signal devices. Railway traffic organisation and operation. Simplified railway traffi		v vehicles
3	brakes. Railway vehicles marking. Operation intervals. Theoretical graph of train running.		,
107TC		7 71/	4
12ZTS	Railway Lines and Stations	Z,ZK	.4
Hall transport. Ra	ailway track geometry parameters. Route layout of railway lines. Railway line construction - railway substructure and superstructure. S		way lines.
	Railway control systems in relation to infrastructure. Operating and carriage points. Railway lines net and category. Traction in rail to	ransport.	
12ZYDI	Introduction to Transportation Engineering	Z,ZK	2
	on in land-use planning. Basic terms in transportation engineering. Traffic survey and traffic prognosis. Introduction to topic of roads, p		
-1	impacts of transportation to environment and safety.		J
14ASD		KZ	3
	Algorithm and Data Structures	l	-
=	ze problems, design a theoretical solution to a given problem and write the resulting algorithm using flowcharts, practice reading algor	_	
and use basic Bool	lean algebra to construct constraints in algorithms. Students will be introduced to the basics of the Python programming language - v	_	loops, they
	will learn to work with variables of basic data types (integer, floating point and string) and the list data structure in their progra	ms.	
14DATS	Database Systems	KZ	2
Basic concepts of	of database systems, conceptual model, relational data model, the principles of normal forms, relational database design, security an	d integrity of data,	database
	queries, relational algebra, SQL language, client / server, multilayer architectures, distributed database systems. Access to data via		
14DMG	Datamining	KZ	2
	,	l	
	rces and knowledge, data warehouses and OLAP technology for data mining, data preprocessing in the process of knowledge acquis	=	- 1
mining characteris	tics of concepts (classes), mining association rules from relational db. and data warehousing, classification (decisions tree, Bayesian	cob., using neural	networks).
	Prediction. Cluster analysis. Mining in complex structured data, multimedia dbf., www.		
14DPK	Digital Support for Designing of Roads and Highways	Z	0
14DPK	Digital Support for Designing of Roads and Highways Seminars possibilities of technical processing problems focused on designing of roads and highways.	Z	0
	Seminars possibilities of technical processing problems focused on designing of roads and highways.	Z	0
14DPK 14DZT	Seminars possibilities of technical processing problems focused on designing of roads and highways. Digital Support for Railway Lines		
14DZT	Seminars possibilities of technical processing problems focused on designing of roads and highways. Digital Support for Railway Lines Seminars possibilities of technical processing problems solved in the field of railway lines.	Z	0
14DZT 14KSP	Seminars possibilities of technical processing problems focused on designing of roads and highways. Digital Support for Railway Lines Seminars possibilities of technical processing problems solved in the field of railway lines. Constructing with Computer Aid	Z	0
14DZT 14KSP "CAD systems" ter	Seminars possibilities of technical processing problems focused on designing of roads and highways. Digital Support for Railway Lines Seminars possibilities of technical processing problems solved in the field of railway lines. Constructing with Computer Aid m determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic common wor	Z KZ k rules in graphic a	0 2 applications
14DZT 14KSP "CAD systems" ter	Seminars possibilities of technical processing problems focused on designing of roads and highways. Digital Support for Railway Lines Seminars possibilities of technical processing problems solved in the field of railway lines. Constructing with Computer Aid m 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	Z KZ k rules in graphic a	0 2 applications
14DZT 14KSP "CAD systems" ter	Seminars possibilities of technical processing problems focused on designing of roads and highways. Digital Support for Railway Lines Seminars possibilities of technical processing problems solved in the field of railway lines. Constructing with Computer Aid m determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic common wor	Z KZ k rules in graphic a	0 2 applications vironment
14DZT 14KSP "CAD systems" ter	Seminars possibilities of technical processing problems focused on designing of roads and highways. Digital Support for Railway Lines Seminars possibilities of technical processing problems solved in the field of railway lines. Constructing with Computer Aid m 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	Z KZ k rules in graphic a	0 2 applications
14DZT 14KSP "CAD systems" ter and CA systems. 14MPG	Seminars possibilities of technical processing problems focused on designing of roads and highways. Digital Support for Railway Lines Seminars possibilities of technical processing problems solved in the field of railway lines. Constructing with Computer Aid m 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).	Z KZ k rules in graphic a silites, AutoCAD en	0 2 applications vironment
14DZT 14KSP "CAD systems" ter and CA systems. 14MPG Students will be rer	Seminars possibilities of technical processing problems focused on designing of roads and highways. Digital Support for Railway Lines Seminars possibilities of technical processing problems solved in the field of railway lines. Constructing with Computer Aid m 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). Modern Programming Approaches minded of some aspects of Pythom programming, learn basic concepts and constructs from object-oriented programming and their in	Z KZ k rules in graphic a silites, AutoCAD en KZ nplementation in P	0 2 applications vironment 2 ython. They
14DZT 14KSP "CAD systems" ter and CA systems. 14MPG Students will be rer will also tr	Seminars possibilities of technical processing problems focused on designing of roads and highways. Digital Support for Railway Lines Seminars possibilities of technical processing problems solved in the field of railway lines. Constructing with Computer Aid m 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). Modern Programming Approaches minded of some aspects of Pythom programming, learn basic concepts and constructs from object-oriented programming and their in ry out the basics of working with data libraries in Python, namely NumPy, Pandas, Matplotlib, and practice with examples of smaller a	Z KZ k rules in graphic a illites, AutoCAD en KZ nplementation in P	0 2 applications vironment 2 ython. They s.
14DZT 14KSP "CAD systems" ter and CA systems. 14MPG Students will be rer will also tr	Seminars possibilities of technical processing problems focused on designing of roads and highways. Digital Support for Railway Lines Seminars possibilities of technical processing problems solved in the field of railway lines. Constructing with Computer Aid m 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). Modern Programming Approaches minded of some aspects of Pythom programming, learn basic concepts and constructs from object-oriented programming and their in ry out the basics of working with data libraries in Python, namely NumPy, Pandas, Matplotlib, and practice with examples of smaller a Programming	Z KZ k rules in graphic a illites, AutoCAD en KZ nplementation in P und larger data size KZ	0 2 applications vironment 2 ython. They s.
14DZT 14KSP "CAD systems" ter and CA systems. 14MPG Students will be rer will also tr 14PRG The Course Programmer.	Seminars possibilities of technical processing problems focused on designing of roads and highways. Digital Support for Railway Lines Seminars possibilities of technical processing problems solved in the field of railway lines. Constructing with Computer Aid m 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). Modern Programming Approaches minded of some aspects of Pythom programming, learn basic concepts and constructs from object-oriented programming and their in ry out the basics of working with data libraries in Python, namely NumPy, Pandas, Matplotlib, and practice with examples of smaller a Programming ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python program	KZ k rules in graphic a illites, AutoCAD en KZ nplementation in P und larger data size KZ nming language is	0 2 applications vironment 2 ython. They s. 2 expanded
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14Y1MP Assemblies pro	Modeling Complex Assemblies and Models in Parametric Modeller gramming - tools and methodology of working subassemblies and assemblies, sheet metal parts modelling, welded assemblies, pipel	KZ lines, and distribu	ution lines
7 todombilos pro	Photorealistic output rendering - physical and material properties, lighting sources. MKP - visual example.	moo, and diomoc	341011 111100.
14Y1OJ	Object - oriented programming in JAVA	KZ	2
	Encapsulation. Classes. Attributes. Access modifiers. Methods and overloading. Special methods (constructors, getters / setters). Ba	-	
14Y10P	ance. Polymorphism. Statics, constants, interfaces, abstract classes, enum, packages, exceptions, collections, generics, lambda expre Operating System	KZ	2
_	Operating System stallation GNU/Linux OS. X-window system. Rights management - users and groups, ACL rights. Filesystems and attributes. Programs		
	console programs / commands. Config files. SW management, package systems. Programs in graphic shell - text, spreadsheet, graph		
	communication. Services management. Safe and secure configuration of OS. Remote administration.		
14Y1P2	Computer Aid of Transportation Projecting 2	KZ	2
	ipplication for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, databutes, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transition section). Basics of 3D modelling.		
14Y1PA	3D Modeling in AutoCAD	KZ	2
	parametric modeller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup creation, object connected with external database. Basic definition of work with lights, materials and reflexes. Models presentation.		_
14Y1PG	Computer Graphics	KZ	2
Basic formats of	graphic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with editing level scope) using layers, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics		nin the user
14Y1PI	Corporate Information System	KZ	2
	on-knowledge, components of information system, syntatic and semantic sense of data, structure of corporate information system, par		1
	duction, storage, etc.), corporate information politic and information control, risks of information system operation, legal environment of state information system, information system security, data protection, safety politics.	information syste	em operation,
14Y1PJ	C Programming Language	KZ	2
C programming lar	nguage. Preprocessor, basics of the C language (data types, syntax, commands), functions, pointes, dynamical memory allocation, strin	-	s and unions.
14Y1PZ	Implementations of abstract data types (FIFO, LIFO, list), programming techniques (sorting, searching, recursion), using bitwise op Advanced Data Processing in Spreadsheets	KZ	2
	e familiar with principles of working in a spreadsheet. Graphic layout of the table appearance, formatting of numbers, insertion of formu		
	detection. Working with large spreadsheets, filters, advanced filters, database functions. Pivot tables and charts, conditional formatting, s		- 1
	data analysis. Examples and questions from various companies and training.		
14Y1TI	Creating Interactive Internet Applications	KZ	2
Possibilities of scri	pting language PHP Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions. You in PHP language.	own application	programmed
14Y1UP	Editing of Theses in MS Word	KZ	2
	introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, creat	· ·	1 1
figures, tables, gra	phs, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless ed	iting dissertation	s and theses,
	so that they are able to concentrate mainly on writing a thesis.		
14Y1VM Object oriented	Development of Applications for Mobile Devices programming, Java programming language, development environment, operating system Android, development application - widgets, permissions, services, GUI.	KZ containers, three	2 ads, menu,
14Y1W1	Webdesign 1	KZ	2
Students will learn	the basics of communication HTTP, URL and addressing, markup languages HTML and XHTML, HTML tags, rules of web accessibility	and usability, C	SS properties
	s, the issue of web browsers, creating one to three column layout pages, sites validation, conditional comments. Topics will be practice		
14Y1W2	Webdesign 2	KZ	2
Students will learn	advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, web ser directives. Topics will be practiced on practical examples.	ver installation +	Corniguration
14Y1WG	Webdesign	KZ	2
	rn the basics of HTTP communication, URL and addressing, HTML5 markup language, advanced CSS3 techniques, accessible and u webdesign, content management systems, web server installation + configuration directives. The subject matter will be trained on e	ısable web rules,	
14Y1ZJ	Fundamentals of programming in JAVA	KZ	2
	e Java SE Platform. IDE Installation and First Project. Comments. Variables and Type System. Operators. User Input and Parsing. Chair		
Chain and Math	ematical Methods. Terms. Relational Operators and Switches. Cycles for, while, foreach. Field - declaration, initialization, methods for f parameters, return value, recursion. Program creation.	ield work. ASCII.	. Functions,
14Y1ZM	Fundamentals of parametric and adaptive modeling	KZ	2
	products and parts creation. Sketch drawing by help of geometric relations, parametric dimensions, creation of adaptive models from 2		
	from and to another systems. Fundamentals of assemblies creation.	· 	
15DPLG	Transportation Psychology	Z	2
	ogy and its basic concepts. Information intake, decision-making and behaviour. Performance. Engineering psychology and vehicle const	=	
15JZ1A	el route and traffic conditions, accidents and traffic incidents. Selection and training of the staff. Work and leisure. Age as a factor in tra Foreign Language - English 1	7	3
	tures and Style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and costylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles of		
15JZ2A	Foreign Language - English 2	Z,ZK	3
	tures and style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and corstylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles of	mmunicative skill	-
15JZ3F	Foreign Language - French 3	Z	3
Grammar and sty	listics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la	anguage structur	e knowledge
and perceptive ar	nd communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v	vith (professiona	l) text and its
	features. Practice of oral and written presentation.		

	Foreign Language - Italian 3	Z	3
15JZ3I Grammar and stylis	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of I	_	_
and perceptive and	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work features. Practice of oral and written presentation.	with (professional)	text and its
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 I	_	1
-	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work		_
15JZ3R	features. Practice of oral and written presentation. 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 I	_	_
-	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work features. Practice of oral and written presentation.		_
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 I	ا — anguage structure	1
and perceptive and	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work	with (professional)	text and it
15 1745	features. Practice of oral and written presentation.	7 71/	
15JZ4F	Foreign Language - French 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of I	Z,ZK	3
-	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work features. Practice of oral and written presentation.		-
15JZ4I	Foreign Language - Italian 4	Z.ZK	3
	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of I	,	_
	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work features. Practice of oral and written presentation.		_
15JZ4N	Foreign Language - German 4	Z,ZK	3
	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of I	,	1
=	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work		_
	features. Practice of oral and written presentation.	. ,	
15JZ4R	Foreign Language - Russian 4	Z,ZK	3
rammar and stylis	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of I	anguage structure	knowledg
nd perceptive and	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work features. Practice of oral and written presentation.	with (professional)	text and i
15JZ4S	Foreign Language - Spanish 4	Z,ZK	3
-	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of I d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work features. Practice of oral and written presentation.		_
15X31	Project 1	Z	2
13/31	1 10/601 1		
15Y32	· · · · · · · · · · · · · · · · · · ·		
15X32	Project 2	Z	2
15X33	Project 2 Project 3	Z Z	2
15X33 15Y1BO	Project 2 Project 3 Work Safety and Health Protection in Transportation lative, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation.	Z Z KZ	2 2 2
15X33 15Y1BO undamental legisl	Project 2 Project 3 Work Safety and Health Protection in Transportation lative, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation. Health insurance of home and foreign business trips, statistics, working practice.	Z Z KZ ealth protection pr	2 2 2 rogramme
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15Y1ZV			
131120	East-West dichotomy: Prelude to the Cold War	KZ	2
	evolution of the "West" and "East" from the 1500s. Focus on the history in the period between 1850 nad 1950. Milestones and continu	•	
in the end of 19th	century and the beginning of the 20th century. Revolutions, the causes and consequences. Scientific and technological progress, the Economic and financial history. Social changes. Discussions on texts, sources.	e causes and cons	sequences.
16DPO	Vehicle Technology	KZ	2
	principles. Drive, vehicle construction. Road transport, safety, heavy duty vehicle desing, dynamics. Rail transport, safety, carriage of Transshipment. Technological components of various modes of transport. Management and control of various means of transport.	ı lesign. Drive. Elec	1
16UDOP	Introduction into Vehicles	Z	2
Vehicles and trans	portation systems. Functionality and setup. Movement and drive principles. Engines and their characteristics. Rail, road, air and wate of transport. Lifting equipment and conveyors. Legislation.	r transport. Altern	ative means
16X31	Project 1	Z	2
16X32	Project 2	Z	2
16X33	Project 3	Z	2
16Y1EN	Energy Requirements of Vehicles	KZ	2
Dynamics and the	driving inertial of the vehicles. Types of energy - kinetic, static, heat, chemical and others. Ways of energy change into kinetic energy drive, steam engine, air engine. Energy accumulation means, accumulator, flywheel, fuel cell. Energy recuperation. WTW anal	_	jine, electric
16Y1IS	Interactive simulators and simulations	KZ	2
	y and application of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical medical forms of contribution and their mathematical forms of contribution and their mathematical medical forms of contribution and their mathematical medical forms of contribution and their medical forms of contribution and their mathematical forms of contribution and their mathematical medical forms of contribution and their		methods.
1	ation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and intera		
16Y1KS	Quality and Reliability of Vehicles ility theory in design, development, production and operation of vehicles. Definition and possible approach to quality and reliability. K	KZ	2 FA (Failure
·=	Analysis), QFD (Quality Function Deployment), DFx (Design for Assamly, Manufacturying, Quality, Services) and other methods u Knowledge-based systems of quality and reliability, data collection.		
16Y1PV	Operation, Construction and Maintenance of Vehicles	KZ	2
Methods of vehicle	production. Vehicle maintenance. Vehicle diagnostics. Maintenence and repair plans. Engine maintenance and emission measurement	ent. Transmission	mechanism.
	General principles of engine diagnostics.		1
16Y1RE	Control and Electronic Vehicle Systems	KZ	2
	ts of regulation. Tools for analytical solution, linear system description. Basic types of a regulator (PID), properties, advantages, disadva control. Electric drive. Vehicle communication bus (CAN, LIN, FlexRay, ISObus, KWP2000 protocole etc.). Vehicle electronic control,	-	
and Hybrid anvo	comfort systems.	odioty, communic	ation and
16Y1SO	Strategy and innovation in mobility	KZ	2
Introduction to inn	ovation, definition. Innovation strategy. Innovation life cycle and ecosystem, main sources and funding opportunities. Successful inno	vation project, KP	ols, budget;
co-financing, evalua	ation. Sprint method and its use. Innovative business model - main patterns and examples, design, strategy, processes and outlook (l of use). Creating an innovation strategy. Customer and value map, design and testing.	business plan and	d possibilities
16Y1VT	Development in Railroad Vehicles	KZ	2
Railroad vehicles		nsportation. Critica	al situation
Railroad vehicles	Development in Railroad Vehicles traction. Railroad vehicle parametres regulation. Control and driving of railroad vehicles. Importance in heavy duty and personal trar assesment. New materials in design. International standardization. Introduction into Applied Computer Graphics	nsportation. Critica	al situation
Railroad vehicles 16Y1ZG Computer graphics	Development in Railroad Vehicles traction. Railroad vehicle parametres regulation. Control and driving of railroad vehicles. Importance in heavy duty and personal trar assesment. New materials in design. International standardization.	KZ mes, models, prin	2 aciples of 2D
Railroad vehicles 16Y1ZG Computer graphics	Development in Railroad Vehicles traction. Railroad vehicle parametres regulation. Control and driving of railroad vehicles. Importance in heavy duty and personal trar assesment. New materials in design. International standardization. Introduction into Applied Computer Graphics s, division and applications with emphasis on transport, including development and research. Colours, colour perception, colour sche on, elementary algorithms for graphic data workout. Visualisation principles and tasks, technics, graphics and visualisation HW basics.	KZ mes, models, prin	2 aciples of 2D
Railroad vehicles 16Y1ZG Computer graphics and 3D generation 16Y1ZL Vehicle, bus and more	Development in Railroad Vehicles traction. Railroad vehicle parametres regulation. Control and driving of railroad vehicles. Importance in heavy duty and personal trar assessment. New materials in design. International standardization. Introduction into Applied Computer Graphics s, division and applications with emphasis on transport, including development and research. Colours, colour perception, colour sche on, elementary algorithms for graphic data workout. Visualisation principles and tasks, technics, graphics and visualisation HW basic: graphics software. Vehicle Testing, Legislation and Construction torbike costruction, aggregate computing, driving resistance, build and parameters of traction, constructional arrangement of personal construction.	KZ mes, models, prin s. Introduction to 2 KZ cars, trucks, buses	2 nciples of 2D 2D and 3D
Railroad vehicles 16Y1ZG Computer graphics and 3D generation 16Y1ZL Vehicle, bus and molegies	Development in Railroad Vehicles traction. Railroad vehicle parametres regulation. Control and driving of railroad vehicles. Importance in heavy duty and personal trar assessment. New materials in design. International standardization. Introduction into Applied Computer Graphics s, division and applications with emphasis on transport, including development and research. Colours, colour perception, colour sche on, elementary algorithms for graphic data workout. Visualisation principles and tasks, technics, graphics and visualisation HW basics graphics software. Vehicle Testing, Legislation and Construction torbike costruction, aggregate computing, driving resistance, build and parameters of traction, constructional arrangement of personal construction in the EU and in the world, technical legislation creation, testing methods, vehicle tests, accelerated tests, mathematical models.	KZ mes, models, prin s. Introduction to 2 KZ cars, trucks, buses elling in testing.	2 aciples of 2D 2D and 3D 2 c, motorbikes,
Railroad vehicles 16Y1ZG Computer graphics and 3D generatio 16Y1ZL Vehicle, bus and molegis 17EPOD	Development in Railroad Vehicles straction. Railroad vehicle parametres regulation. Control and driving of railroad vehicles. Importance in heavy duty and personal transsessment. New materials in design. International standardization. Introduction into Applied Computer Graphics standardizations with emphasis on transport, including development and research. Colours, colour perception, colour sche on, elementary algorithms for graphic data workout. Visualisation principles and tasks, technics, graphics and visualisation HW basics graphics software. Vehicle Testing, Legislation and Construction otorbike costruction, aggregate computing, driving resistance, build and parameters of traction, constructional arrangement of personal collation in the EU and in the world, technical legislation creation, testing methods, vehicle tests, accelerated tests, mathematical models. Economics of Transport Company	KZ mes, models, prin s. Introduction to 2 KZ cars, trucks, buses elling in testing. Z,ZK	2 notiples of 2D 2D and 3D 2 notorbikes, motorbikes,
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Railroad vehicles 16Y1ZG Computer graphics and 3D generation 16Y1ZL Vehicle, bus and molegis 17EPOD Economy, margina	Development in Railroad Vehicles straction. Railroad vehicle parametres regulation. Control and driving of railroad vehicles. Importance in heavy duty and personal transport. New materials in design. International standardization. Introduction into Applied Computer Graphics standardizations with emphasis on transport, including development and research. Colours, colour perception, colour sche on, elementary algorithms for graphic data workout. Visualisation principles and tasks, technics, graphics and visualisation HW basics graphics software. Vehicle Testing, Legislation and Construction storbike costruction, aggregate computing, driving resistance, build and parameters of traction, constructional arrangement of personal collation in the EU and in the world, technical legislation creation, testing methods, vehicle tests, accelerated tests, mathematical model accommodate in the EU and in the world, technical demand, market equilibrium, perfect company I utility, marginal costs, function of supply and demand, market equilibrium, perfect competition and types of market arrangement. Tracompany, it's environment, balance sheet, costs, revenue, profit and maximalization of profit. Business plan, taxation in transport Systems Economy	KZ mes, models, prin s. Introduction to 2 KZ cars, trucks, buses elling in testing. Z,ZK unsportation markey ort. Z,ZK	2 point and 3D 2D and 3D 2 point and
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17MAGD	Marketing in Transport	KZ	4
•	trategic marketing plans. Implementation of marketing campaigns. Branding and brand promotion. Public relations industry, business		
development, sea	rch engine optimization. Government relations and industry organization lobbying. Advertising and strategic sponsorships. Multimedia	a presentations and	d corporate
	videos. Direct marketing and related lead generation campaigns.		1
17MRR	Managerial Decision-making and Management	Z,ZK	4
Decision-making	process; identifying exactly what the problem is; evaluating the issue; solving the issue; using multiple perspective analysis to make	a decision; usual r	nethod of
	thinking.		_
17NAPR	Freight Traffic	Z	2
	Freight traffic and transportation system, conditions of implementation, forwarding.		_
17TEDL	Transport Technology and Logistics	KZ	3
	sport technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and freight tran		
	odus, technologic factors of the side of operator and client, organisation of city transport, logistic technologies and their aplication us		
17TVD	Technology of Public Transport	Z,ZK	5
The course conte	ents a detailed description of new knowledge and basic principles of hierarchical planning of public transport system accenting the ge		inning and
17//01	quantified transport demand. The course would be oriented on multiple and multi-level optimisation of passenger public transport		
17X31	Project 1	Z	2
17X32	Project 2	Z	2
17X33	Project 3	Z	2
17Y1EV	Public Sector Economy	KZ	2
	ncial theory of public sector, public choice theory, externalites, decisions about public finance allocation, economic assesment of pub		
	R, state budget, management of public projects a their economic efficiency assessment, way of elaboration of PPP projects, funding from		
17Y1LL	Logistics of Passenger and Freight Air Transport	KZ	2
Logistics airline pa	ssenger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial transport.	sport process pass	sengers and
477/4145	air cargo. Information systems in air transport. Global distribution systems.	1.7	
17Y1MD	Marketing in Transportation	KZ KZ	2
General principles	of marketing applied to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transport as	and the resulting di	fferences in
17)(10)	the application of marketing.	1/7	
17Y1OF	Personal Finance	KZ	2
	budget, financing of basic living needs), debt (loans and credits, payment instruments, interest and fees, debt trap), financing of house		-
Consumer loans, re	financing), savings and investments (investment horizon, return, risk, investment strategy), insurance (insurance types, suitability and (retirement savings and insurance).	adequacy), securi	ig the luture
17Y1PM	Personnel Management	KZ	2
	refsormer management ces, work group, man as personality, planning, choice, evaluation and education of human sources, work adaptation, teamwork, inter		1
17Y1SK		KZ	2
_	Urban and Regional Rail Transport Systems transport demand, modal-split, distribution of passenger flows on public regional transport lines. Optimization of line management, li	l	1
_	e timetable. Vehicle circulation creation. Optimizing driver shifts and arranging them in turnus. Effects of barrier-free and public transp	_	-
	marketing.		
17Y1SL	Sociology of Human Resources	KZ	2
Human resources a	and their importance, work group as a special kind of social group, communication, personal management, modern management, hum	ı ıan resources plan	ning, culture
	of the organization.		
17Y1ST	Titan Simulation	KZ	2
Titan is a manaç	pement game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same produ	ct. Students set a	price and
determine the quar	ntity and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequences	s of their decisions	by the form
	of financial corporate reports and they use this information for other business decisions.		
17ZAP	Fundamentals od law	Z	2
18MTY	Materials Science and Engineering	Z,ZK	3
Basic course of ma	terials science and engineering explains mechanical properties of structural materials based on their bonding forces and microstructu	re. However the m	ain attention
is paid to metals as	the most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and con	nposites. Attention	is also paid
	to degradation processes in materials, to defectoscopy and to main mechanical tests.	ı	ı
18PZP	Elasticity and Strength	Z,ZK	3
Tension and compr	ession. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolted a	and welded joints o	of structures.
40047	Analysis of deflection curve of beams. Torsion of circular cross sections. Combined loading. Stability.	7 71/	
18SAT	Structural Analysis	Z,ZK	4
<u>-</u>	of forces in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determinate contribution of social forces in three constructions of statically determinate contributions. Between the plane of social forces in three constructions	· · · · · · · · · · · · · · · · · · ·	_
Principle of virtual v	vork. Kinematic method for calculation of reactions of statically determinate systems. Determination of axial forces in truss constructions. of planar shapes. Fiber polygons and chains.	Cross-sectional cri	aracteristics
18SPP		Z	0
	Seminary from Elasticity and Strength lice. Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of bear	l	_
LXCEISISE IOI PIAC	of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling.	n. Analysis of delic	ction curve
18SS	Seminary from Structural Analysis	Z	0
	ise. General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and	l .	_
	al works for calculation of reactions of staticaly determinate systems. Determination of axial forces in truss construction - method of j	· ·	
	Geometry of cross sections. Plane fiber polygons.		
18STD	Seminary from Technical Documentation	Z	0
	rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional	_	_
	arrangement of drawing sheets.	-	•
18TED	Technical Documentation	KZ	2
	rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional		I
	arrangement of drawing sheets.		
18X31	Project 1	Z	2
•	· · · · · · · · · · · · · · · · · · ·	•	•

	Project 2	Z	2
18X32 18X33	Project 3	Z	2
18Y1AM	Anatomy, Mobility and Safety of Man	KZ	2
	natomical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circulation		1
	of muscular-skeletal system. Injury of human organs and musculo-skeletal system during traffic accidents. Mobility of ill and injured m		
	joint prostheses. Protective means and traffic safety regulations.		
18Y1EM	Experimental Methods in Mechanics	KZ	2
	role of experimental mechanics. Sensors for mechanical testing. Overview of experimental methods. Destructive and non-destructive to	-	_
experimental pro	cedures and sample preparation. Tensile and bending tests. Electrical resistance strain gages. Optical based strain measurement. Fat Instrumented hardness testing. Introduction to electron microscopy. Errors in measurement.	tigue and litetime	prediction.
18Y1MT	Engineering Materials	KZ	2
	Engineering Materials ew of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers and		1
=	ogical materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's		-
18Y1PS	Computer Simulations in Mechanics	KZ	2
Principles and over	rview of tools for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model development	nt and adaptation	of geometry
from other CAE sys	stems. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary conditions and	d application of th	e load. Basic
. = >	tasks of structural and modal analysis. Introduction to complex nonlinear problems.		
18Y1UK	Introduction of Rail Vehicles	KZ	2
	ics and parameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion tra tal running resistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehicle - h		•
track resistance. 10	and electric drive. Design concept rail vehicles and drive of wheel set.	nyuromechanic, n	iyuruuynaniic
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		
	tasks. Soft and hard systems, methods for soft system analysis.		
20UITS	Introduction to Intelligent Transport Systems	Z,ZK	7
	gislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamentals of information in the control of the contro		
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
00.004	principles of ITS.	7	
20X31 20X32	Project 1	Z Z	2
	Project 2		2
20X33	Project 3	Z	2
		1/7	
20Y1AE	Applied Electronics	KZ	2
Basic electronic s	semiconductor components, their principles, characteristics and typical connection diagrams. Semiconductor PN junction diodes, trans	sistors, thyristor,	operational
Basic electronic s		sistors, thyristor,	operational
Basic electronic s	semiconductor components, their principles, characteristics and typical connection diagrams. Semiconductor PN junction diodes, transpayed gates. Functions of basic electronic circuits and methods for their designs (rectifiers, voltage regulator with Zener diode, transisto	sistors, thyristor,	operational
Basic electronic s amplifiers, basic lo 20Y1AF	semiconductor components, their principles, characteristics and typical connection diagrams. Semiconductor PN junction diodes, transigning gates. Functions of basic electronic circuits and methods for their designs (rectifiers, voltage regulator with Zener diode, transisto amplifier as an inverting and noninverting amplifier).	sistors, thyristor, or as an amplifier,	operational operational
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21SLD	Seminar of Air Transport	Z	0
-	ons, terminology, basic rules. VFR / IFR. Basics of aerodynamics. Propulsion of aircraft. Aircraft design. Basics of navigation, radio na	-	
performance. Flig	ht planning, optimization of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic management of the planting of the plant	anagement, ground	handling,
04.704	security. Air crew. Airlines and economics. Space technologies.	7	
21X31	Project 1	Z	2
21X32	Project 2	Z	2
21X33	Project 3	Z	2
21Y1AM	Aeronautical Information Management (AIM)	KZ	2
	c overview of AIS and AIM. Transition from AIS to AIM. Regulatory base. Provision of AIS/AIM in the Czech Rep. AIP (Aeronautical In		
tne Czecn Rep. A	IRAC System. NOTAM messages. PIB (Pre-flight Informtion Bulletin). AIC (Aeoronautical Inf. Circulars). Aeronautical Charts. EAD (Eu (Quality Mng. System). ADQ (Aeronautical Data Quality). AIXM (Aeronautical Inf. Exchnage Format).	uropena AIS Datab	ase). QIVIS
21Y1BS	Unmanned aircraft systems 1	KZ	2
	n Development. Aircraft design. Legislation in force in the Czech Republic. Planning and execution of the flight. Airspace division. Op	1	
Offinantied Aviatio	procedures. Practical flights.	erational risks and	operational
21Y1LJ	Aeronautical Radio and Flight Instruments	KZ	2
	istory of aircraft instrumentation, aerometric instrumentation, Earth magnetism, aircraft electric equipment, gyroscopic instrumentation	1	
	off equipment, engine instrumentation, warning and recording systems, instrumentation operational requirements, radiocommunication		
21Y1LS	Air Traffic Services	KZ	2
Airspace structure	in Czech Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, APF	a ACC control. His	story of ATS
	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
	bus is focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exercises		•
	les, based on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improvement		
21Y1OH	Airline Business and Operations	KZ	2
<u>-</u>	s a comprehensive view of the commercial, operational and transportation activities of air transport companies. It focuses on the organization activities of air transport companies.		· ·
various aspects of t	their strategy, economic and operational indicators. It introduces students in detail to operational processes and the essentials of transports are strategy.	portation processes	s. It provides
04)/4.00	a basic view of the economic aspects of air transport.	1/7	0
21Y1PC	ATC Procedures and Activities	KZ	2
	procedures, basics of communication and phraseology, aircraft identification, spacing and traffic coordination. In addition, the course ts and low visibility operational procedures. Students will during the course learn basic safety management applications applied acro		
21Y1RZ	Human Resources Management	KZ	2
	numan resources in the organization and related disciplines file. Substance, importance and challenges of human resources manage	1	
- · · · · · · · · · · · · · · · · · · ·	nan resource management. Human resource planning. Search, recruitment and selection of employees. Motivation, evaluation and rer		
	dismissal and redundancies of employees. Education of employees. Planning career management.		3,
21Y1SI	ATC Simulator	KZ	2
Familiarization v	vith the simulation environment, acquiring basic habits, aircraft identification procedures, vectoring, level changes, ATC clearance, us	se of RNAV points.	Practical
exercises focusir	ng on basic vectoring, early application of vertical separation, EST and REV message passing. Practical exercises in the APPROACH	Harea, practicing a	rrival and
	departure management procedures, conflict resolution.		
21Y1UL	Aircraft Maintenance	KZ	2
	and technical operations. Maintenance and work processes. Defects search methods, status check diagnostic tools. Selection and qua		
Basic documentat	ion for maintenance. Optimization of time maintenance intervals. Regulation no. 1321/2014 Part 145. Human factors of aircraft maintenance. Seminars will be focused on practical application.	enance. Regulation	of director
21ZALD		KZ	2
	Basics of Air Transport terminology, basic rules. VFR/IFR. Basics of aerodynamics. Propulsion of aircraft. Aircraft design. Basics of navigation, radio navigation.	1	
	imization of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic management, group	- :	
,g pg,p.	Airlines and economics. Space technologies.	g, 2000.	,
22X31	Project 1	Z	2
22X32	Project 2	Z	2
22X33	Project 3	Z	2
23X31	Project 1	Z	2
23X32	Project 2	Z	2
23X33	Project 3	Z	2
	•	KZ	2
23Y1EH	Electronics and hardware in security of transportation eters of signals. Passive circuits, properties, basic measurements. Passive filters, semiconductors. Operational amplifiers, basic circu	1	
	gic circuits. AD converters. Connection of analog and digital parts. Basic blocks of digital signal processing. Measurement processing. I		
	in electronics.	9	
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 cyb		
engineerir	ng, cyber attack technology, information security, cyber attacks on telematics systems, security of systems with artificial intelligence,	norms and standar	ds.
23Y1KM	Crisis Management	KZ	2
	ame of crisis management with direction to Rescue system (IZS). After introduction to safety domain, there are terms and knowledge		tion of crisis
	gement and its targets; IZS-crisis management-crisis planning; and basic legislation. Practical part is concentrated to responsibility m		
23Y1KO	Quantum Physics and Optoelectronics	KZ	2
	Ground of quantum physics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics compor		_
23Y1KY	Cybernality	KZ	2
	behavior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism. In	1	
23Y1MK	Crisis Situation Management in Critical Infrastructure	KZ	2
	critical infrastructute elements on all levels, their protection systems, responsibilities of particular agencies of the state administration responsibilities to anounce particular safety provisions. Physical and cyber protection of critical infrastructure with special attention to	_	mnem, and
uicii	anomico parmona, carety promotion i hydroa and cyber protection of children initiati details with appellat attention to		

23Y1MU	Emergency Events Management Solution in Transport Infrastructure	KZ	2
Basic solutions of en	nergency events with emphasis of the transport infrastructure events and their solution management. Knowledge in the emergency pl	anning and specia	procedures
	in liquidation work within the transport infrastructure.		
23Y1OK	Protection of Critical Objects and Infrastructures	KZ	2
Types of technologic	al systems, critical item, risks and their courses, criticality, vulnerability, connectivity, dependability, resilience, failure, protection, safe	ty of critical object	s and critical
	infrastructures.		
23Y1TP	Criminal Law in IT and Transportation	KZ	2
Introduction of crin	ninal law into legal order, conception of culpability and criminal delict, consequency of other legal standards. international treaty and	criminal law, inve	stigation of
	crime, specific indicia of criminal court cases, practical examples.		
23Y1VS	Negotiation and Cooperation	KZ	2
Code of conduct for	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 negotia	ation, the essence of negotiation, the differences in negotiation in business and in crisis situations, the principle of "win both", specific	cations and bidding	g, 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 2025-12-07, time 20:00.