Study plan

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

Faculty/Institute/Others:

Department:

Branch of study guaranteed by the department: Welcome page

Garantor of the study branch:

Program of study: Technology in Transportation and Telecommunications

Type of study: Bachelor full-time

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

Note on the plan:

Name of the block: Compulsory courses Minimal number of credits of the block: 158

The role of the block: Z

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

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

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

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

Credits in the group: 30 Note on the group:

Note on the gro	up:					
Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11CAL1	Calculus 1 Tomáš T asák, Olga Vraštilová, Magdalena Hykšová, Bohumil Ková, Ond ej Navrátil Bohumil Ková Ond ej Navrátil (Gar.)	Z,ZK	7	2P+4C+22B	Z	Z
11LA	Linear Algebra Magdalena Hykšová, Lucie Kárná, Pavel Provinský, Martina Be vá ová Magdalena Hykšová Martina Be vá ová (Gar.)	Z,ZK	3	2P+1C+10B	Z	Z
12ZYDI	Introduction to Transportation Engineering Zuzana arská, Dagmar Ko árková	Z,ZK	2	1P+1C	Z	Z
18MTY	Materials Science and Engineering Tomáš Doktor, Jaromír Kylar, Veronika Drechslerová, Nela Kr má ová, Jitka ezní ková, Jaroslav Valach, Vít Malinovský, Jaromír Kylar Jaroslav Valach Tomáš Doktor (Gar.)	Z,ZK	3	2P+1C+10B	Z	Z
11GIE	Geometry Pavel Provinský, Old ich Hykš, Šárka Vorá ová Old ich Hykš Old ich Hykš (Gar.)	KZ	3	2P+2C+12B	Z	Z
14ASD	Algorithm and Data Structures Tomáš Brandejský, Michal Je ábek, Alena Kubá ová, Jan Procházka, Vít Fábera, Martin Fiala, 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 ezní ková, Vít Malinovský Jitka ezní ková Jitka ezní ková (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-TET-20/21 Name=1st Sem. Bachelor Full-Time TET from 2020/21

11CAL1	Calculus 1	∠,∠K	/ /
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	ntegral, 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		7 71/	
	Introduction to Transportation Engineering	Z,ZK	2
	n in land-use planning. Basic terms in transportation engineering. Traffic survey and traffic prognosis. Introduction to topic of roa	ads, public mass trai	nsport. Negative
	tition to environment and safety.		
18MTY	Materials Science and Engineering	Z,ZK	3
	rials science and engineering explains mechanical properties of structural materials based on their bonding forces and microst		
•	he most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and	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	of curves - parameterization, the arc of the curve, torsion and curvature, Frenet's trihedron. Kinematics - a curve as a trajector	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 u	sing flowcharts,
and use basic Boole	an algebra to construct constraints in algorithms. Students will be introduced to the basics of the Python programming languaç	ge - variable, branch	ing, loops, they
will learn to work with	n variables of basic data types (integer, floating point and string) and the list data structure in their programs.		
14KSP	Constructing with Computer Aid	KZ	2
"CAD systems" term	determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic commor	n work rules in grapi	nic applications
and CA systems. Co	ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting po-	ssibilites, AutoCAD	environment
profiles, drawings wi	h raster foundaments).		
18TED	Technical Documentation	KZ	
Technical standards	international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimension	onal and geometrica	2
	international diameter and international diameter, territorial displaced, toolinical diagrams and charte, dimension	onan ama goomounoc	_
arrangement of draw		onal and goomesness	_
	ing sheets.	Z	_
arrangement of draw		Z	al accuracy,
arrangement of draw 15DPLG Subject of psycholog	ing sheets. Transportation Psychology	Z construction. Psych	al accuracy,
arrangement of draw 15DPLG Subject of psycholog	ing sheets. Transportation Psychology y and its basic concepts. Information intake, decision-making and behaviour. Performance. Engineering psychology and vehicle	Z construction. Psych	al accuracy,
arrangement of draw 15DPLG Subject of psycholog of travel route and tra 16UDOP	ing 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	Z construction. Psych t operation.	2 plogical aspects
arrangement of draw 15DPLG Subject of psycholog of travel route and tra 16UDOP Vehicles and transport	ing 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 Introduction into Vehicles	Z construction. Psych t operation.	2 plogical aspects
arrangement of draw 15DPLG Subject of psycholog of travel route and tra 16UDOP Vehicles and transport	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 reation systems. Functionality and setup. Movement and drive principles. Engines and their characteristics. Rail, road, air and	Z construction. Psych t operation.	2 plogical 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 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
11CAL2	Calculus 2 Magdalena Hykšová	Z,ZK	5	2P+3C+20B	B L	Z
11STAT	Statistics Pavla Pecherková	Z,ZK	4	2P+2C+12B	B L	Z
12ZTS	Railway Lines and Stations	Z,ZK	4	2P+2C+10B	B L	Z
18SAT	Structural Analysis	Z,ZK	4	2P+2C+14B	B L	Z
20SYSA	Systems Analysis	Z,ZK	5	2P+2C+14B	B L	Z
14PRG	Programming Jana Kaliková	KZ	2	0P+2C+8B	B L	Z
17TEDL	Transport Technology and Logistics	KZ	3	2P+1C	L	Z
21ZALD	Basics of Air Transport	KZ	2	0P+2C+8B	B 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 equations and their systems, differential calculus of functions of several real variables. Riemann integral in Rn. Line and surface integrals.								
11STAT	Statistics	Z,ZK	4					
Basics of probability Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Parametric tests Nonparametric tests								
Regression and cor	elation analysis							
12ZTS	Railway Lines and Stations	Z,ZK	4					
Rail transport. Railw	ay track geometry parameters. Route layout of railway lines. Railway line construction - railway substructure and superstructure.	Spatial layout of	railway lines.					
Railway control syst	ems in relation to infrastructure. Operating and carriage points. Railway lines net and category. Traction in rail transport.							
18SAT	Structural Analysis	Z,ZK	4					
General system of f	General system of forces in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determinate beams and simple girders.							
Principle of virtual work. Kinematic method for calculation of reactions of statically determinate systems. Determination of axial forces in truss constructions. Cross-sectional characteristics								
of planar change Fi	f planar change. Fiber polygons and chains							

20SYSA	Systems Analysis	Z,ZK	5					
Introduction to system s	ntroduction to system sciences, system viewpoint, terminology, typical system analysis tasks, system identification, system interface and interface tasks, processes, system behaviour							
and its analysis, strong functions and processes, genetic code, system identity, system architecture. Tools for system analysis - Petri nets, decision tables, algorithms for structural								
tasks. Soft and hard sys	tems, methods for soft system analysis.							
14PRG	Programming	KZ	2					
The Course Programmir	ng builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python progr	amming 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 se	earching, tuples, s	ets, dictionaries,					
working with date and til	ne, regular expressions, functions and procedures, working with files (CSV, JSON, XML).							
17TEDL	Transport Technology and Logistics	KZ	3					
	Transport Technology and Logistics technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and freight t	· · · · · ·	3 ation of traffic in					
Basic terms in transport	1 6,	ransport, organis						
Basic terms in transport each transport modus, t	technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and freight t	ransport, organis						
Basic terms in transport each transport modus, to 21ZALD	technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and freight technologic factors of the side of operator and client, organisation of city transport, logistic technologies and their aplication up	ransport, organisa ising various trans KZ	sport modus.					
Basic terms in transport each transport modus, to 21ZALD History, definitions, terminal transport modus, to 21ZALD	technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and freight technologic factors of the side of operator and client, organisation of city transport, logistic technologies and their aplication upgasics of Air Transport	rransport, organisa ising various trans KZ ion. Weight, baland	sport modus. 2 ce, performance.					
each transport modus, to 21ZALD History, definitions, termination	technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and freight technologic factors of the side of operator and client, organisation of city transport, logistic technologies and their aplication upgraving Basics of Air Transport Basics of Air Transport Basics of Air Transport Basics of aerodynamics. Propulsion of aircraft. Aircraft design. Basics of navigation, radio navigation of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic management, g	rransport, organisa ising various trans KZ ion. Weight, baland	sport modus. 2 ce, performance.					

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:

intersections.

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11FYZ	Physics Old ich Hykš, Pavel Demo, Zuzana Malá, Tomáš Vít , Jana Kuklová Jana Kuklová Pavel Demo (Gar.)	Z,ZK	5	2P+2C+18B	Z	Z
12MDE	Transport Models and Transport Excesses Tomáš Pad lek, Josef Kocourek	Z,ZK	3	2P+1C+8B	Z	Z
11TGA	Graph Theory and its Applications in Transport Alena Rybi ková, Denisa Mocková, Dušan Teichmann Alena Rybi ková Alena Rybi ková (Gar.)	Z,ZK	4	2P+2C+12B	Z	Z
18PZP	Elasticity and Strength Tomáš Doktor, Jitka ezni ková, Josef Jíra, Jan Šleichrt, Jan Vy ichl, Daniel Kytý, Ond ej Jiroušek Ond ej Jiroušek Ond ej Jiroušek (Gar.)	Z,ZK	3	2P+1C+10B	Z	Z
20UITS	Introduction to Intelligent Transport Systems Martin Šrotý, Martin Langr, Ji í R ži ka, Patrik Horaž ovský, Vladimír Faltus, Pavel Hrubeš, Kristýna Navrátilová, Eva Haj iarová Martin Langr	Z,ZK	7	3P+2C+20B	Z	Z
12PPOK	Designing Roads, Highways and Motorways Tomáš Pad lek, Josef Kocourek, Petr Kumpošt Josef Kocourek (Gar.)	KZ	3	1P+2C+10B	Z	Z
14DATS	Database Systems Jan Kr ál, Jana Kaliková Jana Kaliková (Gar.)	KZ	2	1P+1C+10B	Z	Z
15JZ1A	Foreign Language - English 1 Markéta Vojanová, Dana Boušová, Marie Michlová, Marek Tome ek, Jan Feit, Markéta Musilová, Peter Morpuss, Jitka He manová, Eva Rezlerová Lenka Monková (Gar.)	Z	3	0P+4C+10B	Z	Z

15JZ1A	Markéta Musilová, Peter Morpuss, Jitka He manová, Eva Rezlerová Lenka Monková (Gar.)	۷	3	024404108	Z	Z
Characteristics	s of the courses of this group of Study Plan: Code=3S-BP-TET-24/25 Na	ne=3rd Sem	ı. Bachel	or Full-Tim	ne TET fr	rom 2024/2
11FYZ	Physics			Z,	ZK	5
Kinematics, dynam	nics, Newton's laws, force fields, mechanics of continuum, thermodynamics, introduction to electronics.	ostatics and elec	ctric curren	t.		
12MDE	Transport Models and Transport Excesses			Z,	ZK	3
Parameters of the t	traffic flow and methods for their measurement. Models of the traffic flow, communications load, I	ine and urban sy	stems. The	eory of queues	, shock wa	ives. Quality of
transport and its as	ssessment. Statistical characteristics of transport. Transport excesses, their analysis, the causes,	identify and mir	nimize the o	onsequences.	Improving	of transport
safety and fluency.						
11TGA	Graph Theory and its Applications in Transport			Z,	ZK	4
Basic terms of grap	ph theory, paths in graphs, flows in networks, location problems, design problems on graphs, opti	mum routing, us	se of graphs	s in other scier	ntific discip	lines.
18PZP	Elasticity and Strength			Z,	ZK	3
Tension and compr	ression. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section	of beam. Desig	n of riveted	l, bolted and w	elded joint	s of structures
Analysis of deflecti	on curve of beams. Torsion of circular cross sections. Combined loading. Stability.					
20UITS	Introduction to Intelligent Transport Systems			Z,	ZK	7
Terminology and le	gislative framework telematics systems and their architecture. Telematics systems in practice and t	heir operation. F	undamenta	als of information	on and tele	communication
systems for ITS. Pr	rinciples and technical support measurement of traffic data, localization and navigation. Practical	work with traffic	data. Real	examples of po	ossible app	lications of the
principles of ITS.						
12PPOK	Designing Roads, Highways and Motorways			ŀ	ζZ	3
Definition, types, or	wnership, maintenance, management and categorization of roads and highways. Curve and trans	sition curve. Sind	uosity and	standard spee	d. Route in	rural areas.
Range of vision for	stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drain	age and compo	nents of roa	ads. Safety dev	ice. Cross	ings, junctions

14DATS Database Systems Basic concepts of database systems, conceptual model, relational data model, the principles of normal forms, relational database design, security and integrity of data, database queries, relational algebra, SQL language, client / server, multilayer architectures, distributed database systems. Access to data via the WWW.

15JZ1A Foreign Language - English 1 3

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

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

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

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

Credits in the group: 16 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11MSP	Modeling of Systems and Processes Bohumil Ková	Z,ZK	4	2P+2C+12B	L	Z
16DOKY	Vehicle Technology	Z,ZK	5	2P+2C	L	Z
18KIDY	Kinematics and Dynamics	Z,ZK	4	2P+2C	L	Z
15JZ2A	Foreign Language - English 2 Marek Tome ek (Gar.)	Z,ZK	3	0P+4C+10B	L	z

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

11MSP Modeling of Systems and Processes Z.ZK System and subsystem, external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of differential and differential equations. Linear and nonlinear system, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer function. Stability of LTI systems. Discretization of continuous systems. System interconnection.

16DOKY Vehicle Technology

Z,ZK 5 Technical nomenclature in transportation technology. Vehicle in legislation. Design. Operation. Influence on environment. Vehicle and ecology. Traction engine characteristics combustion engines, electric engines, change of energy principles. Powertrain construction. Power transmission. Brake systems.

18KIDY Kinematics and Dynamics

Friction. Motion along a line and a curve. Kinematics of rigid body. Kinematics of the point mass and the system of mass points. Dynamics of a mass point and a system of mass points,

equation of motion. Method of Newton. D'Alembert principle. Free and forced vibration with one degree of freedom. Viscous damping. Impact theory. Introduction to the solution of vibration with two degrees of freedom.

Foreign Language - English 2

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

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

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

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

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

Credits in the group: 4 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11EMOP	Electromagnetic Field and Optics Tomáš Vít	Z,ZK	4	2P+2C	L	Z
12SDK	Highways, Motorways and Intersections Tomáš Pad lek (Gar.)	Z,ZK	4	2P+2C	L	Z

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

11EMOP	Electromagnetic Field and Optics	Z,ZK	4
Electric field. Electric c	urrent. Magnetic field. Electromagnetic field. Optics. Basics of solid-state physics.		
12SDK	Highways, Motorways and Intersections	Z,ZK	4

Roads and motorways network, transport output. Types of direction curves. Hairpin bend. Stopping sight distance and overtaking sight distance. Levels of traffic service. Design elements of crossroads and intersections. Crossroads. Roundabouts. Intersections. Special types of junctions. Capacity of crossroads and intersections. Structure of pavement of roads and motorways. Road engineering structures. Assessment of route alternatives.

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

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

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

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

Credits in the group: 3

Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11MDSD	Collecting and Processing of Traffic Data Ond ej P ibyl	KZ	3	2P+0C	L	Z
12PUSS	Organization Disposition of Railway Stations	KZ	3	2P+0C	L	Z

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

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

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

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

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

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

Credits in the group: 3 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
14PODP	Computer Aid of Transportation Projecting Drahomír Schmidt	KZ	3	0P+2C	L	Z
18MECK	Mechanics of Constructions	KZ	3	2P+0C	L	Z

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

14FODF	Computer Aid or transportation Projecting	i NZ	3				
Overview of CAx application for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, data exchange). Advanced blocks							
modification (attributes,	nodification (attributes, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transition curve, cross-and longitudinal						
section). Basics of 3D m	ection). Basics of 3D modelling.						
18MECK	Mechanics of Constructions	KZ	3				

Energetic solution of elastic beam. Solution of statically indeterminate systems - force and deformation method. Stiffness and compliance matrix of a system. Finite difference method. History and fundamentals of structural design. Characteristics of steel, design of steel structures. Introduction to mathematical theory of elasticity in 3D.

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

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

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

Credits in the group: 10 Note on the group:

127FI 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
12ZELP	Railway Operation Martin Jacura, Tomáš Javo ík	Z,ZK	4	2P+2C	Z	Z
22DON	Traffic Accidents Tomáš Blodek, Tomáš Kohout, Michal Frydrýn, Tomáš Mi unek Tomáš Mi unek Tomáš Mi unek (Gar.)	Z,ZK	6	3P+2C	Z	Z

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

122661	Trailway Operation	2,21	-	
Legislation in railway tra	ınsport. Railway vehicles. Railway signals and signal devices. Railway traffic organisation and operation. Simplified railway tra	offic operation. Ra	ilway vehicles	
brakes. Railway vehicles	s marking. Operation intervals. Theoretical graph of train running.			

22DON Traffic Accidents

Z.ZK

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

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

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

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

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

Credits in the group: 3 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
12DOSI	Traffic Surveys and Simulations Petr Kumpošt, Petr Richter	Z,ZK	3	1P+2C	Z	Z
18DYKS	Dynamics of Structures and Systems Ond ej Jiroušek, Tomáš Fíla, Stanislav Hra ov Stanislav Hra ov (Gar.) Stanislav Hra ov (Gar.)	Z,ZK	3	2P+1C	Z	Z

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

12DOSI Traffic Surveys and Simulations

Z.ZK

3

Ways of data collection in road transport. Traffic surveys. Automatic traffic counting. Preparation and implementation of traffic survey. Description of individual approaches focused on practical examples from real measurements. Methods of data processing and evaluation. Principles of simulation, SW environment for creating traffic models. Traffic model design procedure, calibration. Processing of a simple transport model based on real data.

18DYKS Dynamics of Structures and Systems

,ZK

3

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

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

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

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

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

Credits in the group: 5 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
12MKOD	City Rail Transport Ond ej Trešl	Z,ZK	5	2P+1C	Z	Z
16DYJV	Vehicle Dynamics Josef Mík, P emysl Toman, Josef Svoboda	Z,ZK	5	2P+1C	Z	Z

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

12MKOD City Rail Transport Z,ZK 5

City and suburban rail transport. Tram lines layout and city roads. Tram track geometry parameters. Tram track superstructure. Turnouts and other construction of tram lines. Tram stops and turn space. Underground and its basic characteristics. Underground nets in the world and undeground history in Prague. Underground track geometry parameters. Underground track superstructure and substructure. Underground stations. Suburban rail transport.

16DYJV Vehicle Dynamics Z,ZK 5

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

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

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

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

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

Credits in the group: 3 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
12POSD	Assessment of Transport Structures Martin Höfler Martin Höfler (Gar.)	KZ	3	2P+0C	Z	Z
18NUMM	Numerical Methods in Mechanics Ond ei Jiroušek, Radek Kolman, Radek, Kolman (Gar.)	KZ	3	2P+0C	Z	Z

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

12POSD Assessment of Transport Structures

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

18NUMM Numerical Methods in Mechanics

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

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

Name of the group: 6th Sem. Bachelor Full-Time TET-DOS from 2023/24 Requirement credits in the group: In this group you have to gain 14 credits

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

Credits in the group: 14 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
12PRMK	Urban Road Traffic and Design	Z,ZK	5	2P+2C	L	Z
12VHD	Public Transport	Z,ZK	5	3P+2C	L	Z
22METD	Measurement Methods and Technology in Transportation	ZK	4	2P+2C	L	Z

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

12PRMK	Urban Road Traffic and Design	Z,ZK	5
Composition of urban ro	ad, elements and routes for traffic, pedestrian and cycling transport, projection of intersections, traffic lights and its traffic safe	ty proposal, round	dabouts, calming
of traffic, precaution for	blind & partially-sighted, parking, traffic area, induction of traffic, organization and regulation of transport.		

Public Transport Importance of public transport, transport research, evaluation, planning of lines routes and territory operation, planning of operation parameters, preparation of operation, network conceptions, operation-technology and operation-economically conditions of planning of operation conceptions, planning of operation conception, planing and realisation of timetables, prepare of infrastrukture (route, stops), preference of public transport, financing.

Measurement Methods and Technology in Transportation

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

Measurement methods in transport, their meaning and use. Geodetic basics in Czechia. Angular, length and height measurements. Principles of mapping, accuracy and errors of geodetic measurements. Surveying and setting out. Challenges of localization, navigation and Global Navigation Satellite Systems. Laser scanning (terrestrial, mobile, UAV). Technical

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

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

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

Credits in the group: 4

Note on the group:

12VHD

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
16PAV	Passive Safety	Z,ZK	4	2P+1C	L	Z
17FID	Financing and Investment in Transport	Z,ZK	4	2P+1C+12B	L	Z

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

16PAV Passive Safety

Road accident evaluation. Testing and legislation. Crash tests. Carbody properties. Injury mechanics. Restrain systems. Airbags. Road user safety. Mathematic modelling. Post collision safety systems.

17FID Financing and Investment in Transport

Z,ZK

Sources of financing of transport infrastructure, the role of public administration in the financing and realization of investment in transport, the investment project cycle, subsidy programs and their rules, competition, effectiveness and efficiency of spending public funds, evaluation systems of public projects and programs.

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

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

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

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

Credits in the group: 3 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
12ZAR	Introduction to Architectural Design	Z	3	2P+0C+8B	L	Z
14ZDA	Data Processing Martin Šrotý	Z	3	0P+2C	L	Z

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

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

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

The role of the block: ZP

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

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

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

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

Credits in the group: 8
Note on the group:

	Name of the course / Name of the group of courses					
Code	(in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11X31D	Project 1 DOS Jan P ikryl	Z	2	0P+2C	L	ZP
12X31D	Project 1 DOS	Z	2	0P+2C	L	ZP
14X31D	Project 1 DOS	Z	2	0P+2C	L	ZP
15X31D	Project 1 DOS	Z	2	0P+2C	L	ZP
16X31D	Project 1 DOS	Z	2	0P+2C	L	ZP
17X31D	Project 1 DOS	Z	2	0P+2C	L	ZP
18X31D	Project 1 DOS Daniel Kytý	Z	2	0P+2C	L	ZP
20X31D	Project 1 DOS	Z	2	0P+2C	L	ZP
21X31D	Project 1 DOS	Z	2	0P+2C	L	ZP
22X31D	Project 1 DOS	Z	2	0P+2C	L	ZP
23X31D	Project 1 DOS	Z	2	0P+2C	L	ZP
11X32D	Project 2 DOS Jana Kuklová, Michal Matowicki, Pavla Pecherková, Ond ej P ibyl, Jan P ikryl Jana Kuklová Jana Kuklová (Gar.)	Z	2	0P+3C	Z	ZP
12X32D	Project 2 DOS Zuzana arská, Dagmar Ko árková, Tomáš Pad lek, Josef Kocourek, Petr Kumpošt, Martin Jacura, Tomáš Javo ík, Ond ej Trešl, Pavel Purkart,	Z	2	0P+3C	Z	ZP
14X32D	Project 2 DOS	Z	2	0P+3C	Z	ZP
15X32D	Project 2 DOS	Z	2	0P+3C	Z	ZP

16X32D	Project 2 DOS Josef Mik, Michal Cenkner	Z	2	0P+3C	Z	ZP
17X32D	Project 21 DOS	Z	2	0P+3C	Z	ZP
18X32D	Project 2 DOS Nela Kr má ová, Daniel Kytý, Tomáš Fíla	Z	2	0P+3C	Z	ZP
20X32D	Project 2 DOS Ji í R ži ka, Pavel Hrubeš, Milan Sliacky	Z	2	0P+3C	Z	ZP
21X32D	Project 2 DOS	Z	2	0P+3C	Z	ZP
22X32D	Project 2 DOS Tomáš Kohout, Michal Frydrýn, Karel Kocián, Luboš Nouzovský, Jakub Nová ek, Pavel Vrtal	Z	2	0P+3C	Z	ZP
23X32D	Project 2 DOS	Z	2	0P+3C	Z	ZP
11X33D	Project 3 DOS	Z	4	0P+4C	L	ZP
12X33D	Project 3 DOS	Z	4	0P+4C	L	ZP
14X33D	Project 3 DOS	Z	4	0P+4C	L	ZP
15X33D	Project 3 DOS	Z	4	0P+4C	L	ZP
16X33D	Project 3 DOS	Z	4	0P+4C	L	ZP
17X33D	Project 3 DOS	Z	4	0P+4C	L	ZP
18X33D	Project 3 DOS	Z	4	0P+4C	L	ZP
20X33D	Project 3 DOS	Z	4	0P+4C	L	ZP
21X33D	Project 3 DOS	Z	4	0P+4C	L	ZP
22X33D	Project 3 DOS	Z	4	0P+4C	L	ZP
23X33D	Project 3 DOS	Z	4	0P+4C	L	ZP

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

TET-DOS HOL	II EVELIES		
11X31D	Project 1 DOS	Z	2
12X31D	Project 1 DOS	Z	2
14X31D	Project 1 DOS	Z	2
15X31D	Project 1 DOS	Z	2
16X31D	Project 1 DOS	Z	2
17X31D	Project 1 DOS	Z	2
18X31D	Project 1 DOS	Z	2
20X31D	Project 1 DOS	Z	2
21X31D	Project 1 DOS	Z	2
22X31D	Project 1 DOS	Z	2
23X31D	Project 1 DOS	Z	2
11X32D	Project 2 DOS	Z	2
12X32D	Project 2 DOS	Z	2
14X32D	Project 2 DOS	Z	2
15X32D	Project 2 DOS	Z	2
16X32D	Project 2 DOS	Z	2
17X32D	Project 21 DOS	Z	2
18X32D	Project 2 DOS	Z	2
20X32D	Project 2 DOS	Z	2
21X32D	Project 2 DOS	Z	2
22X32D	Project 2 DOS	Z	2
23X32D	Project 2 DOS	Z	2
11X33D	Project 3 DOS	Z	4
12X33D	Project 3 DOS	Z	4
14X33D	Project 3 DOS	Z	4
15X33D	Project 3 DOS	Z	4
16X33D	Project 3 DOS	Z	4
17X33D	Project 3 DOS	Z	4
18X33D	Project 3 DOS	Z	4
20X33D	Project 3 DOS	Z	4
21X33D	Project 3 DOS	Z	4
22X33D	Project 3 DOS	Z	4
23X33D	Project 3 DOS	Z	4

Name of the block: Compulsory elective courses

Minimal number of credits of the block: 8

The role of the block: PV

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

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

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

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

Credits in the group: 8 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
21Y1AM	Aeronautical Information Management (AIM) Radek Hoda Radek Hoda (Gar.)	KZ	2	2P+0C	Z	PV
00Y1XB	Active participation in a scientific project, workshop, short-term trip abroad Patrik Horaž ovský Patrik Horaž ovský Patrik Horaž ovský (Gar.)	KZ	2	2P+0C		PV
20Y1AF	Alternative Forms of Transportation Project Financing Mária Jánešová 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 Kr ál	KZ	2	2P+0C	L	PV
15Y1BO	Work Safety and Health Protection in Transportation	KZ	2	2P+0C	L	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
	European Integration within Historical Context					
15Y1EH	Jan Feit Jan Feit (Gar.) Experimental Methods in Mechanics	KZ	2	2P+0C	Z	PV
18Y1EM	Daniel Kytý Daniel Kytý Daniel Kytý (Gar.)	KZ	2	2P+0C	Z	PV
15Y1FD	French Area Studies and Transportation	KZ	2	2P+0C	L	PV
14Y1HW	Computer Hardware	KZ	2	2P+0C	L	PV
15Y1HL	History of Civil Aviation	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	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 Ji í R ži ka, Patrik Horaž ovský, Kristýna Navrátilová Ji í R ži ka Ji í R ži ka (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		PV

17Y1LL	Logistics of Passenger and Freight Air Transport	KZ	2	2P+0C	L	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	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	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 Ladislav Capoušek, Peter Vittek, 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
17Y10F	Personal Finance	KZ	2	2P+0C	Z	PV
20Y1OK	Road Lighting	KZ	2	2P+0C	L	PV
11Y1PV	Parametrical and Multicriterial Programming Olga Vraštilová Olga Vraštilová (Gar.)	KZ	2	2P+0C	Z	PV
17Y1PM	Personnel Management	KZ	2	2P+0C	L	PV
12Y1PC	Pedestrian and Cycling Transport	KZ	2	2P+0C	L	PV
14Y1PG	Computer Graphics	KZ	2	2P+0C	L	PV
14Y1P2	Computer Aid of Transportation Projecting 2	KZ	2	2P+0C	Z	PV
18Y1PS	Computer Simulations in Mechanics	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 Stanislav Pleninger, Terézia Pilmannová 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	PV
12Y1C2	Designing Roads in Civil 3D II Tomáš Honc Tomáš Honc (Gar.)	KZ	2	2P+0C	Z	PV
14Y1PA	3D Modeling in AutoCAD	KZ	2	2P+0C	Z	PV
16Y1PV	Operation, Construction and Maintenance of Vehicles	KZ	2	2P+0C	L	PV
21Y1PA	Air Traffic Control Operating Procedures Terézia Pilmannová	KZ	2	2P+0C	Z	PV
12Y1PU	Organization Disposition of Railway Stations	KZ	2	2P+0C	L	PV
12Y1RU	Railway Lines Reconstruction	KZ	2	2P+0C	Z	PV
16Y1RE	Control and Electronic Vehicle Systems Josef Mik, P emysl Toman 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	PV

21Y1TH	Aircraft Technical Handling Peter Olexa	KZ	2	2P+0C	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 Vorá ová	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	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 the courses of this group of Study Plan: Code=Y1-BP-DOS-24/25 Name=Comp. Sel. Courses Bachelor Full-Time TET-DOS from 2024/25

KZ

21Y1AM Aeronautical Information Management (AIM)

ZIIIAW	Aeronautical information ivialiagement (Alivi)	1\2	, 2
Definition and basic	overview of AIS and AIM. Transition from AIS to AIM. Regulatory base. Provision of AIS/AIM in the Czech Rep. AIP (Aeronautio	cal Inf. Publication).	VFR Manual of
the Czech Rep. AIRA	C System. NOTAM messages.PIB (Pre-flight Informtion Bulletin). AIC (Aeoronautical Inf. Circulars). Aeronautical Charts. EAD	(Europena AIS Da	tabase). QMS
(Quality Mng. Systen	n). 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 su	ch forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt	payments come fro	m its budget but
the final debtor is not	a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of	f securities as an a	ternative source
of transportation and	telecomunication projects.		
18Y1AM	Anatomy, Mobility and Safety of Man	KZ	2
Survey of tissues. An	atomical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circula	ation and nervous s	ystem. Structure
and biomechanics of	muscular-skeletal system. Injury of human organs and musculo-skeletal system during traffic accidents. Mobility of ill and inju	red man and his tre	atment. Human
joint prostheses. Pro	ective means and traffic safety regulations.		
14Y1AV	Animation and Visualization	KZ	2
Advanced modification	ons and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and	d Space Warp obje	cts. Atmospheric
and other effects, rer	dering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animati	on using Inverse K	inematics.
12Y1AE	Applied Ecology	KZ	2
General ecology - ec	ological concepts and principles, ecosystem, ecological factors, energy flow through the ecosystem. Application of knowledge	within EIA docume	entation. Special
ecology. Landscape	ecology - origin and historical development. Landscape definition and classification. Success. Traffic constructions in the count	ryside. Landscape	and nature
protection. Applied e	cology.		
20Y1AE	Applied Electronics	KZ	2
Basic electronic sem	conductor components, their principles, characteristics and typical connection diagrams. Semiconductor PN junction diodes, t	ransistors, thyristor	, operational
amplifiers, basic logic	egates. Functions of basic electronic circuits and methods for their designs (rectifiers, voltage regulator with Zener diode, trans	sistor as an amplifie	er, operational
amplifier as an invert	ing and noninverting amplifier).		
14Y1BE	Barrierless Transport	KZ	2
The issue of barrierle	ss accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Stud	ents will gain theor	etical knowledge
of barrierless environ	ment roads, railway stations, public transport stops, terminal buildings, vehicles, public transport, information and orientation sys	tems and transport	ation technology
Theoretical knowledge	le will be supplemented by practical examples.		
15Y1BO	Work Safety and Health Protection in Transportation	KZ	2
Fundamental legislat	ive, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportatio	n. Health protection	n programmes,
health insurance of h	ome and foreign business trips, statistics, working practice.		
11Y1BK	Error Detection Codes for Interlocking Systems	KZ	2
Safe communication	and methods for its assuring. Safety codes linear codes, cyclic codes, BCH codes, Reed-Solomon codes. Transmission channel	els, detection of tran	smission errors
probability of undete	sted error. Design and assessment of detection codes; requirements of the European standard EN 50159.		
21Y1BS	Unmanned aircraft systems 1	KZ	2
Unmanned Aviation	Development. Aircraft design. Legislation in force in the Czech Republic. Planning and execution of the flight. Airspace division.	. Operational risks	and operational
procedures. Practica	flights.		

14Y1BM	Biometric Methods	KZ	2
Basic biometric terms, a	uthentication methods, principles and performance measurement of biometric systems, overview of biometric technologies,	hand geometry, i	ris recognition,
retina recognition metho	od, 2D and 3D face recognition, vein patterns on the wrist, ear biometrics, fingerprint recognition, skin spectroscopy, behavio	ral methods, the u	use of biometrics
in transport applications	s, safety and risks of biometric technologies.		
15Y1DZ	History of Railway	KZ	2
	team railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Re		1
	levelopment in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train conr		
· · · · · · · · · · · · · · · · · · ·	by junctions. Excursions and projections.	iootiono, ranway iii	ioo conon donon,
		1/7	
12Y1DS	Project Documentation in Practice	KZ	2
	creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process	ss. Budget and pr	icing. Practical
creation of some project			
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	public projects (C	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, fundin	g from EU funds,	program HDM-4.
23Y1EH	Electronics and hardware in security of transportation	KZ	2
	of signals. Passive circuits, properties, basic measurements. Passive filters, semiconductors. Operational amplifiers, basic cir	I	1
	rcuits. AD converters. Connection of analog and digital parts. Basic blocks of digital signal processing. Measurement processing	•	
in electronics.		.99	
20Y1EK	Qualification in Electrical Engineering	KZ	2
	h measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock haza	I .	1
•		=	_
_	red currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legis	lation, standards a	and regulations
	safety and electrical engineering.		,
16Y1EN	Energy Requirements of Vehicles	KZ	2
Dynamics and the driving	ng inertial of the vehicles. Types of energy - kinetic, static, heat, chemical and others. Ways of energy change into kinetic ene	rgy. Combustion 6	engine, electric
drive, steam engine, air	engine. Energy accumulation means, accumulator, flywheel, fuel cell. Energy recuperation. WTW analysis.		
20Y1EA	Environmental Aspects of Transport	KZ	2
State of the atmosphere	, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabil	ı istic forecasts. for	ecast evaluation.
	nts and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transp		
15Y1EH		KZ	2
	European Integration within Historical Context	I .	_
	ation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism		
-	r's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and	a its consequence	es for Europe.
	Serman relationship - a driving power of starting European integration.		,
18Y1EM	Experimental Methods in Mechanics	KZ	2
The purpose and role of	f experimental mechanics. Sensors for mechanical testing. Overview of experimental methods. Destructive and non-destruct	ive testing of mate	erials. Design of
experimental procedure	s and sample preparation. Tensile and bending tests. Electrical resistance strain gages. Optical based strain measurement. I	Fatigue and lifetim	e prediction.
Instrumented hardness	testing. Introduction to electron microscopy. Errors in measurement.		
15Y1FD	French Area Studies and Transportation	KZ	2
France - geography and	regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air tr	affic, specialised t	terminology.
	ure. Current political system. System of education, studying in France. Selected authors of French literature. French gastrono		0,
14Y1HW	Computer Hardware	KZ	2
	basics of logical circuits design and their realization using FPGA. In detail, description of computer architecture and separate	I	I
arithmetic and logical ur		e parts designing	- controllers,
		1/7	
15Y1HL	History of Civil Aviation	KZ	2
" " " " "	velopment of aircrafts lighter than air. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development		•
World airports. Famous	aviators. Helicopters. CSA airplanes. Development of aircrafts in Czechoslovakia between the years 1945-1989. Classic era	of aviation. Golde	en era of civil
aviation. Modern era of	civil aviation. Airline companies. Supersonic flying.		
15Y1HD	History of City Mass Transport	KZ	2
History of city mass tran	sport in the world, development of tram, bus and trolley-bus systems. History of transport networks in the world, current trer	ids and developm	ents of tariff and
clearance systems. Hist	ory of city transport in Prague and Brno. History of tram, bus and trolley-bus operation systems in the Czech Republic and S	lovakia.	
12Y1HD	Traffic Noise	KZ	2
	asic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regula	I	ı
	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.	or interest: weth	saciogy of
		1/7	
15Y1HE	Work Hygiene and Ergonomics in Traffic	KZ	2
_	upational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of thes		
· ·	of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technology t	o possibilities and	I skills of a man.
Practical examples from	the field of transportation; relevant legislature.		
16Y1IS	Interactive simulators and simulations	KZ	2
Simulation theory and a	pplication of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical n	nodels. Computing	methods.
Simulation of vehicle dy	namics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simu	ulators.	
12Y1KN	Combined Transportation	KZ	2
	ategy and legislation. Load units. Means of transport in combined transport. Combined transport systems. Transshipping area	1	1
12Y1KP	Communication and Promotion of Transport Projects	KZ	2
	Relations and the power of public opinion. Work and tasks of PR department and press spokesperson. Communication with	I	I
		· · · · · · · · · · · · · · · · · · ·	
	Communication strategy of transport projects. Systematic goodwill building. Crisis situations in communication and preparatio	III IOI CIISIS COIIIM	unication. THE
	rketing and political PR on transport projects. Lobbing.		_
20Y1KP	Communication and presentation skills	KZ	2
· ·	d their fulfillment, current communication networks, work with various sources, formal requirements of emails and final these		
	elligence, manipulation and way of working with it, coping with stressful situations, formal requirements of presentations, wa	ys of communicat	ion during
presentation, presentation	on skills, presentation skills in online environment.		
23Y1KM	Crisis Management	KZ	2
	of crisis management with direction to Rescue system (IZS). After introduction to safety domain, there are terms and knowled	lge on: theory and	position of crisis
	gets; IZS-crisis management-crisis planning; and basic legislation. Practical part is concentrated to responsibility matrix com	-	
	<u> </u>		

23Y1KO	Quantum Physics and Optoelectronics	KZ	2
23Y1KY	ysics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics components. Cybernality	KZ	2
-	havior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism	1	1
23Y1KB	Cyber security in transportation	KZ	2
Basic concepts of sec	urity and cyber security, legal status in the field of cyber security, virtual cyberspace and communities, taxonomy of crimes in c	cyberspace, socia	l impacts, social
	ack technology, information security, cyber attacks on telematics systems, security of systems with artificial intelligence, norms		T
21Y1LJ	Aeronautical Radio and Flight Instruments	KZ	2
,	ry of aircraft instrumentation, aerometric instrumentation, Earth magnetism, aircraft electric equipment, gyroscopic instrumenta nt, engine instrumentation, warning and recording systems, instrumentation operational requirements, radiocommunication ar	,	
21Y1LS	Air Traffic Services	KZ	2
_	ranic Services Exech Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, A	I	1
1 -	ovakia. ATS - Model of financing. Training System of Air Traffic Controllers. Future development of ATS.		
17Y1LL	Logistics of Passenger and Freight Air Transport	KZ	2
Logistics airline passe	nger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial t	transport process	passengers and
air cargo. Information	systems in air transport. Global distribution systems.		
20Y1LN	Location and Navigation	KZ	2
	oles of road networks, localization on the network. Routing algorithms, their properties and implementation. Description and ex	xamples of datase	ets for finding
<u> </u>	routing algorithms, their properties and implementation.	1/7	
23Y1MK	Crisis Situation Management in Critical Infrastructure	KZ	2
	al infrastructute elements on all levels, their protection systems, responsibilities of particular agencies of the state administrati- anounce particular safety provisions. Physical and cyber protection of critical infrastructure with special attention to the soft to	_	overnment, and
23Y1MU	Emergency Events Management Solution in Transport Infrastructure	KZ	2
	rgency events with emphasis of the transport infrastructure events and their solution management. Knowledge in the emergenc	I	_
	in the transport infrastructure.	, p	
17Y1MD	Marketing in Transportation	KZ	2
General principles of r	narketing applied to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transpo	rt and the resultir	g differences in
the application of mar	seting.		
18Y1MT	Engineering Materials	KZ	2
Systematic overview of	f main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers	and composites,	attention is paid
	and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's selection		
21Y1MP	Matlab for project-oriented study	KZ	2
	is focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exerci		_
	ased on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improvem		natiad skills.
14Y1MP	Modeling Complex Assemblies and Models in Parametric Modeller ing - tools and methodology of working subassemblies and assemblies, sheet metal parts modelling, welded assemblies, pipe	KZ	_
	ing - tools and methodology of working subassemblies and assemblies, sheet metal parts modelling, welded assemblies, pipe endering - physical and material properties, lighting sources. MKP - visual example.	elines, and distrib	ution lines.
15Y1MK	Modern History in Context: Every Day Life and Transport	KZ	2
	modern history of every day life, science, technology and transport in a wider context.	112	_
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 semantic	analysis of texts.	Discussion on
selected topics.			Dioodoolori ori
21Y1OH			Dioddolon on
The course provides a	Airline Business and Operations	KZ	2
•	comprehensive view of the commercial, operational and transportation activities of air transport companies. It focuses on the organic	anizational structu	2 ire of companies,
various aspects of the	comprehensive view of the commercial, operational and transportation activities of air transport companies. It focuses on the organs restrategy, economic and operational indicators. It introduces students in detail to operational processes and the essentials of tra	anizational structu	2 ire of companies,
various aspects of the	comprehensive view of the commercial, operational and transportation activities of air transport companies. It focuses on the organ retrategy, economic and operational indicators. It introduces students in detail to operational processes and the essentials of transports of air transport.	anizational structu	2 are of companies, esses. It provides
various aspects of the a basic view of the eco 23Y10K	comprehensive view of the commercial, operational and transportation activities of air transport companies. It focuses on the organ strategy, economic and operational indicators. It introduces students in detail to operational processes and the essentials of transport commercial strategy. Protection of Critical Objects and Infrastructures	anizational structuansportation proce	2 are of companies, esses. It provides
various aspects of their a basic view of the economic and a basic view of the economic and a basic view of the economic and a basic view of the economic view of the basic view of the economic view of t	comprehensive view of the commercial, operational and transportation activities of air transport companies. It focuses on the organ retrategy, economic and operational indicators. It introduces students in detail to operational processes and the essentials of transports of air transport.	anizational structuansportation proce	2 are of companies, esses. It provides
various aspects of their a basic view of the economic 23Y1OK Types of technological infrastructures.	comprehensive view of the commercial, operational and transportation activities of air transport companies. It focuses on the organistrategy, economic and operational indicators. It introduces students in detail to operational processes and the essentials of transports of air transport. Protection of Critical Objects and Infrastructures systems, critical item, risks and their courses, criticality, vulnerability, connectivity, dependability, resilience, failure, protection, so	anizational structuansportation processor KZ safety of critical of	2 pre of companies, esses. It provides 2 pjects and critical
various aspects of their a basic view of the economic 23Y1OK Types of technological infrastructures. 20Y1OI	comprehensive view of the commercial, operational and transportation activities of air transport companies. It focuses on the organistrategy, economic and operational indicators. It introduces students in detail to operational processes and the essentials of transports of air transport. Protection of Critical Objects and Infrastructures systems, critical item, risks and their courses, criticality, vulnerability, connectivity, dependability, resilience, failure, protection, some Collection and Information Systems	anizational structuansportation processorial KZ safety of critical of KZ	2 ure of companies, esses. It provides 2 ojects and critical
various aspects of their a basic view of the economic 23Y1OK Types of technological infrastructures. 20Y1OI Fare collection system	comprehensive view of the commercial, operational and transportation activities of air transport companies. It focuses on the organistrategy, economic and operational indicators. It introduces students in detail to operational processes and the essentials of transports of air transport. Protection of Critical Objects and Infrastructures systems, critical item, risks and their courses, criticality, vulnerability, connectivity, dependability, resilience, failure, protection, so	KZ safety of critical ol KZ ts for users (time	2 ure of companies, esses. It provides 2 ojects and critical
various aspects of their a basic view of the economic 23Y1OK Types of technological infrastructures. 20Y1OI Fare collection system	comprehensive view of the commercial, operational and transportation activities of air transport companies. It focuses on the organ strategy, economic and operational indicators. It introduces students in detail to operational processes and the essentials of transport components of Critical Objects and Infrastructures Systems, critical item, risks and their courses, criticality, vulnerability, connectivity, dependability, resilience, failure, protection, so Fare Collection and Information Systems Is in public transport and their components (on-board units, validators, turnstiles,). Information systems and their components (cycles, location or current delay of vehicles,). The issue of tariff systems. Other examples of clearance systems (parking	KZ safety of critical ol KZ ts for users (time	2 ure of companies, esses. It provides 2 ojects and critical
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various aspects of their a basic view of the ecceptation of the eccept	comprehensive view of the commercial, operational and transportation activities of air transport companies. It focuses on the organistrategy, economic and operational indicators. It introduces students in detail to operational processes and the essentials of transport. Protection of Critical Objects and Infrastructures systems, critical item, risks and their courses, criticality, vulnerability, connectivity, dependability, resilience, failure, protection, so in public transport and their components (on-board units, validators, turnstiles,). Information systems and their components (cycles, location or current delay of vehicles,). The issue of tariff systems. Other examples of clearance systems (parking Object - oriented programming in JAVA capsulation. Classes. Attributes. Access modifiers. Methods and overloading. Special methods (constructors, getters / setters) a. Polymorphism. Statics, constants, interfaces, abstract classes, enum, packages, exceptions, collections, generics, lambda en GNU/Linux OS. X-window system. Rights management - users and groups, ACL rights. Filesystems and attributes. Program	KZ safety of critical of KZ hts for users (time: g). KZ Basic object me expressions, anon KZ ms and processes	2 pre of companies, esses. It provides 2 projects and critical
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12Y1PC	Pedestrian and Cycling Transport	KZ	2
· · · · · · · · · · · · · · · · · · ·	Pedestrian crossings. Modifications for blind, dim-sighted and disabled people. Design of cycle routes network. Ways of cycle ro	-	
for cyclists. Separation	of cyclists from other transport modes. Cycle tracks and its design - one way streets, reserved traffic lanes, bus stops, crossir	ngs with other tran	sport modes,
crossroads. Traffic signs	and road marking for cyclists.		
14Y1PG	Computer Graphics	KZ	2
Basic formats of graphic	c and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with ed	ı litina programs (w	ithin the user
	s, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics cards.	01 0 (
14Y1P2		KZ	2
	Computer Aid of Transportation Projecting 2		
	ation for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting,		
·	relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic trans	sition curve, cross-	and longitudinal
section). Basics of 3D n			
18Y1PS	Computer Simulations in Mechanics	KZ	2
Principles and overview	of tools for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model develop	ment and adaptat	ion of geometry
from other CAE system	s. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary conditions	and application o	f the load. Basic
tasks of structural and r	nodal analysis. Introduction to complex nonlinear problems.		
14Y1PI	Corporate Information System	KZ	2
	edge, components of information system, syntatic and semantic sense of data, structure of corporate information system, par		
			-
**	n, storage, etc.), corporate information politic and information control, risks of information system operation, legal environmen	it of illiorniation sy	/sterii operation,
-	n, information system security, data protection, safety politics.		
14Y1PZ	Advanced Data Processing in Spreadsheets	KZ	2
Students will be familiar	with principles of working in a spreadsheet. Graphic layout of the table appearance, formatting of numbers, insertion of form	ulas and functions	s, including
addressing, error detect	ion. Working with large spreadsheets, filters, advanced filters, database functions. Pivot tables and charts, conditional formattin	g, solution finding	, solver, macros,
data analysis. Examples	s and questions from various companies and training.		
21Y1PC	ATC Procedures and Activities	KZ	2
	lures, basics of communication and phraseology, aircraft identification, spacing and traffic coordination. In addition, the course		
· · · · · · · · · · · · · · · · · · ·	bility operational procedures. Students will during the course learn basic safety management applications applied across the		anic control at
· · · · · · · · · · · · · · · · · · ·			
12Y1PD	Assessment of Transport Structures	KZ	2
	t structures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibilitie		
transport structures on	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
	ganization management. Management systems and international standards; quality management systems. Quality products,	ı processes, syster	l l
	s management, management principles. Principles of process management, monitoring and measurement systems managemer	-	
	nt. Process management principles. Metrology and testing. Product certification.	na ormorm namow	on or orangardo
		177	
14Y1PJ	C Programming Language	KZ	2
	je. Preprocessor, basics of the C language (data types, syntax, commands), functions, pointes, dynamical memory allocation,	string, files, structi	ures and unions.
Implementations of abs	tract data types (FIFO, LIFO, list), programming techniques (sorting, searching, recursion), using bitwise oprerators.		
12Y1C1	Designing Roads in Civil 3D I	KZ	2
_	Designing Roads in Civil 3D I o the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go throu		
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The course is devoted to particular linear building	o the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. Th	gh the complete o	lesign of this
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21Y1SI ATC Simulator	KZ	2
Familiarization with the simulation environment, acquiring basic habits, aircraft identification procedures, vectoring, level changes, ATC clearance, us	•	
exercises focusing on basic vectoring, early application of vertical separation, EST and REV message passing. Practical exercises in the APPROAC	H area, practicing	arrival and
departure management procedures, conflict resolution.	KZ	2
20Y1SC Sensors and Actuators Principles of sensors and actuators. Basics of measuring theory and actuating influence. The respective technologies and construction principles. Sensor	ı	
state (temperature, humidity), chemical and particle flow values. Electrical, pneumatic and hydraulic actuators and solid phase elements.	3 of friconariloai, c	neero magnere,
17Y1SL Sociology of Human Resources	KZ	2
Human resources and their importance, work group as a special kind of social group, communication, personal management, modern management, h	ı	
of the organization.		
11Y1SI Transportation Software Engineering	KZ	2
Basic concepts of software engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and implement analysis and software architectures to analyses, design and implement	mentation using fo	rmal techniques
and practical usuage.	1/7	
16Y1KS Quality and Reliability of Vehicles Quality and reliability theory in design, development, production and operation of vehicles. Definition and possible approach to quality and reliability.	KZ	2
Mode and Effects Analysis), QFD (Quality Function Deployment), DFx (Design for Assamly, Manufacturying, Quality, Services) and other methods		
Knowledge-based systems of quality and reliability, data collection.		. арриоанопо
12Y1SU Road Management and Maintenance	KZ	2
Getting familiar with ownership of roads in the Czech Republic and the administration of the road at the state and county level. It is presented develo	pment of road net	twork, short,
medium and long-term strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and re	pair methods are	discussed in the
classroom as well as investment activity in highway engineering.	177	
16Y1SO Strategy and innovation in mobility	KZ	2 (Dia hudaati
Introduction to innovation, definition. Innovation strategy. Innovation life cycle and ecosystem, main sources and funding opportunities. Successful inco-financing, evaluation. Sprint method and its use. Innovative business model - main patterns and examples, design, strategy, processes and outlook		_
of use). Creating an innovation strategy. Customer and value map, design and testing.	on (buomicoo pian	aa pooo
17Y1SK Urban and Regional Rail Transport Systems	KZ	2
Factors affecting transport demand, modal-split, distribution of passenger flows on public regional transport lines. Optimization of line management,	line networking. C	reating and
evaluation of the timetable. Vehicle circulation creation. Optimizing driver shifts and arranging them in turnus. Effects of barrier-free and public transp	ort preferences. T	he role of
marketing.		
21Y1TH Aircraft Technical Handling Aircraft towing and pushing tractors. GPU. Air conditioning and heating units. Aircraft fuel equipment. De-acing and anti-icing units. Loading and unlo	KZ	2
passangers onboarding and offboarding. Operational processes of aircraft technical handling and regulations. Modernization and technical progress		inentioi
11Y1TG Graph Theory	KZ	2
Basic concepts and terminology of graph theory, graph representation. Problems of graph theory, problem instance. Graph search algorithms, trees,	l	
path problem, Eulerian path, bipartite graph matching, flow networks, circulations, critical path method, traveling salesman problem. Problem of existence	ce and optimization	n and algorithms
for their solving. Computational complexity, dealing with NP-complete problems, heuristic approach.	1	
23Y1TP Criminal Law in IT and Transportation	KZ	2
23Y1TP Criminal Law in IT and Transportation Introduction of criminal law into legal order, conception of culpability and criminal delict, consequency of other legal standards. international treaty are		
23Y1TP Criminal Law in IT and Transportation Introduction of criminal law into legal order, conception of culpability and criminal delict, consequency of other legal standards. international treaty arcrime, specific indicia of criminal court cases, practical examples.	nd criminal law, in	estigation of
23Y1TP Criminal Law in IT and Transportation Introduction of criminal law into legal order, conception of culpability and criminal delict, consequency of other legal standards. international treaty arcrime, specific indicia of criminal court cases, practical examples. 14Y1TI Creating Interactive Internet Applications	nd criminal law, in	vestigation of
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23Y1TP Criminal Law in IT and Transportation Introduction of criminal law into legal order, conception of culpability and criminal delict, consequency of other legal standards. international treaty ar 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 demonstration of solutions. in PHP language. 21Y1UL Aircraft Maintenance Aircraft operations and technical operations. Maintenance and work processes. Defects search methods, status check diagnostic tools. Selection and Basic documentation for maintenance. Optimization of time maintenance intervals. Regulation no. 1321/2014 Part 145. Human factors of aircraft maintenance.	KZ Your own application KZ qualification of avi	vestigation of 2 ion programmed 2 ation personnel.
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14Y1W1 Webdesian 1 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 14Y1W2 Webdesign 2 ΚZ 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 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 ΚZ 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. 11Y1ZM Foundation of MATLAB Programming To explain the principle of algorithmization, flow charts, description of MATLAB environment and its settings, MATLAB help, mathematical operators, matrices and elements operations, control flow, inputs and outputs, graphics, optimization and program code debugging. 14Y1ZJ Fundamentals of programming in JAVA ΚZ 2 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, 12Y17U Principles of Urbanism K7 2 Survey on history of city and settlement building. Functional components and their mutual relations (working, living, recreation, transportation). Spacial arrangement of settlements. Types of towns or cities with a certain prevailing function, forms of their development. Brief overview of land-use planning. East-West dichotomy: Prelude to the Cold War Historical prologue, evolution of the "West" and "East" from the 1500s. Focus on the history in the period between 1850 nad 1950. Milestones and continuity of the international relations in the end of 19th century and the beginning of the 20th century. Revolutions, the causes and consequences. Scientific and technological progress, the causes and consequences. Economic and financial history. Social changes. Discussions on texts, sources Vehicle Testing, Legislation and Construction Vehicle, bus and motorbike costruction, aggregate computing, driving resistance, build and parameters of traction, constructional arrangement of personal cars, trucks, buses, motorbikes legislation in the EU and in the world, technical legislation creation, testing methods, vehicle tests, accelerated tests, mathematical modelling in testing. Name of the block: Elective courses

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

Note on the g	jioup.					
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 Drahomír Schmidt (Gar.)	Z	0	0P+2C	Z	V
14DZT	Digital Support for Railway Lines	Z	0	0P+2C	L	V
11SCFZ	Seminar of Physics Old ich Hykš, Zuzana Malá, Tomáš Vít , Jana Kuklová Zuzana Malá Zuzana Malá (Gar.)	Z	0	0P+2C	Z	V
21SLD	Seminar of Air Transport	Z	0	0P+2C	L	V
18SPP	Seminary from Elasticity and Strength Tomáš Doktor, Jan Vy ichl Jan Vy ichl Jan Vy ichl (Gar.)	Z	0	0P+2C	Z	V
18STD	Seminary from Technical Documentation	Z	0	0P+2C	Z	V
18SS	Seminary from Structural Analysis	Z	0	0P+2C	L	V
11SSF	Secondary School Physics Course Zuzana Malá	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

14DPK	Digital Support for Designing of Roads and Highways	Z	0	
Seminars possibilities	of technical processing problems focused on designing of roads and highways.		·	
14DZT	Digital Support for Railway Lines	Z	0	
Seminars possibilities of technical processing problems solved in the field of railway lines.				

11SCFZ	Seminar of Physics	Z	0
Solving problems o	n kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermodynamics.	'	
21SLD	Seminar of Air Transport	Z	0
History, definitions,	terminology, basic rules. VFR / IFR. Basics of aerodynamics. Propulsion of aircraft. Aircraft design. Basics of navigation, radio na	vigation. Weight, b	oalance,
performance. Flight	planning, optimization of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic r	management, grou	ınd handling,
security. Air crew. A	irlines and economics. Space technologies.		
18SPP	Seminary from Elasticity and Strength	Z	0
Excersise for practi	ce. Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of b	eam. Analysis of d	eflection curve
of beam Torsion of	circle cross section. Combined loading. Stability of compressed bar and buckling.		
0. 200 10.0.0 0.			
18STD	Seminary from Technical Documentation	Z	0
18STD		Z nal and geometrica	-
18STD	Seminary from Technical Documentation s, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimension	Z nal and geometrica	-
18STD Technical standards	Seminary from Technical Documentation s, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimension	Z nal and geometrica Z	-
18STD Technical standards arrangement of dra 18SS	Seminary from Technical Documentation s, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimension wing sheets.	Z	al accuracy,
18STD Technical standards arrangement of dra 18SS Examples for practi	Seminary from Technical Documentation s, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimension wing sheets. Seminary from Structural Analysis	Z and simple frame	ol accuracy, Olyork. Application
18STD Technical standards arrangement of dra 18SS Examples for practi of principle of virtue	Seminary from Technical Documentation s, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimension wing sheets. Seminary from Structural Analysis se. General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam	Z and simple frame	ol accuracy, Olyork. Application
18STD Technical standards arrangement of dra 18SS Examples for practi of principle of virtue	Seminary from Technical Documentation s, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimension wing sheets. Seminary from Structural Analysis se. General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam all works for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method	Z and simple frame	ol accuracy, Olyork. Application
18STD Technical standards arrangement of dra 18SS Examples for practi of principle of virtua Geometry of cross 11SSF	Seminary from Technical Documentation s, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimension wing sheets. Seminary from Structural Analysis se. General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam all works for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method sections. Plane fiber polygons.	Z and simple frame	ol accuracy, Olympia vork. Application od of sections.
18STD Technical standards arrangement of dra 18SS Examples for practi of principle of virtua Geometry of cross 11SSF	Seminary from Technical Documentation s, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimension wing sheets. Seminary from Structural Analysis se. General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam all works for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method sections. Plane fiber polygons. Secondary School Physics Course	Z and simple frame	ol accuracy, Olympia vork. Application od of sections.

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

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

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

Credits in the group: 0 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11SEMO	Seminar of Electromagnetic Field and Optics Zuzana Malá	Z	0	0P+2C	L	V

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

	<u> </u>		
11SEMO	Seminar of Electromagnetic Field and Optics	Z	0
Solving problems on ele	ectric and magnetic field, electromagnetic field, optics and basics of solid-state physics.		

Name of the block: Jazyky

Minimal number of credits of the block: 6

The role of the block: J

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

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

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

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

Credits in the group: 6 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
15JZ3F	Foreign Language - French 3 Irena Veselková	Z	3	0P+4C+10B	Z	J
15JZ3I	Foreign Language - Italian 3 Irena Veselková	Z	3	0P+4C+10B	Z	J
15JZ3N	Foreign Language - German 3 Markéta Vojanová, Eva Rezlerová, Martina Navrátilová, Jana Štikarová	Z	3	0P+4C+10B	Z	J
15JZ3R	Foreign Language - Russian 3 Marie Michlová	Z	3	0P+4C+10B	Z	J
15JZ3S	Foreign Language - Spanish 3 Zuzana Krinková	Z	3	0P+4C+10B	Z	J
15JZ4F	Foreign Language - French 4	Z,ZK	3	0P+4C+10B	L	J
15JZ4I	Foreign Language - Italian 4	Z,ZK	3	0P+4C+10B	L	J
15JZ4N	Foreign Language - German 4	Z,ZK	3	0P+4C+10B	L	J

15JZ4R	Foreign Language - Russian 4	Z,ZK	0P+4C+10B	L	J
15JZ4S	Foreign Language - Spanish 4	Z,ZK	0P+4C+10B	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 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 3

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

Foreign Language - German 3 15JZ3N

Ζ 3

Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation. 15JZ3R Foreign Language - Russian 3

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

15JZ3S Foreign Language - Spanish 3 Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation.

Foreign Language - French 4 15JZ4F 7.7K Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation.

15JZ4I Foreign Language - Italian 4 7.7K Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation.

15JZ4N Foreign Language - German 4 Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation.

15JZ4R Foreign Language - Russian 4 Z.ZK Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation.

15JZ4S Z.ZK Foreign Language - Spanish 4 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.

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 no	mbers and its limit. Basic properties of mappings. Function of one real variable, its limit and derivative. Indefinite integral, Newton integi	ral, Riemann integr	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.			
11EMOP	Electromagnetic Field and Optics	Z,ZK	4		
	Electric field. Electric current. Magnetic field. Electromagnetic field. Optics. Basics of solid-state physics.				
11FYZ	Physics	Z,ZK	5		
	Kinematics, dynamics, Newton's laws, force fields, mechanics of continuum, thermodynamics, introduction to electrostatics and electrostatics	ric 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	f the motion, the ve	elocity, and		
	acceleration of a particle moving on a curved path.				
11LA	Linear Algebra	Z,ZK	3		
Vector spaces (line	ar combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and the	r solvability. Deterr	minants and		
	their applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classification.				

11MDSD	Collecting and Processing of Traffic Data	KZ	3
	iples of traffic detection and data collection, specific problems of the field of traffic data. Data preprocessing and analysis for use in a		_
11MSP	Modeling of Systems and Processes	Z,ZK	4
	em, external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of differences.		-
Linear and nonli	inear system, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer function	on. Stability of LTI s	systems.
11SCFZ	Discretization of continuous systems. System interconnection.	Z	0
TISCEZ	Seminar of Physics Solving problems on kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermod	_	0
11SEMO	Seminar of Electromagnetic Field and Optics Solving problems on electric and magnetic field, electromagnetic field, optics and basics of solid-state physics.	Z	0
11SSF	Secondary School Physics Course Basics of kinematics, dynamics, thermodynamics, electric field and magnetic field.	Z	0
11STAT	Statistics	Z,ZK	4
	ty Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Parame	1	netric tests
	Regression and correlation analysis	1	1
11TGA	Graph Theory and its Applications in Transport	Z,ZK	4
1	graph theory, paths in graphs, flows in networks, location problems, design problems on graphs, optimum routing, use of graphs in o		· ·
11X31D	Project 1 DOS	Z	2
11X32D	Project 2 DOS	Z	2
11X33D	Project 3 DOS	Z	4
11Y1BK	Error Detection Codes for Interlocking Systems n and methods for its assuring. Safety codes linear codes, cyclic codes, BCH codes, Reed-Solomon codes. Transmission channels, d	KZ	2
Jaie communication	probability of undetected error. Design and assessment of detection codes; requirements of the European standard EN 501		JOIOH EHUIS
11Y1PV	Parametrical and Multicriterial Programming	KZ	2
	lem of linear programming with a parameter in objective function, on right sides and in the matrix of coeficients of linear constraints. Co	1	I
11Y1SI	Transportation Software Engineering	KZ	2
Basic concepts of so	oftware engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and implement	ntation using forma	l techniques
	and practical usuage.		1
11Y1TG	Graph Theory	KZ	2
•	I terminology of graph theory, graph representation. Problems of graph theory, problem instance. Graph search algorithms, trees, mi ian path, bipartite graph matching, flow networks, circulations, critical path method, traveling salesman problem. Problem of existence a		
patri problem, Eulen	for their solving. Computational complexity, dealing with NP-complete problems, heuristic approach.	ina optimization an	u aigoritriiris
11Y1ZM	Foundation of MATLAB Programming	KZ	2
	ple of algorithmization, flow charts, description of MATLAB environment and its settings, MATLAB help, mathematical operators, mat		_
12DOSI	control flow, inputs and outputs, graphics, optimization and program code debugging.	7.71/	3
	Traffic Surveys and Simulations tion in road transport. Traffic surveys. Automatic traffic counting. Preparation and implementation of traffic survey. Description of indi	Z,ZK	
-	s from real measurements. Methods of data processing and evaluation. Principles of simulation, SW environment for creating traffic		
·	procedure, calibration. Processing of a simple transport model based on real data.		J
12MDE	Transport Models and Transport Excesses	Z,ZK	3
Parameters of the ti	raffic flow and methods for their measurement. Models of the traffic flow, communications load, line and urban systems. Theory of quantum communications load, line and urban systems.	leues, shock wave	s. Quality o
transport and its a	ssessment. Statistical characteristics of transport. Transport excesses, their analysis, the causes, identify and minimize the consequ safety and fluency.	ences. Improving o	of transport
12MKOD	City Rail Transport	Z,ZK	5
-	n rail transport. Tram lines layout and city roads. Tram track geometry parameters. Tram track superstructure. Turnouts and other cor		
stops and turn space	 Underground and its basic characteristics. Underground nets in the world and undeground history in Prague. Underground track geon track superstructure and substructure. Underground stations. Suburban rail transport. 	netry parameters. L	Inderground
12POSD	Assessment of Transport Structures	KZ	3
•	ical context, impact and variants, analysis of individual phases of EIA process, SEA, legislative framework in the Czech Republic, E participation, process in practice. Methods of assessing the effects of transport structures on the environment. SWOT analysis. Multic		
400004	of transport structures, TUKP method. Risk analysis. Landscape.	1/7	
12PPOK	Designing Roads, Highways and Motorways whership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standare	KZ	3
	iwhership, maintenance, management and categorization of roads and nighways. Curve and transition curve. Sinuosity and standard stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safe intersections.	•	
12PRMK	Urban Road Traffic and Design	Z,ZK	5
	an road, elements and routes for traffic, pedestrian and cycling transport, projection of intersections, traffic lights and its traffic safety p		1
1 32	of traffic, precaution for blind & partially-sighted, parking, traffic area, induction of traffic, organization and regulation of traffic	•	,
12PUSS	Organization Disposition of Railway Stations	KZ	3
	n. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zor	1	ion yards.
	ve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic	-	ı
12SDK	Highways, Motorways and Intersections	Z,ZK	4
	lys network, transport output. Types of direction curves. Hairpin bend. Stopping sight distance and overtaking sight distance. Levels of the stopping sight distance and overtaking sight distance. Levels of the stopping sight distance and overtaking sight distance. Structures of interpretations. Structures of interpretations of the structure of		-
or crossroads and	I intersections. Crossroads. Roundabouts. Intersections. Special types of junctions. Capacity of crossroads and intersections. Structumotorways. Road engineering structures. Assessment of route alternatives.	ire or pavement of	roads and
12VHD	Public Transport	Z,ZK	5
	Fublic Transport blic transport, transport research, evaluation, planning of lines routes and territory operation, planning of operation parameters, prep		l .
	ion-technology and operation-economically conditions of planning of operation conceptions, planning of operation conception, planing	•	
	prepare of infrastrukture (route, stops), preference of public transport, financing.		
12X31D	Project 1 DOS	Z	2

40\/00D	D : 40 DOO		
12X32D	Project 2 DOS	Z Z	4
12X33D 12Y1AE	Project 3 DOS	KZ	2
	Applied Ecology ecological concepts and principles, ecosystem, ecological factors, energy flow through the ecosystem. Application of knowledge with		_
	ape ecology - origin and historical development. Landscape definition and classification. Success. Traffic constructions in the country protection. Applied ecology.		
12Y1C1	Designing Roads in Civil 3D I	KZ	2
The course is dev	voted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go throug	h the complete de	
particular linear b	uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The explanation of the traffic building design in the real-life profession.	course also inclu	des a basic
12Y1C2	Designing Roads in Civil 3D II	KZ	2
	voted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go throug uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The improved and developed. Students learn to design intersections.		-
12Y1DS	Project Documentation in Practice	KZ	2
	ation creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process. creation of some project documentation parts.	1	1
12Y1HD	Traffic Noise	KZ	2
Acoustic introduction	on, basic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regulation	s. Creation acous	tic climate ir
area, principles	of urban acoustic, noise transmission, soundproofing. Types of noise sources in area. Determination of acoustic situation in the area computing and measurement of transport noise. Acoustic studies, measuring protocol.	of interest. Metho	dology of
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 logis	tic centres.
12Y1KP Fundamentals of	Communication and Promotion of Transport Projects Public Relations and the power of public opinion. Work and tasks of PR department and press spokesperson. Communication with the	KZ ne media, the publ	2 lic on social
networks and bey	ond. Communication strategy of transport projects. Systematic goodwill building. Crisis situations in communication and preparation influence of political marketing and political PR on transport projects. Lobbing.	for crisis communi	ication. The
12Y1PC	Pedestrian and Cycling Transport	KZ	2
Routes for pedestri	ans. Pedestrian crossings. Modifications for blind, dim-sighted and disabled people. Design of cycle routes network. Ways of cycle route	e layout and design	n parameter
for cyclists. Separa	ation of cyclists from other transport modes. Cycle tracks and its design - one way streets, reserved traffic lanes, bus stops, crossing	s with other transp	oort modes,
40)/455	crossroads. Traffic signs and road marking for cyclists.	1/7	
12Y1PD	Assessment of Transport Structures	KZ	2
	sport structures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibilities o s on the landscape. Rating fragmentation and landscape connectivity in the preparation of linear structures. Practical examples of ass	-	
iransport structures	the environment.	sessifient of traine	bulluli igs 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. Zor	1	_
Reser	ve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic	c railway network.	
12Y1RU	Railway Lines Reconstruction	KZ	2
Keeping railway lii	ne operational, maintaining lines and stations, geometrical alignment of railway line, vehicles for railway superstructure and substruct and organising possesions, preparation of railway lines reconstruction and maintenance, process of ralway line reconstructi		scheduling
12Y1SU	Road Management and Maintenance	KZ	2
Getting familiar w	ith ownership of roads in the Czech Republic and the administration of the road at the state and county level. It is presented develop	ment of road netw	vork, short,
medium and long-te	erm strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and repai	r methods are disc	cussed in the
10)(1)(D	classroom as well as investment activity in highway engineering.	1.7	
12Y1VR	Public Transport in Cities and Regions	KZ	2
	political pillars of public transport. Accessibility of public transport. Transport demand management and directional coordination of line arameters and transport variations. Types of lines according to their routing and basic operating parameters. Time coordination of line 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). Spacia	1	1
	Types of towns or cities with a certain prevailing function, forms of their development. Brief overview of land-use planning.		
12ZAR	Introduction to Architectural Design	Z	3
Urbanism and	architecture of traffic systems. Bus and trolley-bus transport. Tramway and town tracks. Design of vehicles. Subway. Railway transpo	rt. Railway station	s. Local
	communications. International airports.		_
12ZELP	Railway Operation	Z,ZK	4
Legislation in raily	vay transport. Railway vehicles. Railway signals and signal devices. Railway traffic organisation and operation. Simplified railway traff brakes. Railway vehicles marking. Operation intervals. Theoretical graph of train running.	ic operation. Railw	ay venicies
12ZTS	Railway Lines and Stations	Z,ZK	4
Rail transport. Ra	ailway track geometry parameters. Route layout of railway lines. Railway line construction - railway substructure and superstructure. S		ilway lines.
4677/5	Railway control systems in relation to infrastructure. Operating and carriage points. Railway lines net and category. Traction in rail to		T -
12ZYDI	Introduction to Transportation Engineering on in land-use planning. Basic terms in transportation engineering. Traffic survey and traffic prognesis. Introduction to topic of roads in	Z,ZK	2
Note of transportati	on in land-use planning. Basic terms in transportation engineering. Traffic survey and traffic prognosis. Introduction to topic of roads, property impacts of transportation to environment and safety.	rubiic mass transp	ori. Negativi
14ASD	Algorithm and Data Structures	KZ	3
	Algorithm and Data Structures ze problems, design a theoretical solution to a given problem and write the resulting algorithm using flowcharts, practice reading algorithm.	1	_
	lean algebra to construct constraints in algorithms. Students will be introduced to the basics of the Python programming language - will learn to work with variables of basic data types (integer, floating point and string) and the list data structure in their programming language.	variable, branching	-
14DATS	Database Systems	KZ	2
	of database systems, conceptual model, relational data model, the principles of normal forms, relational database design, security an queries, relational algebra, SQL language, client / server, multilayer architectures, distributed database systems. Access to data via	nd integrity of data	1
	quonto, rotational algebra, one language, ellent / server, mullilayer are literatures, uistributed database systems. Access to data vid	** * * * * * * * * * * * * * * * *	

14DPK	Digital Support for Designing of Roads and Highways Seminars possibilities of technical processing problems focused on designing of roads and highways.	Z	0
14DZT	Digital Support for Railway Lines Seminars possibilities of technical processing problems solved in the field of railway lines.	Z	0
14KSP	Constructing with Computer Aid	KZ	2
-	etermination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic common work		_
	ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting possibi		
	profiles, drawings with raster foundaments).		
14PODP	Computer Aid of Transportation Projecting	KZ	3
	ation for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, data		nced bloc
odification (attributes	relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transition	curve, cross-and	longitudi
	section). Basics of 3D modelling.		
14PRG	Programming	KZ	2
_	ming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python program		-
ere so that the partici	pant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and search	ning, tupies, sets,	dictionari
14V04D	working with date and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML).	7	
14X31D	Project 1 DOS	Z	2
14X32D	Project 2 DOS	Z	2
14X33D	Project 3 DOS	Z	4
14Y1AV	Animation and Visualization	KZ	2
	s and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and Spa		-
	endering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animation		
14Y1BE	Barrierless Transport accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students v	KZ	2
	ent roads, railway stations, public transport stops, terminal buildings, vehicles, public transport, information and orientation systems is		
Dameness environm	Theoretical knowledge will be supplemented by practical examples.	and transportation	rtecimoic
14Y1BM	Biometric Methods	KZ	2
l l	authentication methods, principles and performance measurement of biometric systems, overview of biometric technologies, hai		I
	od, 2D and 3D face recognition, vein patterns on the wrist, ear biometrics, fingerprint recognition, skin spectroscopy, behavioral m		-
J	in transport applications, safety and risks of biometric technologies.		
14Y1HW	Computer Hardware	KZ	2
Computer architectu	re, basics of logical circuits design and their realization using FPGA. In detail, description of computer architecture and separate p	arts designing - c	ontrollers
	arithmetic and logical units, I/O subsystem.		
14Y1MP	Modeling Complex Assemblies and Models in Parametric Modeller	KZ	2
Assemblies prograr	nming - tools and methodology of working subassemblies and assemblies, sheet metal parts modelling, welded assemblies, pipel	ines, and distribut	ion lines.
	Photorealistic output rendering - physical and material properties, lighting sources. MKP - visual example.		
14Y1OJ	Object - oriented programming in JAVA	KZ	2
	apsulation. Classes. Attributes. Access modifiers. Methods and overloading. Special methods (constructors, getters / setters). Bar	-	
	Polymorphism. Statics, constants, interfaces, abstract classes, enum, packages, exceptions, collections, generics, lambda expre		
14Y1OP	Operating System	KZ	2
	ttion GNU/Linux OS. X-window system. Rights management - users and groups, ACL rights. Filesystems and attributes. Programs ole programs / commands. Config files. SW management, package systems. Programs in graphic shell - text, spreadsheet, graph	•	
Turnevers. Dasic cons	communication. Services management. Safe and secure configuration of OS. Remote administration.	ic editors, sourid,	viueo ani
14Y1P2	Computer Aid of Transportation Projecting 2	KZ	2
	ation for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, data		_
• • • • • • • • • • • • • • • • • • • •	relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transition		nced blo
	, , , , , , , , , , , , , , , , , , , ,	• ,	
14V1DA	section). Basics of 3D modelling.	curve, cross-and	longitudi
14Y1PA	section). Basics of 3D modelling. 3D Modeling in AutoCAD	curve, cross-and	longitudi 2
I	section). Basics of 3D modelling. 3D Modeling in AutoCAD netric modeller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup creation, object of	curve, cross-and	longitudi 2
Work in 3D non-parai	section). Basics of 3D modelling. 3D Modeling in AutoCAD netric 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.	KZ data creation, wor	longitudi 2 k with da
Work in 3D non-parai	section). Basics of 3D modelling. 3D Modeling in AutoCAD netric 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. Computer Graphics	KZ data creation, wor	longitudi 2 k with da
Work in 3D non-paral 14Y1PG Basic formats of grap	section). Basics of 3D modelling. 3D Modeling in AutoCAD netric modeller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup creation, object of connected with external database. Basic definition of work with lights, materials and reflexes. Models presentation. Computer Graphics hic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with editing	KZ data creation, wor KZ ng programs (with	longitudi 2 k with da 2
Work in 3D non-paral 14Y1PG Basic formats of grap	section). Basics of 3D modelling. 3D Modeling in AutoCAD netric modeller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup creation, object of connected with external database. Basic definition of work with lights, materials and reflexes. Models presentation. Computer Graphics hic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with editing evel scope) using layers, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics	KZ data creation, wor KZ ng programs (with a cards.	longitudi 2 k with da 2 in the use
Work in 3D non-paral 14Y1PG Basic formats of grap 14Y1PI	section). Basics of 3D modelling. 3D Modeling in AutoCAD netric modeller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup creation, object of connected with external database. Basic definition of work with lights, materials and reflexes. Models presentation. Computer Graphics hic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with editine evel scope) using layers, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics Corporate Information System	KZ data creation, wor KZ ng programs (with a cards. KZ	longitudi 2 k with da 2 in the use
Mork in 3D non-paral 14Y1PG Basic formats of grap 14Y1PI Data-information-ki	section). Basics of 3D modelling. 3D Modeling in AutoCAD netric modeller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup creation, object of connected with external database. Basic definition of work with lights, materials and reflexes. Models presentation. Computer Graphics hic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with editing evel scope) using layers, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics	KZ data creation, wor KZ ng programs (with a cards. KZ ticular information	longitudi 2 k with da 2 in the use 2 n system
14Y1PG Basic formats of grap 14Y1PI Data-information-k	section). Basics of 3D modelling. 3D Modeling in AutoCAD netric modeller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup creation, object of connected with external database. Basic definition of work with lights, materials and reflexes. Models presentation. Computer Graphics hic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with editing evel scope) using layers, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics Corporate Information System nowledge, components of information system, syntatic and semantic sense of data, structure of corporate information system, par	KZ data creation, wor KZ ng programs (with a cards. KZ ticular information	longitudi 2 k with da 2 in the use 2 n system
14Y1PG Basic formats of grap 14Y1PI Data-information-k	section). Basics of 3D modelling. 3D Modeling in AutoCAD netric modeller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup creation, object of connected with external database. Basic definition of work with lights, materials and reflexes. Models presentation. Computer Graphics hic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with editing evel scope) using layers, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics Corporate Information System nowledge, components of information system, syntatic and semantic sense of data, structure of corporate information system, particularly control information politic and information control, risks of information system operation, legal environment of	KZ data creation, wor KZ ng programs (with a cards. KZ ticular information	longitudi 2 k with da 2 in the use 2 n system
Nork in 3D non-paral 14Y1PG Basic formats of grap 14Y1PI Data-information-kiersonalistic, producti 14Y1PJ programming langua	section). Basics of 3D modelling. 3D Modeling in AutoCAD netric modeller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup creation, object of connected with external database. Basic definition of work with lights, materials and reflexes. Models presentation. Computer Graphics hic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with editing evel scope) using layers, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics Corporate Information System nowledge, components of information system, syntatic and semantic sense of data, structure of corporate information system, particularly, corporate information politic and information control, risks of information system operation, legal environment of state information system, information system security, data protection, safety politics. C Programming Language ge. Preprocessor, basics of the C language (data types, syntax, commands), functions, pointes, dynamical memory allocation, strin	KZ data creation, wor KZ ng programs (with s cards. KZ rticular informatior information system KZ g, files, structures	2 k with da 2 in the use 2 a system m operati
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14Y1VM	Development of Applications for Mobile Devices	KZ	2
Object oriented p	programming, Java programming language, development environment, operating system Android, development application - widgets, permissions, services, GUI.	containers, thread	ds, menu,
1.4\/.1\/./1		KZ	2
14Y1W1	Webdesign 1 the basics of communication HTTP, URL and addressing, markup languages HTML and XHTML, HTML tags, rules of web accessibility		l
	, 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
	advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, web ser		l .
	directives. Topics will be practiced on practical examples.		Ü
14Y1WG	Webdesign	KZ	2
Students will lear	n the basics of HTTP communication, URL and addressing, HTML5 markup language, advanced CSS3 techniques, accessible and u	ısable web rules, r	esponsive
	webdesign, content management systems, web server installation + configuration directives. The subject matter will be trained on e	xamples.	1
14Y1ZJ	Fundamentals of programming in JAVA	KZ	2
	Java SE Platform. IDE Installation and First Project. Comments. Variables and Type System. Operators. User Input and Parsing. Chair		
Chain and Mathe	ematical Methods. Terms. Relational Operators and Switches. Cycles for, while, foreach. Field - declaration, initialization, methods for f	ield work. ASCII. F	functions,
4.42/4.71.4	parameters, return value, recursion. Program creation.	1/7	0
14Y1ZM	Fundamentals of parametric and adaptive modeling roducts and parts creation. Sketch drawing by help of geometric relations, parametric dimensions, creation of adaptive models from 2	KZ Dakatahan Impar	2
basics of work at p	from and to another systems. Fundamentals of assemblies creation.	D sketches, impor	t and export
14ZDA	Data Processing	Z	3
	para i rocessing and analysis tools. Practical part of the training - introduction to the working environment, applied examples of data proce	_	-
	ods of presentation of the results. Seminar papers on open data. Consultation hours for seminar papers. Seminar paper submission a		-,
15DPLG	Transportation Psychology	Z	2
	pgy and its basic concepts. Information intake, decision-making and behaviour. Performance. Engineering psychology and vehicle const	ruction. Psycholog	l
of trave	el route and traffic conditions, accidents and traffic incidents. Selection and training of the staff. Work and leisure. Age as a factor in tra-	ansport operation.	
15JZ1A	Foreign Language - English 1	Z	3
Grammatical Struct	tures and Style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and conversation to the conversation topics relating to transportation sciences.		Elementary
	stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles of		
15JZ2A	Foreign Language - English 2	Z,ZK	3
Grammatical struct	ures and style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and cor stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles of		Elementary
15JZ3F		7	3
	Foreign Language - French 3 istics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la	_	_
· · · · · · · · · · · · · · · · · · ·	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v		_
	features. Practice of oral and written presentation.	(, , , , , , , , , , , , , , , , , , ,	
15JZ3I	Foreign Language - Italian 3	Z	3
	istics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la	anguage structure	knowledge
and perceptive and	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v	vith (professional)	text and its
	features. Practice of oral and written presentation.		
15JZ3N	Foreign Language - German 3	Z	3
•	istics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v		•
and perceptive and	features. Practice of oral and written presentation.	viti (professional)	text and its
15JZ3R	Foreign Language - Russian 3	7	3
	istics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la	_	_
-	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v		_
	features. Practice of oral and written presentation.		
15JZ3S	Foreign Language - Spanish 3	Z	3
•	istics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la		•
and perceptive an	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v	vith (professional)	text and its
45.17.45	features. Practice of oral and written presentation.	7 714	
15JZ4F	Foreign Language - French 4	Z,ZK	3
	istics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v		_
and perceptive an	features. Practice of oral and written presentation.	vitii (prolessional)	text and its
15JZ4I	Foreign Language - Italian 4	Z,ZK	3
	istics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la		-
	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v		_
	features. Practice of oral and written presentation.		
15JZ4N	Foreign Language - German 4	Z,ZK	3
	istics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la		
and perceptive and	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v	vith (professional)	text and its
45 1745	features. Practice of oral and written presentation.	7 71/	_
15JZ4R	Foreign Language - Russian 4	Z,ZK	knowledge
	istics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v		_
and perceptive dif	features. Practice of oral and written presentation.	THE (PROTESSIONAL)	ioni ariu ilə
15JZ4S	Foreign Language - Spanish 4	Z,ZK	3
	istics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la	,	_
	istics. Selection of conversation and professional topics based on the language level and study locus at the ractity. Improvement of it	anguage su uciure	
and perceptive an	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v		_
and perceptive and			_

15X31D	Project 1 DOS	Z	2
15X32D	Project 2 DOS	Z	2
15X33D	Project 3 DOS	Z	4
15Y1BO	Work Safety and Health Protection in Transportation	KZ	2
undamental legislative	e, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation. He	ealth protection p	rogramme
	health insurance of home and foreign business trips, statistics, working practice.		_
15Y1DZ	History of Railway	KZ	2
•	steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repu		
	development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connection railway accidents, railway junctions. Excursions and projections.		
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. Lit	-	-
goals. Europe after Hit	tler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and it: New quality of French-German relationship - a driving power of starting European integration.	s consequences	tor Europe
15Y1FD	French Area Studies and Transportation	KZ	2
	nd regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air traff		1
	society and culture. Current political system. System of education, studying in France. Selected authors of French literature. Frence	-	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
15Y1HD	History of City Mass Transport	KZ	2
	nsport in the world, development of tram, bus and trolley-bus systems. History of transport networks in the world, current trends a		1
	systems. History of city transport in Prague and Brno. History of tram, bus and trolley-bus operation systems in the Czech Repub	•	
15Y1HE	Work Hygiene and Ergonomics in Traffic	KZ	2
-	ccupational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of these factors.		1
-	of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technology to po		
	Practical examples from the field of transportation; relevant legislature.		
15Y1HL	History of Civil Aviation	KZ	2
eginnings of flying, de	velopment of aircrafts lighter than air. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of air	rports in the Cze	ch Republ
World airports. Famou	us aviators. Helicopters. CSA airplanes. Development of aircrafts in Czechoslovakia between the years 1945-1989. Classic era of	aviation. Golden	era of civ
	aviation. Modern era of civil aviation. Airline companies. Supersonic flying.		
15Y1MK	Modern History in Context: Every Day Life and Transport	KZ	2
·	Historical overview of modern history of every day life, science, technology and transport in a wider context.		
15Y1NE	German in the Economy and Society	KZ	2
Recent economic and	social issues of German speaking countries and of the EU. Reading and listening of texts. Lexical, grammatical and semantic and	alysis of texts. Di	scussion c
	selected topics.		
15Y1ZV	East-West dichotomy: Prelude to the Cold War	KZ	2
storical prologue avol	lution of the "West" and "East" from the 1500s. Focus on the history in the period between 1850 nad 1950. Milestones and continuit		
	• • •	•	
	tury and the beginning of the 20th century. Revolutions, the causes and consequences. Scientific and technological progress, the	•	
n the end of 19th cent	tury 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.	causes and con	sequences
n the end of 19th cent	tury 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. Vehicle Technology	causes and con	sequences
n the end of 19th cent	tury 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. Vehicle Technology ature in transportation technology. Vehicle in legislation. Design. Operation. Influence on environment. Vehicle and ecology. Traction	zauses and con Z,ZK n engine charact	sequences
n the end of 19th cent 16DOKY Technical nomencla	tury 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. Vehicle Technology atture in transportation technology. Vehicle in legislation. Design. Operation. Influence on environment. Vehicle and ecology. Tractio combustion engines, electric engines, change of energy principles. Powertrain construction. Power transmission. Brake system	Z,ZK n engine characters.	5 teristics -
16DOKY Technical nomencla	tury 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. Vehicle Technology atture in transportation technology. Vehicle in legislation. Design. Operation. Influence on environment. Vehicle and ecology. Traction combustion engines, electric engines, change of energy principles. Powertrain construction. Power transmission. Brake system Vehicle Dynamics	Z,ZK n engine characters. Z,ZK	5 teristics -
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16DOKY Technical nomencla 16DYJV pplication of mechanic	tury 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. Vehicle Technology Iture in transportation technology. Vehicle in legislation. Design. Operation. Influence on environment. Vehicle and ecology. Traction combustion engines, electric engines, change of energy principles. Powertrain construction. Power transmission. Brake system Vehicle Dynamics Is. Wheel and axle suspension mechanism. Wheel to road positioning characteristics. Wheel - road contact. Skid and its characteristion. Vertical dynamics, spring suspension, driving characteristics. Directional dynamics, gyroscopical characteristics. Driving state forces. Driving and feedback. ABS, ESP.	Z,ZK n engine charact ns. Z,ZK ristics. Longitudir bility conditions.	5 teristics - 5 nal dynami
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16Y1SO	Strategy and innovation in mobility	KZ	2
	novation, definition. Innovation strategy. Innovation life cycle and ecosystem, main sources and funding opportunities. Successful innovation		
co-financing, evalu	ation. Sprint method and its use. Innovative business model - main patterns and examples, design, strategy, processes and outlook (l	ousiness plan and	possibilities
40)/4)/T	of use). Creating an innovation strategy. Customer and value map, design and testing.	1/7	
16Y1VT	Development in Railroad Vehicles	KZ	2
Railload verlicles	s traction. Railroad vehicle parametres regulation. Control and driving of railroad vehicles. Importance in heavy duty and personal trar assesment. New materials in design. International standardization.	isportation. Critica	Situation
16Y1ZG	Introduction into Applied Computer Graphics	KZ	2
	s, division and applications with emphasis on transport, including development and research. Colours, colour perception, colour sche		1
	on, elementary algorithms for graphic data workout. Visualisation principles and tasks, technics, graphics and visualisation HW basic		-
3	graphics software.		
16Y1ZL	Vehicle Testing, Legislation and Construction	KZ	2
	otorbike costruction, aggregate computing, driving resistance, build and parameters of traction, constructional arrangement of personal of	ars, trucks, buses,	motorbikes,
legi	slation in the EU and in the world, technical legislation creation, testing methods, vehicle tests, accelerated tests, mathematical mode	elling in testing.	
17FID	Financing and Investment in Transport	Z,ZK	4
Sources of financin	ng of transport infrastructure, the role of public administration in the financing and realization of investment in transport, the investmen	t project project cy	cle, subsidy
	programs and their rules, competition, effectiveness and efficiency of spending public funds, evaluation systems of public projects and	· -	
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 usi		
17X31D	Project 1 DOS	Z	2
17X32D	Project 21 DOS	Z	2
17X33D	Project 3 DOS	Z	4
17Y1EV	Public Sector Economy	KZ	2
	ncial theory of public sector, public choice theory, externalites, decisions about public finance allocation, economic assesment of public		-
tax system of the C	R, state budget, management of public projects a their economic efficiency assessment, way of elaboration of PPP projects, funding from	om EU funds, prog	ram HDM-4.
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 trans	sport process pass	sengers and
	air cargo. Information systems in air transport. Global distribution systems.		
17Y1MD	Marketing in Transportation	KZ	2
General principles	of marketing applied to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transport a	na the resulting al	merences in
47/405	the application of marketing.	KZ	
17Y10F	Personal Finance (budget, financing of basic living needs), debt (loans and credits, payment instruments, interest and fees, debt trap), financing of hous		2
	financing), savings and investments (investment horizon, return, risk, investment strategy), insurance (insurance types, suitability and		
concurrer round, re	(retirement savings and insurance).	adoquaoy), occur	ig the latere
17Y1PM	Personnel Management	KZ	2
	ces, work group, man as personality, planning, choice, evaluation and education of human sources, work adaptation, teamwork, inter		1
17Y1SK	Urban and Regional Rail Transport Systems	KZ	2
	transport demand, modal-split, distribution of passenger flows on public regional transport lines. Optimization of line management, lines.		1
evaluation of the	e timetable. Vehicle circulation creation. Optimizing driver shifts and arranging them in turnus. Effects of barrier-free and public transp	ort preferences. Th	ne role of
	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	an resources plan	ning, culture
	of the organization.		
17Y1ST	Titan Simulation	KZ	2
	gement game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same produ		
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
1000///	of financial corporate reports and they use this information for other business decisions.	7 71/	2
18DYKS	Dynamics of Structures and Systems ns with multiple degrees of freedom. Natural modes and natural frequencies. Method of stiffness constants, method of elastic constan	Z,ZK	3
	nuously distributed mass. Matrix form of equations of vibration. Finite element method in dynamics of structures. Solving vibrations by s		
Cyclec mar corn	Subspace iteration methods. Introduction to nonlinear vibrations.	apo. poolo oa	
18KIDY	Kinematics and Dynamics	Z,ZK	4
	ng a line and a curve. Kinematics of rigid body. Kinematics of the point mass and the system of mass points. Dynamics of a mass poin		I
equation of motion	on. Method of Newton. D'Alembert principle. Free and forced vibration with one degree of freedom. Viscous damping. Impact theory. In	ntroduction to the	solution of
	vibration with two degrees of freedom.		
18MECK	Mechanics of Constructions	KZ	3
Energetic solution	of elastic beam. Solution of statically indeterminate systems - force and deformation method. Stiffness and compliance matrix of a sys	stem. Finite differe	nce method.
Hist	tory and fundamentals of structural design. Characteristics of steel, design of steel structures. Introduction to mathematical theory of	elasticity in 3D.	
18MTY	Materials Science and Engineering	Z,ZK	3
	tterials science and engineering explains mechanical properties of structural materials based on their bonding forces and microstructu		
is paid to metals as	s the most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and con	nposites. Attention	ıs also paid
405 !! !!	to degradation processes in materials, to defectoscopy and to main mechanical tests.		
18NUMM	Numerical Methods in Mechanics	KZ	3
	est used numerical methods in structural mechanics. Central difference method, finite element method, boundary element method. Tir	=	
JUNETHES. FIHILE BI	lement method - derivation of the basic equations. Stiffness matrix, mass matrix, damping matrix at element level and structural level. of algebraic equations. Numerical integration.	INGUIOUS IOI SOIVII	ng ayalellia
18PZP	Elasticity and Strength	Z,ZK	3
	ression. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolted a		
	Analysis of deflection curve of beams. Torsion of circular cross sections. Combined loading. Stability.		

18SAT	Structural Analysis	Z,ZK	4
=	of forces in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determinate		-
Principle of virtual w	vork. Kinematic method for calculation of reactions of statically determinate systems. Determination of axial forces in truss constructions.	Cross-sectional ch	aracteristics
40CDD	of planar shapes. Fiber polygons and chains.	7	
18SPP	Seminary from Elasticity and Strength	Z	0
Excersise for pract	ice. Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling.	n. Analysis of defle	ection curve
18SS		7	0
	Seminary from Structural Analysis se. General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and	_	
	al works for calculation of reactions of staticaly determinate systems. Determination of axial forces in truss construction - method of ju	•	
or principle of virta	Geometry of cross sections. Plane fiber polygons.		or occuone.
18STD	Seminary from Technical Documentation	Z	0
	rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensiona	-	
	arrangement of drawing sheets.	J	•
18TED	Technical Documentation	KZ	2
	rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensiona		accuracy,
	arrangement of drawing sheets.		
18X31D	Project 1 DOS	Z	2
18X32D	Project 2 DOS	Z	2
18X33D	Project 3 DOS	Z	4
18Y1AM	Anatomy, Mobility and Safety of Man	KZ	2
	natomical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circulation		
and biomechanics	of muscular-skeletal system. Injury of human organs and musculo-skeletal system during traffic accidents. Mobility of ill and injured m	nan and his treatm	ent. Human
	joint prostheses. Protective means and traffic safety regulations.		
18Y1EM	Experimental Methods in Mechanics	KZ	2
The purpose and r	ole of experimental mechanics. Sensors for mechanical testing. Overview of experimental methods. Destructive and non-destructive t	testing of materials	s. Design of
experimental pro-	cedures and sample preparation. Tensile and bending tests. Electrical resistance strain gages. Optical based strain measurement. Fat	tigue and lifetime p	orediction.
	Instrumented hardness testing. Introduction to electron microscopy. Errors in measurement.		
18Y1MT	Engineering Materials	KZ	2
=	ew of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers and	· ·	ntion is paid
	ogical materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's		
18Y1PS	Computer Simulations in Mechanics	KZ	2
•	view of tools for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model developmen	-	
from other CAE sys	stems. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary conditions and	application of the	load. Basic
40\/41.11/	tasks of structural and modal analysis. Introduction to complex nonlinear problems.	1/7	
18Y1UK	Introduction of Rail Vehicles cs and parameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion tra	KZ	2 Polling and
	tal running resistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehicle - h		- 1
track resistance. To	and electric drive. Design concept rail vehicles and drive of wheel set.	ly di officeriariie, riy	aroayriariilo
20SYSA	Systems Analysis	Z,ZK	5
	em sciences, system viewpoint, terminology, typical system analysis tasks, system identification, system interface and interface tasks,		-
and its analysis, s	strong functions and processes, genetic code, system identity, system architecture. Tools for system analysis - Petri nets, decision tab	les, algorithms for	structural
	tasks. Soft and hard systems, methods for soft system analysis.		
20UITS	Introduction to Intelligent Transport Systems	Z,ZK	7
Terminology and leg	gislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamentals of inform	mation and telecor	nmunication
systems for ITS. Pr	inciples and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real examples	of possible applica	ations of the
	principles of ITS.		
20X31D	Project 1 DOS	Z	2
20X32D	Project 2 DOS	Z	2
20X33D	Project 3 DOS	Z	4
20Y1AE	Applied Electronics	KZ	2
Basic electronic s	emiconductor components, their principles, characteristics and typical connection diagrams. Semiconductor PN junction diodes, trans		
amplifiers, basic lo	ogic gates. Functions of basic electronic circuits and methods for their designs (rectifiers, voltage regulator with Zener diode, transisto	or as an amplifier, o	operational
	amplifier as an inverting and noninverting amplifier).		
20Y1AF	Alternative Forms of Transportation Project Financing	KZ	2
	such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt paym		
the final debtor is n	ot a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of secu	urities as an altern	ative source
	of transportation and telecomunication projects.		
20Y1EA	Environmental Aspects of Transport	KZ	2
-	where, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilistic		
	pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transport		
20Y1EK	Qualification in Electrical Engineering	KZ	2
· ·	e with measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock hazard, s	=	- 1
voitage, maximum	allowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legislatic	יו, standards and	regulations
20V4KD	in relation to health and safety and electrical engineering.	V7	2
20Y1KP Motivation prioritie	Communication and presentation skills s and their fulfillment, current communication networks, work with various sources, formal requirements of emails and final theses, b	KZ asic typology of pe	2 ersonalities
-	is and their runninent, current communication networks, work war various sources, formal requirements of emails and final trieses, but intelligence, manipulation and way of working with it, coping with stressful situations, formal requirements of presentations, way		
	presentation, presentation skills, presentation skills in online environment.		

20Y1LN Description and e	Location and Navigation examples of road networks, localization on the network. Routing algorithms, their properties and implementation. Description and exa	KZ mples of datasets	2 for finding
·	transport connections, routing algorithms, their properties and implementation.		
20Y1OI	Fare Collection and Information Systems	KZ	2
•	stems in public transport and their components (on-board units, validators, turnstiles,). Information systems and their components nels) and operators (cycles, location or current delay of vehicles,). The issue of tariff systems. Other examples of clearance systems.	•	es, maps,
20Y1OK	Road Lighting	KZ	2
	ities and terms, street lighting components (luminaires, control cabinets for street lighting, street lighting cables), characteristics of lumin	-	
light distribution),	standards, measurement of illuminance and luminance in road lighting, tunnels, conceptual approach to street lighting design, lightin Relux, street lighting control systems.	g calculations in D	IALux and
20Y1PK	Product Quality Management Processes	KZ	2
	of organization management. Management systems and international standards; quality management systems. Quality products, pro	1	
of standards for sys	tems management, management principles. Principles of process management, monitoring and measurement systems management. U	niform framework o	of standards
	for systems management. Process management principles. Metrology and testing. Product certification.		
20Y1SC	Sensors and Actuators	KZ	2
Principles of sensor	s and actuators. Basics of measuring theory and actuating influence. The respective technologies and construction principles. Sensors of state (temperature, humidity), chemical and particle flow values. Electrical, pneumatic and hydraulic actuators and solid phase ele		o-magnetic,
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		-
•	ht planning, optimization of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic ma		
	security. Air crew. Airlines and economics. Space technologies.		
21X31D	Project 1 DOS	Z	2
21X32D	Project 2 DOS	Z	2
21X33D	Project 3 DOS	Z	4
21Y1AM	Aeronautical Information Management (AIM)	KZ	2
	c overview of AIS and AIM. Transition from AIS to AIM. Regulatory base. Provision of AIS/AIM in the Czech Rep. AIP (Aeronautical In		
the Gzech Rep. At	RAC 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).	горена Аю Бакава	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. Ope		
	procedures. Practical flights.		
21Y1LJ	Aeronautical Radio and Flight Instruments	KZ	2
	story of aircraft instrumentation, aerometric instrumentation, Earth magnetism, aircraft electric equipment, gyroscopic instrumentation		
	ft equipment, engine instrumentation, warning and recording systems, instrumentation operational requirements, radiocommunicatio		
21Y1LS Airspace structure i	Air Traffic Services in Czech Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, APP	ACC control His	2 atory of ATS
mapace structure i	at USA and Czechoslovakia. ATS - Model of financing. Training System of Air Traffic Controllers. Future development of ATS		nory or Aro
21Y1MP	Matlab for project-oriented study	KZ	2
The subject's syllal	bus is focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exercises	will be prepared a	ccording to
	les, based on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improveme		
21Y1OH	Airline Business and Operations	KZ	2
•	s a comprehensive view of the commercial, operational and transportation activities of air transport companies. It focuses on the organiz heir strategy, economic and operational indicators. It introduces students in detail to operational processes and the essentials of transp		· ·
vallede deposits of t	a basic view of the economic aspects of air transport.	orialion processes	providos
21Y1PA	Air Traffic Control Operating Procedures	KZ	2
	on the ATC simulator with the following focus - getting familiar with the simulation environment, acquiring basic habits, aircraft identif	· ·	- 1
level changes, ATC	C clearance, use of RNAV points. Practical exercises focused on the basis of vectoring, timely application of vertical spacing, EST and	d REV message tra	nsmission.
24V4DC	Exercises in the APPROACH airspace, arrivals, departures and conflict solutions.	V7	
21Y1PC	ATC Procedures and Activities procedures, basics of communication and phraseology, aircraft identification, spacing and traffic coordination. In addition, the course of	KZ	2 control at
-	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		
environment of hum	nan resource management. Human resource planning. Search, recruitment and selection of employees. Motivation, evaluation and ren	nuneration of staff.	Positioning,
24.74.01	dismissal and redundancies of employees. Education of employees. Planning career management.	1/7	
21Y1SI Familiarization v	ATC Simulator vith the simulation environment, acquiring basic habits, aircraft identification procedures, vectoring, level changes, ATC clearance, us	KZ e of RNAV points. I	2 Practical
	ng on basic vectoring, early application of vertical separation, EST and REV message passing. Practical exercises in the APPROACH	-	
	departure management procedures, conflict resolution.		
21Y1TH	Aircraft Technical Handling	KZ	2
_	and pushing tractors. GPU. Air conditioning and heating units. Aircraft fuel equipment. De-acing and anti-icing units. Loading and unlo		ment for
	ssangers onboarding and offboarding. Operational processes of aircraft technical handling and regulations. Modernization and techn Aircraft Maintananae		
21Y1UL Aircraft operations	Aircraft Maintenance and technical operations. Maintenance and work processes. Defects search methods, status check diagnostic tools. Selection and qua	KZ	2 personnel
· ·	ion for maintenance. Optimization of time maintenance intervals. Regulation no. 1321/2014 Part 145. Human factors of aircraft mainte		
	EASA for aircraft maintenance. Seminars will be focused on practical application.		
21ZALD	Basics of Air Transport	KZ	2
=	terminology, basic rules. VFR/IFR. Basics of aerodynamics. Propulsion of aircraft Aircraft design. Basics of navigation, radio navigation.	-	
Flight planning, opt	imization of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic management, ground accompanies. Space technologies	na handling, securi	ity. Air crew.
	Airlines and economics. Space technologies.		

22DON	Traffic Accidents	Z,ZK	6
	A Accidents and Forensic Expertise; Rail, Water and Air Accidents; Road Accident Documentation and Documentation Technology;		-
	ident Trace Analysis and Fake Accidents; Simulation Programmes for Road Accident Analysis; Pedestrian and Cyclist Accidents; Ve		
•	hicles; Safe road layout and collision diagrams; Not giving right of way; Technical defects of vehicles; Restraints - passive road safe	_	
	Prevention (traffic education, awareness, repression)	• /	3 ,
22METD	Measurement Methods and Technology in Transportation	ZK	4
I	thods in transport, their meaning and use. Geodetic basics in Czechia. Angular, length and height measurements. Principles of ma	I	1 -
	ents. Surveying and setting out. Challenges of localization, navigation and Global Navigation Satellite Systems. Laser scanning (ter		
J	photography and photogrammetry. Dynamic measurements of vehicles. High-speed cameras.	, , .	,
22X31D	Project 1 DOS	Z	2
22X32D	Project 2 DOS	Z	2
22X33D	Project 3 DOS	Z	4
23X31D	Project 1 DOS	Z	2
23X32D	Project 2 DOS	Z	2
23X33D	Project 3 DOS	Z	4
23Y1EH	Electronics and hardware in security of transportation	KZ	2
	eters of signals. Passive circuits, properties, basic measurements. Passive filters, semiconductors. Operational amplifiers, basic circ	1	1
	ic circuits. AD converters. Connection of analog and digital parts. Basic blocks of digital signal processing. Measurement processing.		
	in electronics.	· g · · - · · · · · · · · · · · ·	
23Y1KB	Cyber security in transportation	KZ	2
-	ecurity and cyber security, legal status in the field of cyber security, virtual cyberspace and communities, taxonomy of crimes in cyl		
•	g, cyber attack technology, information security, cyber attacks on telematics systems, security of systems with artificial intelligence,		
23Y1KM	Crisis Management	KZ	2
	me of crisis management with direction to Rescue system (IZS). After introduction to safety domain, there are terms and knowledge	1	1
	ement and its targets; IZS-crisis management-crisis planning; and basic legislation. Practical part is concentrated to responsibility		
23Y1KO	Quantum Physics and Optoelectronics	KZ	2
2011110	Ground of quantum physics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics compo	1	_
23Y1KY	Cybernality	1	
-		KZ	1 2
Juridical aspects of	• • •	KZ foware and connec	2 ted aspects.
	behavior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism. In	nfoware and connec	ted aspects.
23Y1MK	behavior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism. In Crisis Situation Management in Critical Infrastructure	nfoware and connec	ted aspects.
23Y1MK Determination of co	behavior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism. In Critical Infrastructure Crisis Situation Management in Critical Infrastructure itical infrastructute elements on all levels, their protection systems, responsibilities of particular agencies of the state administration	KZ n and the self-gover	ted aspects.
23Y1MK Determination of contraction	behavior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism. In Critical Infrastructure Crisis Situation Management in Critical Infrastructure ritical infrastructute elements on all levels, their protection systems, responsibilities of particular agencies of the state administration esponsibilities to anounce particular safety provisions. Physical and cyber protection of critical infrastructure with special attention to	KZ n and the self-gover to the soft targets.	2 rnment, and
23Y1MK Determination of countries their reconstruction 23Y1MU	behavior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism. In Crisis Situation Management in Critical Infrastructure itical infrastructure elements on all levels, their protection systems, responsibilities of particular agencies of the state administration esponsibilities to anounce particular safety provisions. Physical and cyber protection of critical infrastructure with special attention to Emergency Events Management Solution in Transport Infrastructure	nfoware and connect KZ In and the self-gover to the soft targets.	2 rnment, and
23Y1MK Determination of countries their reconstruction 23Y1MU	behavior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism. In Crisis Situation Management in Critical Infrastructure itical infrastructute elements on all levels, their protection systems, responsibilities of particular agencies of the state administration esponsibilities to anounce particular safety provisions. Physical and cyber protection of critical infrastructure with special attention to Emergency Events Management Solution in Transport Infrastructure nergency events with emphasis of the transport infrastructure events and their solution management. Knowledge in the emergency processing the state administration to the state administration to the state administration to the state administration of critical infrastructure with special attention to the state administration to the state ad	nfoware and connect KZ In and the self-gover to the soft targets.	2 rnment, and
23Y1MK Determination of control their reconstruction 23Y1MU Basic solutions of each	Crisis Situation Management in Critical Infrastructure itical infrastructure elements on all levels, their protection systems, responsibilities of particular agencies of the state administration esponsibilities to anounce particular safety provisions. Physical and cyber protection of critical infrastructure with special attention to Emergency Events Management Solution in Transport Infrastructure mergency events with emphasis of the transport infrastructure events and their solution management. Knowledge in the emergency in liquidation work within the transport infrastructure.	n floware and connect KZ n and the self-gover to the soft targets. KZ planning and special	2 roment, and 2 procedures
23Y1MK Determination of contheir reconstruction 23Y1MU Basic solutions of each	behavior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism. In Crisis Situation Management in Critical Infrastructure itical infrastructute elements on all levels, their protection systems, responsibilities of particular agencies of the state administration esponsibilities to anounce particular safety provisions. Physical and cyber protection of critical infrastructure with special attention to Emergency Events Management Solution in Transport Infrastructure mergency events with emphasis of the transport infrastructure events and their solution management. Knowledge in the emergency in liquidation work within the transport infrastructure. Protection of Critical Objects and Infrastructures	n and the self-gover to the soft targets. KZ KZ KZ KZ KZ KZ Solanning and special	ted aspects. 2 rnment, and 2 I procedures
23Y1MK Determination of contheir reconstruction 23Y1MU Basic solutions of each	Crisis Situation Management in Critical Infrastructure itical infrastructure elements on all levels, their protection systems, responsibilities of particular agencies of the state administration esponsibilities to anounce particular safety provisions. Physical and cyber protection of critical infrastructure with special attention to Emergency Events Management Solution in Transport Infrastructure mergency events with emphasis of the transport infrastructure events and their solution management. Knowledge in the emergency in liquidation work within the transport infrastructure. Protection of Critical Objects and Infrastructures cal systems, critical item, risks and their courses, criticality, vulnerability, connectivity, dependability, resilience, failure, protection, saf	n and the self-gover to the soft targets. KZ KZ KZ KZ KZ KZ Solanning and special	ted aspects. 2 rnment, and 2 I procedures
23Y1MK Determination of control their reconstruction and control their reconstructions of each control their reconstruction and cont	Crisis Situation Management in Critical Infrastructure itical infrastructure elements on all levels, their protection systems, responsibilities of particular agencies of the state administration esponsibilities to anounce particular safety provisions. Physical and cyber protection of critical infrastructure with special attention to Emergency Events Management Solution in Transport Infrastructure mergency events with emphasis of the transport infrastructure events and their solution management. Knowledge in the emergency in liquidation work within the transport infrastructure. Protection of Critical Objects and Infrastructures cal systems, critical item, risks and their courses, criticality, vulnerability, connectivity, dependability, resilience, failure, protection, saf	nfoware and connect KZ n and the self-gover to the soft targets. KZ clanning and special KZ ety of critical object	ted aspects. 2 rement, and 2 l procedures 2 s and critical
23Y1MK Determination of control their reconstruction of control their reconstruction of each of their reconstruction of each of their reconstruction of each of their reconstruction of their reconstr	Crisis Situation Management in Critical Infrastructure itical infrastructute elements on all levels, their protection systems, responsibilities of particular agencies of the state administration esponsibilities to anounce particular safety provisions. Physical and cyber protection of critical infrastructure with special attention to Emergency Events Management Solution in Transport Infrastructure mergency events with emphasis of the transport infrastructure events and their solution management. Knowledge in the emergency in liquidation work within the transport infrastructure. Protection of Critical Objects and Infrastructures cal systems, critical item, risks and their courses, criticality, vulnerability, connectivity, dependability, resilience, failure, protection, saffinfrastructures. Criminal Law in IT and Transportation	nfoware and connect KZ n and the self-gover to the soft targets. KZ clanning and specia KZ ety of critical object	ted aspects. 2 rement, and 2 procedures 2 s and critical
23Y1MK Determination of control their reconstruction of control their reconstruction of each of their reconstruction of each of their reconstruction of each of their reconstruction of their reconstr	Crisis Situation Management in Critical Infrastructure itical infrastructure elements on all levels, their protection systems, responsibilities of particular agencies of the state administration esponsibilities to anounce particular safety provisions. Physical and cyber protection of critical infrastructure with special attention to Emergency Events Management Solution in Transport Infrastructure with special attention in Emergency events with emphasis of the transport infrastructure events and their solution management. Knowledge in the emergency in liquidation work within the transport infrastructure. Protection of Critical Objects and Infrastructures cal systems, critical item, risks and their courses, criticality, vulnerability, connectivity, dependability, resilience, failure, protection, saffinfrastructures. Criminal Law in IT and Transportation minal law into legal order, conception of culpability and criminal delict, consequency of other legal standards. international treaty and	nfoware and connect KZ n and the self-gover to the soft targets. KZ clanning and special KZ ety of critical object	ted aspects. 2 rement, and 2 procedures 2 s and critical
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