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-21/22-DC

to degradation processes in materials, to defectoscopy and to main mechanical tests.

Name of the group: 1st Sem. Bachelor Full-Time TET from 2021/22

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:

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
611CAL1	Calculus 1 Romana Zibnerová Ond ej Navrátil (Gar.)	Z,ZK	7	2P+4C+22E	B Z	Z
611LA	Linear Algebra Romana Zibnerová Romana Zibnerová Martina Be vá ová (Gar.)	Z,ZK	3	2P+1C+10E	B Z	Z
612ZYDI	Introduction to Transportation Engineering	Z,ZK	2	1P+1C	Z	Z
618MTY	Materials Science and Engineering Vít Malinovský Jaroslav Valach (Gar.)	Z,ZK	3	2P+1C+10E	B Z	Z
611GIE	Geometry Vít Malinovský Šárka Vorá ová (Gar.)	KZ	3	2P+2C+12E	Z	Z
614ASD	Algorithm and Data Structures Jan Mejst ik	KZ	3	0P+2C+8E	B Z	Z
614KSP	Constructing with Computer Aid	KZ	2	0P+2C+8E	Z	Z
618TED	Technical Documentation Vít Malinovský Jitka ezní ková (Gar.)	KZ	2	1P+1C+8E	3 Z	Z
615DPLG	Transportation Psychology	Z	2	2P+0C+6E	Z	Z
616UDOP	Introduction into Vehicles Zuzana Radová Petr Bouchner (Gar.)	Z	2	2P+0C+8E	B Z	Z
TV-1	Physical Education	Z	1		Z	Z

Characteristics of the courses of this group of Study Plan: Code=1S-BP-TET-21/22-DC Name=1st Sem. Bachelor Full-Time TET from 2021/22

611CAL1	Calculus 1	Z,ZK	7				
Sequence of real numbers and its limit. Basic properties of mappings. Function of one real variable, its limit and derivative. Indefinite integral, Newton integral, Riemann integral, improper							
Riemann integral. First-order differential equations, linear differential equations.							
611LA	Linear Algebra	Z,ZK	3				
Vector spaces (linear co	mbinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and	their solvability. D	eterminants and				
their applications. Scala	r product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classification.						
612ZYDI	Introduction to Transportation Engineering	Z,ZK	2				
Role of transportation in	land-use planning. Basic terms in transportation engineering. Traffic survey and traffic prognosis. Introduction to topic of road	ls, public mass tra	insport. Negative				
impacts of transportation	impacts of transportation to environment and safety.						
618MTY	Materials Science and Engineering	Z,ZK	3				
Basic course of materials science and engineering explains mechanical properties of structural materials based on their bonding forces and microstructure. However the main attention							
is paid to metals as the	is paid to metals as the most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and composites. Attention is also paid						

611GIE	Geometry	KZ	3
Orthographic and obli	que projections, linear perspective. Topographic surfaces and their orthogonal projection. Differential geometry of curves - para	ameterization, arc	of the curve,
torsion and curvature	Frenet's trihedron. Kinematics - a curve as a trajectory of the motion, the velocity and acceleration of a particle moving on a c	curved path.	
614ASD	Algorithm and Data Structures	KZ	3
Students will be famili	arized with selected basic and derived data structures, algorithms, their properties and their design procedure. Students will ana	lyze problems, pro	pose theoretical
solutions to the set ta	sk and the resulting algorithm write by means of flowcharts, practice in reading algorithms recorded by means of the flowchart	and use the basic	s of Boolean
algebra with forming t	he conditions for the algorithms.		
614KSP	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 common	work rules in grap	hic applications
and CA systems. Co-	ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting poss	sibilites, AutoCAD	environment
profiles, drawings with	n raster foundaments).		
618TED	Technical Documentation	KZ	2
Technical standards,	nternational standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimension	nal and geometric	al accuracy,
arrangement of drawi	ng sheets.		
615DPLG	Transportation Psychology	Z	2
Subject of psychology	and its basic concepts. Information intake, decision-making and behaviour. Performance. Engineering psychology and vehicle c	onstruction. Psych	ological aspects
of travel route and tra	ffic conditions, accidents and traffic incidents. Selection and training of the staff. Work and leisure. Age as a factor in transport of	operation.	
616UDOP	Introduction into Vehicles	Z	2
Vehicles and transpor	tation systems. Functionality and setup. Movement and drive principles. Engines and their characteristics. Rail, road, air and w	ater transport. Alte	ernative means
of transport. Lifting ed	uipment and conveyors. Legislation.		
TV-1	Physical Education	Z	1

Code of the group: 2S-BP-TET-21/22-DC

Name of the group: 2nd Sem. Bachelor Full-Time TET from 2021/22

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

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

Credits in the group: 30 Note on the group:

Note on the 6	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
611CAL2	Calculus 2 Romana Zibnerová, Ond ej Navrátil, Magdalena Hykšová, Olga Vraštilová, Tomáš T asák Romana Zibnerová Ond ej Navrátil (Gar.)	Z,ZK	5	2P+3C+20E	L L	Z
611STAT	Statistics Pavel Provinský, Evženie Uglickich, Pavla Pecherková, Michal Matowicki Pavla Pecherková Pavel Provinský (Gar.)	Z,ZK	4	2P+2C+12E	L	Z
612ZTS	Railway Lines and Stations Tomáš Javo ík, Ond ej Trešl	Z,ZK	4	2P+2C+10E	L L	Z
618SAT	Structural Analysis Tomáš Doktor Daniel Kytý (Gar.)	Z,ZK	4	2P+2C+14E	B L	Z
620SYSA	Systems Analysis Petr Bureš, Eva Haj iarová, Ji í R ži ka Zuzana B linová (Gar.)	Z,ZK	5	2P+2C+14E	L L	Z
614PRG	Programming Libor Žídek	KZ	2	0P+2C+8E	L L	Z
617TEDL	Transport Technology and Logistics Michal Drábek Vít Janoš (Gar.)	KZ	3	2P+1C	L	Z
621ZALD	Basics of Air Transport Jakub Hospodka	KZ	2	0P+2C+8E	L L	Z
TV-2	Physical Education	Z	1		L	Z

Characteristics of the courses of this group of Study Plan: Code=2S-BP-TET-21/22-DC Name=2nd Sem. Bachelor Full-Time TET from 2021/22

611CAL2	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 in	ntegrals.	ı
611STAT	Statistics	Z,ZK	4
Definition of probal	bility, random variable and its description, known distributions, random vector, function of random variable. Methods of point estimat	on. Testing of stati	stical hypothesis
Regression and co	orrelation, linear regression, correlation coefficient, coefficient of determination, the general linear model, statistical inference in line	ar regression, ana	lysis of variance
multiple regression	n, the use of matrices in regression.		
612ZTS	Railway Lines and Stations	Z,ZK	4
Rail transport. Rail	lway track geometry parameters. Route layout of railway lines. Railway line construction - railway substructure and superstructure	. Spatial layout of	railway lines.
Railway control sy	stems in relation to infrastructure. Operating and carriage points. Railway lines net and category. Traction in rail transport.		
618SAT	Structural Analysis	Z,ZK	4
General system of	forces in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determine	ate beams and si	nple girders.
Principle of virtual	work. Kinematic method for calculation of reactions of statically determinate systems. Determination of axial forces in truss construct	ons. Cross-section	al characteristic
of planar shapes. I	Fiber polygons and chains.		
620SYSA	Systems Analysis	Z,ZK	5
Introduction to sys	tem sciences, system viewpoint, terminology, typical system analysis tasks, system identification, system interface and interface t	asks, processes, s	ystem behaviou
and its analysis, st	trong functions and processes, genetic code, system identity, system architecture. Tools for system analysis - Petri nets, decision	tables, algorithms	for structural
tasks. Soft and har	rd systems, methods for soft system analysis		

614PRG	Programming	KZ	2			
Algorithm development, methods of structured programming, high-level programming languages, basics of C programming languages (types, variables, conditions, cycles, arrays,						
functions), programmi	ng techniques, complexity.					
617TEDL	Transport Technology and Logistics	KZ	3			
Basic terms in transpo	rt technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and freight	transport, organis	ation of traffic in			
each transport modus	technologic factors of the side of operator and client, organisation of city transport, logistic technologies and their aplication of city transport is approximately	using various trans	sport modus.			
621ZALD	Basics of Air Transport	KZ	2			
History, definitions, terminology, basic rules. VFR/IFR. Basics of aerodynamics. Propulsion of aircraft. Aircraft design. Basics of navigation, radio navigation. Weight, balance, performance.						
Flight planning, optimization of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic management, ground handling, security. Air crew.						
Airlines and economics. Space technologies.						
TV-2	Physical Education	7	1			

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

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:

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
611FYZ	Physics Goce Chadzitaskos Zuzana Malá (Gar.)	Z,ZK	5	2P+2C+18E	B Z	Z
612MDE	Transport Models and Transport Excesses Josef Kocourek, Tomáš Pad lek Josef Kocourek (Gar.)	Z,ZK	3	2P+1C+8E	B Z	Z
611TGA	Graph Theory and its Applications in Transport Denisa Mocková, Dušan Teichmann, Andrea Hrní ková Denisa Mocková Denisa Mocková (Gar.)	Z,ZK	4	2P+2C+12E	B Z	Z
618PZP	Elasticity and Strength Tomáš Doktor Ond ej Jiroušek (Gar.)	Z,ZK	3	2P+1C+10E	B Z	Z
620UITS	Introduction to Intelligent Transport Systems Vladimír Faltus Pavel Hrubeš (Gar.)	Z,ZK	7	3P+2C+20E	B Z	Z
612PPOK	Designing Roads, Highways and Motorways Josef Kocourek, Tomáš Pad lek, Petr Kumpošt	KZ	3	1P+2C+10E	B Z	Z
614DATS	Database Systems Ond ej Smíšek Jana Kaliková (Gar.)	KZ	2	1P+1C+10E	B Z	Z
615JZ1A	Foreign Language - English 1 Jan Feit	Z	3	0P+4C+10E	B Z	Z

Characteristics of the courses of this group of Study Plan: Code=3S-BP-TET-24/25-DC Name=3rd Sem. Bachelor Full-Time TET from 2024/25

611FYZ	Physics	Z,ZK	5
Kinematics, dynamic	cs, Newton's laws, force fields, mechanics of continuum, thermodynamics, introduction to electrostatics and electric current.	, ,	
612MDE	Transport Models and Transport Excesses	Z,ZK	3
	affic flow and methods for their measurement. Models of the traffic flow, communications load, line and urban systems. Theory sessment. Statistical characteristics of transport. Transport excesses, their analysis, the causes, identify and minimize the cons	•	-
611TGA	Graph Theory and its Applications in Transport	Z,ZK	4
Basic terms of graph	n theory, paths in graphs, flows in networks, location problems, design problems on graphs, optimum routing, use of graphs in	other scientific discip	olines.
618PZP	Elasticity and Strength	Z,ZK	3
•	ssion. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam. Design of riveted n curve of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Beam on elastic	•	
620UITS	Introduction to Intelligent Transport Systems	Z,ZK	7
		1 / 1	/
Terminology and leg systems for ITS. Prir	islative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamentals canciples and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real examples and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real examples and technical support measurement of traffic data, localization and navigation.	of information and tele	
Terminology and leg systems for ITS. Prir principles of ITS.	islative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamentals of	of information and tele	
Terminology and leg systems for ITS. Prir principles of ITS. 612PPOK Definition, types, ow Range of vision for s	islative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamentals on ciples and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real exa	of information and telemples of possible apples of MZ dard speed. Route in	plications of th 3 n rural areas.
Terminology and leg systems for ITS. Prir principles of ITS. 612PPOK Definition, types, ow Range of vision for sintersections.	islative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamentals of aciples and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real exa Designing Roads, Highways and Motorways "nership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and star	of information and telemples of possible apples of MZ dard speed. Route in	plications of th 3 n rural areas.
Terminology and leg systems for ITS. Prir principles of ITS. 612PPOK Definition, types, ow Range of vision for sintersections. 614DATS Basic concepts of data	islative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamentals of aciples and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real examples and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real examples and Designing Roads, Highways and Motorways Interest in practice and their operation. Practical work with traffic data. Real examples and transition curve. Sinuosity and stare stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads	of information and telemples of possible apples of	3 n rural areas. sings, junction
Terminology and leg systems for ITS. Prir principles of ITS. 612PPOK Definition, types, ow Range of vision for s intersections. 614DATS Basic concepts of data	islative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamentals of aciples and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real examples and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real examples in the properties of the properties of the practical work with traffic data. Real examples and technical support work with traffic data. Real examples in the properties of the	of information and telemples of possible apples of	3 n rural areas. sings, junction

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

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
611MSP	Modeling of Systems and Processes Jana Kuklová, Bohumil Ková Bohumil Ková (Gar.)	Z,ZK	4	2P+2C+12B	L	Z
616DOKY	Vehicle Technology Josef Mík, Josef Svoboda, P emysl Toman Josef Mík (Gar.)	Z,ZK	5	2P+2C	L	Z
618KIDY	Kinematics and Dynamics Vít Malinovský, Tomáš Fíla Tomáš Fíla (Gar.)	Z,ZK	4	2P+2C	L	Z
615JZ2A	Foreign Language - English 2 Jan Feit, Karolina Beauxisová, V ra Pastorková	Z,ZK	3	0P+4C+10B	L	Z

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

611MSP | Modeling of Systems and Processes | Z,ZK | 4 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.

616DOKY | 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.

618KIDY Kinematics and Dynamics Z,ZK

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.

615JZ2A Foreign Language - English 2 Z,ZK 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-V1-22/23-D

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
611EMOP	Electromagnetic Field and Optics Kurt Fišer Kurt Fišer Kurt Fišer (Gar.)	Z,ZK	4	2P+2C	L	Z
612SDK	Highways, Motorways and Intersections Josef Kocourek, Tomáš Pad lek, Petr Kumpošt Josef Kocourek (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-D Name=4th Sem. Bachelor Full-Time TET-DOS 1st alternative subject from 2022/23

611EMOP	Electromagnetic Field and Optics	Z,ZK	4				
Electric field. Electric c	Electric field. Electric current. Magnetic field. Electromagnetic field. Optics. Basics of solid-state physics.						
612SDK	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 inter	of crossroads and intersections. Crossroads. Roundabouts, Intersections, Special types of junctions, Capacity of crossroads and intersections, Structure of payement of roads and						

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-D

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
611MDSD	Collecting and Processing of Traffic Data Michal Matowicki, Petr Bureš, Ond ej P ibyl Ond ej P ibyl Ond ej P ibyl (Gar.)	KZ	3	2P+0C	L	Z
612PUSS	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-D Name=4th Sem. Bachelor Full-Time TET-DOS 2nd alternative subject from 2022/23

611MDSD	Collecting and Processing of Traffic Data	KZ	3			
Basic principles of traffic detection and data collection, specific problems of the field of traffic data. Data preprocessing and analysis for use in additional applications.						
612PUSS	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-D

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
614PODP	Computer Aid of Transportation Projecting Drahomír Schmidt	KZ	3	0P+2C	L	Z
618MECK	Mechanics of Constructions Vít Malinovský, Petr Koudelka Petr Koudelka (Gar.)	KZ	3	2P+0C	Ĺ	Z

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

614PODP	Computer Aid of Transportation Projecting	KZ	3						
Overview of CAx applica	verview of CAx application for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, data exchange). Advanced blocks								
modification (attributes,	relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic trans	sition curve, cross	-and longitudinal						
section). Basics of 3D m	ection). Basics of 3D modelling.								
618MECK	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-DC

Traffic Accidents

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:

622DON

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
612ZELP	Railway Operation Tomáš Javo ík	Z,ZK	4	2P+2C	Z	Z
622DON	Traffic Accidents Michal Frydrýn, Tomáš Mi unek, Luboš Nouzovský, Tomáš Kohout Luboš Nouzovský 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-DC Name=5th Sem. Bachelor Full-Time TET-DOS from 2023/24

612ZELP	Railway Operation	Z,ZK	4
Legislation in railway tra	affic operation. Ra	ilway vehicles	
brakes. Railway vehicles	marking. Operation intervals. Theoretical graph of train running.		

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-D

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
612DOSI	Traffic Surveys and Simulations Petr Kumpošt, Petr Richter Petr Kumpošt (Gar.)	Z,ZK	3	1P+2C	Z	Z
618DYKS	Dynamics of Structures and Systems Ond ej Jiroušek 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-D Name=5th Sem. Bachelor Full-Time TET-DOS 1st alternative subject from 2023/24

612DOSI 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.

618DYKS | Dynamics of Structures and Systems | Z,ZK | 3
Vibration of systems with multiple degrees of freedom. Natural modes and natural frequencies. Method of stiffness constants, method of elastic constants, other numerical methods.

Systems with continuously distributed mass. Matrix form of equations of vibration. Finite element method in dynamics of structures. Solving vibrations by superposition of natural modes. Subspace iteration methods. Introduction to nonlinear vibrations.

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

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	
612MKOD	City Rail Transport Ond ej Trešl	Z,ZK	5	2P+1C	Z	Z	
616DYJV	Vehicle Dynamics Josef Mík, Josef Svoboda, P emysl Toman Josef Mík (Gar.)	Z,ZK	5	2P+1C	Z	Z	

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

612MKOD 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.

616DYJV 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-D

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
612POSD	Assessment of Transport Structures Tomáš Javo ík, Kristýna Neubergová Kristýna Neubergová (Gar.)	KZ	3	2P+0C	Z	Z

	Numerical Methods in Mechanics		_	00.00	_	
618NUMM	Numerical Methods in Mechanics Ond ej Jiroušek Ond ej Jiroušek (Gar.)	KZ	3	2P+0C	Z	Z

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

612POSD **Assessment of Transport Structures** ΚZ

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

618NUMM 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-DC

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
612PRMK	Urban Road Traffic and Design Josef Kocourek, Tomáš Pad lek Josef Kocourek (Gar.)	Z,ZK	5	2P+2C	L	Z
612VHD	Public Transport Jan Kruntorád	Z,ZK	5	3P+2C	L	Z
622METD	Measurement Methods and Technology in Transportation Drahomír Schmidt, Michal Frydrýn, Luboš Nouzovský, Zden k Svatý Luboš Nouzovský Drahomír Schmidt (Gar.)	ZK	4	2P+2C	L	Z

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

612PRMK	Urban Road Traffic and Design	Z,ZK	5					
Composition of urban re	Composition of urban road, elements and routes for traffic, pedestrian and cycling transport, projection of intersections, traffic lights and its traffic safety proposal, roundabouts, calming							
of traffic, precaution for	blind & partially-sighted, parking, traffic area, induction of traffic, organization and regulation of transport.							
612VHD	Public Transport	Z,ZK	5					
Importance of public tra	nsport, transport research, evaluation, planning of lines routes and territory operation, planning of operation parameters, pre	paration of opera	tion, network					
conceptions, operation-	technology and operation-economically conditions of planning of operation conceptions, planning of operation conception, pla	ning and realisati	ion of timetables,					
prepare of infrastruktur	e (route, stops), preference of public transport, financing.							
622METD	Measurement Methods and Technology in Transportation	ZK	4					
Measurement methods	leasurement methods in transport, their meaning and use. Geodetic basics in Czechia. Angular, length and height measurements. Principles of mapping, accuracy and errors of							
geodetic measurement	s Surveying and setting out. Challenges of localization, payingtion and Global Navigation Satellite Systems. Laser scanning (terrestrial mobile	IIAV/) Technical					

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

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

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

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

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

Credits in the group: 4 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
616PAV	Passive Safety Zuzana Radová Josef Mík (Gar.)	Z,ZK	4	2P+1C	L	Z
617FID	Financing and investment in transport Alexandra Dvo á ková Olga Mertlová (Gar.)	Z,ZK	4	2P+1C+12B	L	Z

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

616PAV	Passive Safety	Z,ZK	4
Road accident evalua	tion. Testing and legislation. Crash tests. Carbody properties. Injury mechanics. Restrain systems. Airbags. Road user safety. M	athematic modelli	ng. Post collision
safety systems.			
617FID	Financing and investment in transport	7 7K	4

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-D

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
612ZAR	Introduction to Architectural Design Petr ervenka, Jana Kumpoštová	Z	3	2P+0C+8B	L	Z
614ZDA	Data Processing Ond ej Smíšek	Z	3	0P+2C	L	Z

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

612ZAR	Introduction to Architectural Design	Z	3		
Urbanism and architecture of traffic systems. Bus and trolley-bus transport. Tramway and town tracks. Design of vehicles. Subway. Railway transport. Railway stations. Local					
communications. Intern	ational airports.				
614ZDA	Data Processing	Z	3		
Introduction to data processing and analysis tools. Practical part of the training - introduction to the working environment, applied examples of data processing from practice, advanced					
mothode of procentatio	of the results. Seminar papers on open data. Consultation hours for cominar papers. Seminar paper submission and present	atation			

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

The role of the block: ZP

Code of the group: XB-BP-DOS-22/23-DC

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

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

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

Credits in the group: 8 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
622X31D	Project 1 DOS	Z	2	0P+2C	L	ZP
623X31D	Project 1 DOS	Z	2	0P+2C	L	ZP
612X31D	Project 1 DOS Dagmar Ko árková	Z	2	0P+2C	L	ZP
614X31D	Project 1 DOS	Z	2	0P+2C	L	ZP
615X31D	Project 1 DOS Petr Musil	Z	2	0P+2C	L	ZP
621X31D	Project 1 DOS	Z	2	0P+2C	L	ZP
616X31D	Project 1 DOS Martin Scháno	Z	2	0P+2C	L	ZP
617X31D	Project 1 DOS	Z	2	0P+2C	L	ZP
618X31D	Project 1 DOS	Z	2	0P+2C	L	ZP
620X31D	Project 1 DOS	Z	2	0P+2C	L	ZP
611X31D	Project 1 DOS	Z	2	0P+2C	L	ZP
614X32D	Project 2 DOS	Z	2	0P+3C	Z	ZP
612X32D	Project 2 DOS Josef Kocourek, Tomáš Pad lek, Petr Kumpošt, Dagmar Ko árková	Z	2	0P+3C	Z	ZP
623X32D	Project 2 DOS	Z	2	0P+3C	Z	ZP
622X32D	Project 2 DOS	Z	2	0P+3C	Z	ZP
621X32D	Project 2 DOS	Z	2	0P+3C	Z	ZP
620X32D	Project 2 DOS	Z	2	0P+3C	Z	ZP
618X32D	Project 2 DOS	Z	2	0P+3C	Z	ZP

617X32D	Project 21 DOS	Z	2	0P+3C	Z	ZP
616X32D	Project 2 DOS Josef Mík, Martin Scháno Josef Mík (Gar.)	Z	2	0P+3C	Z	ZP
615X32D	Project 2 DOS Petr Musil	Z	2	0P+3C	Z	ZP
611X32D	Project 2 DOS	Z	2	0P+3C	Z	ZP
611X33D	Project 3 DOS	Z	4	0P+4C	L	ZP
622X33D	Project 3 DOS	Z	4	0P+4C	L	ZP
621X33D	Project 3 DOS	Z	4	0P+4C	L	ZP
620X33D	Project 3 DOS	Z	4	0P+4C	L	ZP
618X33D	Project 3 DOS	Z	4	0P+4C	L	ZP
623X33D	Project 3 DOS	Z	4	0P+4C	L	ZP
616X33D	Project 3 DOS Josef Mík, Martin Scháno Josef Mík (Gar.)	Z	4	0P+4C	L	ZP
615X33D	Project 3 DOS Petr Musil	Z	4	0P+4C	L	ZP
614X33D	Project 3 DOS	Z	4	0P+4C	L	ZP
612X33D	Project 3 DOS Josef Kocourek, Tomáš Pad lek, Dagmar Ko árková	Z	4	0P+4C	L	ZP
617X33D	Project 3 DOS	Z	4	0P+4C	L	ZP

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

121 200 110111 20			
622X31D	Project 1 DOS	Z	2
623X31D	Project 1 DOS	Z	2
612X31D	Project 1 DOS	Z	2
614X31D	Project 1 DOS	Z	2
615X31D	Project 1 DOS	Z	2
621X31D	Project 1 DOS	Z	2
616X31D	Project 1 DOS	Z	2
617X31D	Project 1 DOS	Z	2
618X31D	Project 1 DOS	Z	2
620X31D	Project 1 DOS	Z	2
611X31D	Project 1 DOS	Z	2
614X32D	Project 2 DOS	Z	2
612X32D	Project 2 DOS	Z	2
623X32D	Project 2 DOS	Z	2
622X32D	Project 2 DOS	Z	2
621X32D	Project 2 DOS	Z	2
620X32D	Project 2 DOS	Z	2
618X32D	Project 2 DOS	Z	2
617X32D	Project 21 DOS	Z	2
616X32D	Project 2 DOS	Z	2
615X32D	Project 2 DOS	Z	2
611X32D	Project 2 DOS	Z	2
611X33D	Project 3 DOS	Z	4
622X33D	Project 3 DOS	Z	4
621X33D	Project 3 DOS	Z	4
620X33D	Project 3 DOS	Z	4
618X33D	Project 3 DOS	Z	4
623X33D	Project 3 DOS	Z	4
616X33D	Project 3 DOS	Z	4
615X33D	Project 3 DOS	Z	4
614X33D	Project 3 DOS	Z	4
612X33D	Project 3 DOS	Z	4
617X33D	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-22/23-DC

Name of the group: Comp. Sel. Courses 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 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
621Y1AM	Aeronautical Information Management (AIM)	KZ	2	2P+0C	Z	PV
620Y1AF	Alternative Forms of Transportation Project Financing	KZ	2	2P+0C	Z	PV
618Y1AM	Anatomy, Mobility and Safety of Man	KZ	2	2P+0C	Z	PV
614Y1AV	Animation and Visualization	KZ	2	2P+0C	L	PV
612Y1AE	Applied Ecology	KZ	2	2P+0C	Z	PV
620Y1AE	Applied Electronics	KZ	2	2P+0C	Z	PV
614Y1BE	Barrierless Transport	KZ	2	2P+0C	L	PV
615Y1BO	Work Safety and Health Protection in Transportation	KZ	2	2P+0C	L	PV
611Y1BK	Error Detection Codes for Interlocking Systems	KZ	2	2P+0C	Z	PV
621Y1BS	Unmanned aircraft systems 1	KZ	2	2P+0C	L	PV
614Y1BM	Biometric Methods	KZ	2	2P+0C	Z	PV
615Y1DZ	History of Railway Martin Jacura Martin Jacura (Gar.)	KZ	2	2P+0C	L	PV
612Y1DS	Project Documentation in Practice	KZ	2	2P+0C	Z	PV
617Y1EV	Public Sector Economy	KZ	2	2P+0C	Z	PV
623Y1EH	Electronics and hardware in security of transportation	KZ	2	2P+0C	L	PV
620Y1EK	Qualification in Electrical Engineering	KZ	2	2P+0C	L	PV
616Y1EN	Energy Requirements of Vehicles	KZ	2	2P+0C	L	PV
620Y1EA	Environmental Aspects of Transport	KZ	2	2P+0C	Z	PV
615Y1EH	European Integration within Historical Context	KZ	2	2P+0C	Z	PV
618Y1EM	Experimental Methods in Mechanics	KZ	2	2P+0C	Z	PV
615Y1FD	French Area Studies and Transportation	KZ	2	2P+0C	L	PV
614Y1HW	Computer Hardware	KZ	2	2P+0C	L	PV
615Y1HL	History of Civil Aviation	KZ	2	2P+0C	L	PV
615Y1HD	History of City Mass Transport	KZ	2	2P+0C	Z	PV
612Y1HD	Traffic Noise	KZ	2	2P+0C	L	PV
615Y1HE	Work Hygiene and Ergonomics in Traffic	KZ	2	2P+0C	Z	PV
616Y1IS	Interactive simulators and simulations Libor Žídek, Ond ej Smíšek, Martin Scháno, Ond ej Piksa, Ji í Zeisek	KZ	2	2P+0C	L	PV
612Y1KN	Combined Transportation	KZ	2	2P+0C	Z	PV
612Y1KP	Communication and Promotion of Transport Projects	KZ	2	2P+0C	L	PV
620Y1KP	Communication and presentation skills	KZ	2	2P+0C	Z	PV
623Y1KM	Crisis Management	KZ	2	2P+0C	Z	PV
623Y1KO	Quantum Physics and Optoelectronics	KZ	2	2P+0C	L	PV
623Y1KB	Cyber security in transportation	KZ	2	2P+0C	L	PV
621Y1LJ	Aeronautical Radio and Flight Instruments	KZ	2	2P+0C	L	PV
621Y1LS	Air Traffic Services	KZ	2	2P+0C	L	PV
617Y1LL	Logistics of Passenger and Freight Air Transport	KZ	2	2P+0C	L	PV
620Y1LN	Location and Navigation	KZ	2	2P+0C	L	PV
623Y1MK	Crisis Situation Management in Critical Infrastructure	KZ	2	2P+0C	L	PV
623Y1MU	Emergency Events Management Solution in Transport Infrastructure	KZ	2	2P+0C	Z	PV
617Y1MD	Marketing in Transportation Alexandra Dvo á ková	KZ	2	2P+0C	Z	PV
618Y1MT	Engineering Materials	KZ	2	2P+0C	L	PV
621Y1MP	Matlab for project-oriented study	KZ	2	2P+0C	Z	PV
614Y1MP	Modeling Complex Assemblies and Models in Parametric Modeller	KZ	2	2P+0C	Z	PV

615Y1MK	Modern History in Context: Every Day Life and Transport	KZ	2	2P+0C	L	PV
615Y1NE	German in the Economy and Society	KZ	2	2P+0C	Z	PV
621Y1OH	Airline Business and Operations	KZ	2	2P+0C	Z	PV
623Y1OK	Protection of Critical Objects and Infrastructures	KZ	2	2P+0C	L	PV
620Y1OI	Fare Collection and Information Systems	KZ	2	2P+0C	L	PV
614Y1OJ	Object - oriented programming in JAVA	KZ	2	2P+0C	L	PV
614Y1OP	Operating System	KZ	2	2P+0C	Z	PV
617Y1OF	Personal Finance	KZ	2	2P+0C	Z	PV
	Alexandra Dvo á ková					
620Y1OK	Road Lighting	KZ	2	2P+0C	L	PV
611Y1PV	Parametrical and Multicriterial Programming	KZ	2	2P+0C	Z	PV
617Y1PM	Personnel Management Stanislava Holíková	KZ	2	2P+0C	L	PV
612Y1PC	Pedestrian and Cycling Transport	KZ	2	2P+0C	L	PV
614Y1PG	Computer Graphics	KZ	2	2P+0C	L	PV
614Y1P2	Computer Aid of Transportation Projecting 2	KZ	2	2P+0C	Z	PV
618Y1PS	Computer Simulations in Mechanics	KZ	2	2P+0C	L	PV
614Y1PI	Corporate Information System	KZ	2	2P+0C	Z	PV
614Y1PZ	Advanced Data Processing in Spreadsheets	KZ	2	2P+0C	Z	PV
621Y1PC	ATC Procedures and Activities	KZ	2	2P+0C	Z	PV
612Y1PD	Assessment of Transport	KZ	2	2P+0C	Z	PV
620Y1PK	Product Quality Management Processes	KZ	2	2P+0C	Z	PV
614Y1PJ	C Programming Language	KZ	2	2P+0C	Z	PV
612Y1C1	Designing Roads in Civil 3D I	KZ	2	2P+0C	L	PV
612Y1C2	Designing Roads in Civil 3D II	KZ	2	2P+0C	Z	PV
614Y1PA	3D Modeling in AutoCAD	KZ	2	2P+0C	Z	PV
616Y1PV	Operation, Construction and Maintenance of Vehicles	KZ	2	2P+0C	L	PV
621Y1PL	Operational Aspects of Aerodromes	KZ	2	2P+0C	L	PV
621Y1PA	Air Traffic Control Operating Procedures	KZ	2	2P+0C	Z	PV
612Y1PU	Organization Disposition of Railway Stations	KZ	2	2P+0C	L	PV
612Y1RU	Railway Lines Reconstruction	KZ	2	2P+0C	Z	PV
616Y1RE	Control and Electronic Vehicle Systems Josef Mík, P emysl Toman, Martin Scháno P emysl Toman (Gar.)	KZ	2	2P+0C	Z	PV
621Y1RZ	Human Resources Management	KZ	2	2P+0C	L	PV
617Y1ST	Titan Simulation	KZ	2	2P+0C	L	PV
621Y1SI	ATC Simulator	KZ	2	2P+0C	L	PV
620Y1SC	Sensors and Actuators	KZ	2	2P+0C	L	PV
617Y1SL	Sociology of Human Resources	KZ	2	2P+0C	Z	PV
611Y1SI	Transportation Software Engineering	KZ	2	2P+0C	Z	PV
616Y1KS	Quality and Reliability of Vehicles	KZ	2	2P+0C	Z	PV
612Y1SU	Management and Maintenance of Roads	KZ	2	2P+0C	L	PV
616Y1SO	Strategy and innovation in mobility	KZ	2	2P+0C	Z	PV
617Y1SK	Urban and Regional Rail Transport Systems	KZ	2	2P+0C	L	PV
621Y1TH	Aircraft Technical Handling	KZ	2	2P+0C	Z	PV
611Y1TG	Graph Theory	KZ	2	2P+0C	L	PV
623Y1TP	Criminal Law in IT and Transportation	KZ	2	2P+0C	Z	PV
614Y1TI	Creating Interactive Internet Applications	KZ	2	2P+0C	L	PV
621Y1UL	Aircraft Maintenance	KZ	2	2P+0C	L	PV
614Y1UP	Editing of Theses in MS Word	KZ	2	2P+0C	L	PV
618Y1UK	Introduction of Rail Vehicles	KZ	2	2P+0C	L	PV
612Y1VR	Public Transport in Cities and Regions	KZ	2	2P+0C	Z	PV
623Y1VS	Negotiation and Cooperation	KZ	2	2P+0C	Z	PV
614Y1VM	Development of Applications for Mobile Devices	KZ	2	2P+0C	Z	PV
616Y1VT	Development in Railroad Vehicles	KZ	2	2P+0C	L	PV

614Y1WG	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		KZ	2	2P+0C	L	PV
14Y1ZJ	Foundation of MATLAB Programming	KZ	2	2P+0C	Z	+
	Fundamentals of programming in JAVA		+			PV
12Y1ZU	Principles of Urbanism	KZ	2	2P+0C	Z	PV
15Y1ZV	East-West dichotomy: Prelude to the Cold War	KZ	2	2P+0C	Z	PV
16Y1ZL	Vehicle Testing, Legislation and Construction	KZ	2	2P+0C	Z	PV
ET-DOS from 2022 621Y1AM 2 Definition and basic over	Aeronautical Information Management (AIM) view of AIS and AIM. Transition from AIS to AIM. Regulatory base. Provision of AIS/AI	M in the Czech Rep.	AIP (Aeror	K nautical Inf. Pub	Z lication). V	2 FR Manual
•	ystem. NOTAM messages.PIB (Pre-flight Informtion Bulletin). AIC (Aeoronautical Inf. C DQ (Aeronautical Data Quality). AIXM (Aeronautical Inf. Exchnage Format).	irculars). Aeronautio	cal Charts.	EAD (Europena	a AIS Data	base). QMS
	Alternative Forms of Transportation Project Financing			K	Z	2
will be specifed such fo	orms of financing in transportation and telecomunications, where the public sector boo			debt payments	come from	its budget b
	rect participant of the transaction and it is not the counterparty of the financial institute	which provides the	funding. Iss	ue of securities	as an alte	rnative sour
transportation and tele	Anatomy, Mobility and Safety of Man			K	7	2
	nical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomic	cal structure of musc	les. Blood c			
•	scular-skeletal system. Injury of human organs and musculo-skeletal system during tra				-	
	ve means and traffic safety regulations.			1	_	
	Animation and Visualization and modeling of NURBS, Patch objects, selection of objects (according to filter and pro	nerties) 3D Studio M	IAY evetem	ı	Z	2 Atmosphe
	ng filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and		-	•		-
	Applied Ecology	, , , , , , , , , , , , , , , , , , , ,	,		Z	2
1	ical concepts and principles, ecosystem, ecological factors, energy flow through the e	cosystem. Application	n of knowle	edge within EIA	document	tation. Spec
	ogy - origin and historical development. Landscape definition and classification. Succe	ss. Traffic construction	ons in the c	ountryside. Lan	ndscape an	nd nature
otection. Applied ecological 20Y1AE					Z	2
-	Applied Electronics ductor components, their principles, characteristics and typical connection diagrams.	Semiconductor PN i	unction dioc	1	- 1	_
	es. Functions of basic electronic circuits and methods for their designs (rectifiers, volt	-			-	-
	and noninverting amplifier).					
	Barrierless Transport			I	Z	2
	ccessible public transportation in terms of architectural barriers and also for transporta t roads, railway stations, public transport stops, terminal buildings, vehicles, public trans					
	ill be supplemented by practical examples.	sport, information and	a onemation	r systems and ti	ianoportati	
15Y1BO	Work Safety and Health Protection in Transportation			K	Z	2
_	definition of terms, risks and possible health damage, working conditions and health p	protection with focus	on transpo	rtation. Health p	protection p	orogrammes
	and foreign business trips, statistics, working practice.			1 1/	- T	
	Error Detection Codes for Interlocking Systems methods for its assuring. Safety codes linear codes, cyclic codes, BCH codes, Reed-S	colomon codes Trans	mission ch	I I	Z on of transr	2 mission erro
	error. Design and assessment of detection codes; requirements of the European stan		3111331011 011	aririois, actoon	on or trainsi	111331011 0110
	Unmanned aircraft systems 1			K	Z	2
	elopment. Aircraft design. Legislation in force in the Czech Republic. Planning and exe	cution of the flight. A	irspace div	sion. Operation	al risks an	d operation
ocedures. Practical flight				1	_	
	Biometric Methods ithentication methods, principles and performance measurement of biometric systems	a overview of hiemes	tric tochnol		Z	2
	I, 2D and 3D face recognition, vein patterns on the wrist, ear biometrics, fingerprint re			_	-	_
_	safety and risks of biometric technologies.					
	History of Railway				Z	2
	eam railways, railway network development in the 2nd half of 19th century, regional ra					
	rvelopment in the 2nd half of 20th century, high-speed railway origins, railway lines closi Junctions. Excursions and projections.	ng, important long-d	stance trair	i connections, r	anway iine:	s construction
	Project Documentation in Practice			K	Z	2
1	eating. Project documentation types. Support materials for project documentation creating.	ating. Building permi	t obtaining			
reation of some project						
	Public Sector Economy			1	Z	2
	neory of public sector, public choice theory, externalites, decisions about public finance				-	
	te budget, management of public projects a their economic efficiency assessment, way Flectronics and hardware in security of transportation	or elaboration of PP	r projects,		7 tunas, pro	ogram HDIM 2
23Y1FH						

Types and parameters of signals. Passive circuits, properties, basic measurements. Passive filters, semiconductors. Operational amplifiers, basic circuits, parameters. Active filters. Power supplies. Logic circuits. AD converters. Connection of analog and digital parts. Basic blocks of digital signal processing. Measurement processing. Design and fabrication methods

Electronics and hardware in security of transportation

in electronics.

620Y1EK	Qualification in Electrical Engineering	KZ	2
•	h measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock haza	=	_
-	red currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legisl	lation, standards a	and regulations
	safety and electrical engineering.	1/7	-
616Y1EN	Energy Requirements of Vehicles	KZ	2
-	ng inertial of the vehicles. Types of energy - kinetic, static, heat, chemical and others. Ways of energy change into kinetic enel engine. Energy accumulation means, accumulator, flywheel, fuel cell. Energy recuperation. WTW analysis.	rgy. Combustion e	ingine, electric
620Y1EA		KZ	2
	Environmental Aspects of Transport , weather observation, road meteorology. Weather forecasting, data assimilation, probabili		
•	nts and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transp		
615Y1EH	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		
=	er's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and		
New quality of French-G	Serman relationship - a driving power of starting European integration.		
618Y1EM	Experimental Methods in Mechanics	KZ	2
	f experimental mechanics. Sensors for mechanical testing. Overview of experimental methods. Destructive and non-destructive	_	_
	s and sample preparation. Tensile and bending tests. Electrical resistance strain gages. Optical based strain measurement. F	atigue and lifetim	e prediction.
	testing. Introduction to electron microscopy. Errors in measurement.		
615Y1FD	French Area Studies and Transportation	KZ	2
	l regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air tra ure. Current political system. System of education, studying in France. Selected authors of French literature. French gastrono	-	erminology.
			2
614Y1HW	Computer Hardware basics of logical circuits design and their realization using FPGA. In detail, description of computer architecture and separate	KZ	2
arithmetic and logical ur		e parts designing -	· controllers,
615Y1HL	History of Civil Aviation	KZ	2
	religion you civil Aviation velopment of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of	1	
	aviators. Helicopters. CSA airplanes. Development of aircrafts in Czechoslovakia between the years 1945-1989. Classic era	•	
•	civil aviation. Airline companies. Supersonic flying.		
615Y1HD	History of City Mass Transport	KZ	2
	isport in the world, development of tram, bus and trolley-bus systems. History of transport networks in the world, current tren		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.	
612Y1HD	Traffic Noise	KZ	2
Acoustic introduction, ba	asic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regulat	tions. Creation acc	oustic climate in
	acoustic, noise transmission, soundproofing. Types of noise sources in area. Determination of acoustic situation in the area	of interest. Metho	odology of
	ement of transport noise. Acoustic studies, measuring protocol.		
615Y1HE	Work Hygiene and Ergonomics in Traffic	1 127	2
	,,	KZ	
-	upational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of these	e factors on health	of workers.
Creation and protection	upational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of these of working conditions that do not damage public health. Mutual links man-machine-environment. Adaptation of technology to	e factors on health	of workers.
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623Y1MK	Crisis Situation Management in Critical Infrastructure	KZ	2
	infrastructute elements on all levels, their protection systems, responsibilities of particular agencies of the state administration incounce particular safety provisions. Physical and cyber protection of critical infrastructure with special attention to the soft ta	ŭ	vernment, and
623Y1MU	Emergency Events Management Solution in Transport Infrastructure	KZ	2
	pency events with emphasis of the transport infrastructure events and their solution management. Knowledge in the emergency		
	the transport infrastructure.		
	Marketing in Transportation arketing applied to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transpor	KZ rt and the resulting	2 g differences in
the application of marke		t and the recalling	g amoronoco m
618Y1MT	Engineering Materials	KZ	2
_ ·	main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers : nd to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's selectior	· ·	attention is paid
621Y1MP	Matlab for project-oriented study	KZ	2
	focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exercises		_
	sed on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improvem		
614Y1MP Assemblies programmin	Modeling Complex Assemblies and Models in Parametric Modeller g - tools and methodology of working subassemblies and assemblies, sheet metal parts modelling, welded assemblies, pipe	KZ lines. and distribu	2 ition lines.
	ndering - physical and material properties, lighting sources. MKP - visual example.		
615Y1MK	Modern History in Context: Every Day Life and Transport	KZ	2
	odern history of every day life, science, technology and transport in a wider context.	V7	2
615Y1NE Recent economic and so	German in the Economy and Society ocial issues of German speaking countries and of the EU. Reading and listening of texts. Lexical, grammatical and semantic	KZ analysis of texts.	2 Discussion on
selected topics.			
621Y1OH	Airline Business and Operations	KZ	2
	omprehensive view of the commercial, operational and transportation activities of air transport companies. It focuses on the orga strategy, economic and operational indicators. It introduces students in detail to operational processes and the essentials of tra		
· ·	omic aspects of air transport.	naportation proce	sses. It provides
623Y1OK	Protection of Critical Objects and Infrastructures	KZ	2
	ystems, critical item, risks and their courses, criticality, vulnerability, connectivity, dependability, resilience, failure, protection, s	afety of critical ob	jects and critical
infrastructures. 620Y1OI	Fare Collection and Information Systems	KZ	2
	in public transport and their components (on-board units, validators, turnstiles,). Information systems and their component		
	s (cycles, location or current delay of vehicles,). The issue of tariff systems. Other examples of clearance systems (parking).	
614Y1OJ	Object - oriented programming in JAVA	KZ	2
	apsulation, Classes, Attributes, Access Modifiers, Methods and Overloading, Special Methods (Constructors, Getters / Sette nheritance, Polymorphism, Statics, constants, interfaces, abstract classes, enum, packages, exceptions, collections, generics.	· · ·	
functions			, ,
	Operating System	KZ	2
	n GNU/Linux OS. X-window system. Rights management - users and groups, ACL rights. Filesystems and attributes. Program programs / commands. Config files. SW management, package systems. Programs in graphic shell - text, spreadsheet, graphic shell - text, spread		
	s management. Safe and secure configuration of OS. Remote administration.	,	-,
617Y1OF	Personal Finance	KZ	2
	et, financing of basic living needs), debt (loans and credits, payment instruments, interest and fees, debt trap), financing of ho cing), savings and investments (investment horizon, return, risk, investment strategy), insurance (insurance types, suitability a		
(retirement savings and		ina adequacy), se	caring the ratare
620Y1OK	Road Lighting	KZ	2
	and terms, street lighting components (luminaires, control cabinets for street lighting, street lighting cables), characteristics of luards, measurement of illuminance and luminance in road lighting, tunnels, conceptual approach to street lighting design, light		_
Relux, street lighting cor		ing calculations if	I DIALUX allu
611Y1PV	Parametrical and Multicriterial Programming	KZ	2
	of linear programming with a parameter in objective function, on right sides and in the matrix of coeficients of linear constraints		
617Y1PM	Personnel Management roup, man as personality, planning, choice, evaluation and education of human sources, work adaptation, teamwork, intercul	KZ	2
612Y1PC	Pedestrian and Cycling Transport	KZ	2
	Pedestrian crossings. Modifications for blind, dim-sighted and disabled people. Design of cycle routes network. Ways of cycle routes		sign parameters
	of cyclists from other transport modes. Cycle tracks and its design - one way streets, reserved traffic lanes, bus stops, crossing and road marking for cyclists.	ngs with other tran	sport modes,
614Y1PG	Computer Graphics	KZ	2
	e and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with ed		
	s, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics cards.		
614Y1P2	Computer Aid of Transportation Projecting 2 ation for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting,	data evebango) /	2
	relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic trans		
section). Basics of 3D m	-		
618Y1PS	Computer Simulations in Mechanics	KZ	2
	of programs for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model dev. E systems. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary		
-	ctural and modal analysis. Introduction to complex nonlinear problems.		
614Y1PI	Corporate Information System	KZ	2
	edge, components of information system, syntatic and semantic sense of data, structure of corporate information system, pa n, storage, etc.), corporate information politic and information control, risks of information system operation, legal environmer		=
	n, information system security, data protection, safety politics.	or imprination by	, c.o operation,

614Y1PZ			
	Advanced Data Processing in Spreadsheets	KZ	2
	with principles of working in a spreadsheet. Graphic layout of the table appearance, formatting of numbers, insertion of form		- 1
-	ion. Working with large spreadsheets, filters, advanced filters, database functions. Pivot tables and charts, conditional formatting	ig, solution finding	, solver, macros,
621Y1PC	and questions from various companies and training. ATC Procedures and Activities	KZ	2
-	ures, basics of communication and phraseology, aircraft identification, spacing and traffic coordination. In addition, the cours		
•	bility operational procedures. Students will during the course learn basic safety management applications applied across the		inic control at
612Y1PD	Assessment of Transport	KZ	2
	structures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibilitie		
transport structures on	he landscape. Rating fragmentation and landscape connectivity in the preparation of linear structures. Practical examples of	assessment of tra	ffic buildings on
the environment.			
620Y1PK	Product Quality Management Processes	KZ	2
	ganization management. Management systems and international standards; quality management systems. Quality products,		
=	management, management principles. Principles of process management, monitoring and measurement systems management	nt. Uniform framew	ork of standards
614Y1PJ	nt. Process management principles. Metrology and testing. Product certification.	KZ	2
	C Programming Language e. Preprocessor, basics of the C language (data types, syntax, commands), functions, pointes, dynamical memory allocation,		_
	ract data types (FIFO, LIFO, list), programming techniques (sorting, searching, recursion), using bitwise oprerators.	string, mes, struct	ares and unions.
612Y1C1	Designing Roads in Civil 3D I	KZ	2
	the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go throu	I	
particular linear building	, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The	ne course also inc	udes a basic
explanation of the traffic	building design in the real-life profession.		
612Y1C2	Designing Roads in Civil 3D II	KZ	2
	to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go throu	-	-
	, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The	ne previously acqu	ired skills are
	d. Students learn to design intersections.	1/7	
614Y1PA	3D Modeling in AutoCAD tric modeller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup creation, objects.	KZ	2
· · · · · · · · · · · · · · · · · · ·	database. Basic definition of work with lights, materials and reflexes. Models presentation.	ci dala creation, w	OIK WILLI GALA
616Y1PV	Operation, Construction and Maintenance of Vehicles	KZ	2
	uction. Vehicle maintenance. Vehicle diagnostics. Maintenence and repair plans. Engine maintenance and emission measure	ı	_
General principles of en			
621Y1PL	Operational Aspects of Aerodromes	KZ	2
Operational aspects of	perodromes. Location of aerodrome and orientation of runways. Requirements for apron. Capacity of airports runways and te	rminals. Operation	n under winter
conditions. Firefighting (units. Protection against unlawful interference. Local transport connection. Environmental protection.		
621Y1PA	Air Traffic Control Operating Procedures	KZ	2
	ne ATC simulator with the following focus - getting familiar with the simulation environment, acquiring basic habits, aircraft ide	=	-
-	rance, use of RNAV points. Practical exercises focused on the basis of vectoring, timely application of vertical spacing, EST	and K⊨V messad	e transmission
	ACH airspace, arrivals, departures and conflict solutions. Organization Disposition of Pailway Stations	-	
612Y1PU	Organization Disposition of Railway Stations	KZ	2
612Y1PU Connecting station. Pas	Organization Disposition of Railway Stations senger transport equipment. Freight transport equipment and railway traffic inside industrial company areas. Zo	KZ one stations. Form	2
612Y1PU Connecting station. Pas Reserve stations. Techn	Organization Disposition of Railway Stations senger transport equipment. Freight transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zoology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic railway n	KZ one stations. Form network.	2
612Y1PU Connecting station. Pas Reserve stations. Techn 612Y1RU	Organization Disposition of Railway Stations senger transport equipment. Freight transport equipment and railway traffic inside industrial company areas. Zo	KZ one stations. Form network. KZ	2 ation yards.
612Y1PU Connecting station. Pas Reserve stations. Techn 612Y1RU Keeping railway line ope	Organization Disposition of Railway Stations senger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zoology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic railway Railway Lines Reconstruction	KZ one stations. Form network. KZ	2 ation yards.
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612Y1PU Connecting station. Pas Reserve stations. Techn 612Y1RU Keeping railway line ope and organising possesion 616Y1RE Elementary concepts of and hybrid drive control comfort systems. 621Y1RZ The position of human renvironment of human renvironment of human renvironment of human renvironment environment of financial corporate re 621Y1SI Familiarization with the exercises focusing on be departure management 620Y1SC Principles of sensors and state (temperature, hum 617Y1SL Human resources and the of the organization. 611Y1SI	Organization Disposition of Railway Stations senger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zo ology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic railway national, maintaining lines and stations, geometrical alignment of railway line, vehicles for railway superstructure and substruction grational, maintaining lines and stations, geometrical alignment of railway line, vehicles for railway superstructure and substructors, preparation of railway lines reconstruction and maintenance, process of ralway line reconstruction. Control and Electronic Vehicle Systems regulation. Tools for analytical solution, linear system description. Basic types of a regulator (PID), properties, advantages, disa Electric drive. Vehicle communication bus (CAN, LIN, FlexRay, ISObus, KWP2000 protocole etc.). Vehicle electronic control, Human Resources Management esources in the organization and related disciplines file. Substance, importance and challenges of human resources managesource management. Human resource planning. Search, recruitment and selection of employees. Motivation, evaluation and cies of employees. Education of employees. Planning career management. Titan Simulation game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same product and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequence ports and they use this information for other business decisions. ATC Simulator simulation environment, acquiring basic habits, aircraft identification procedures, vectoring, level changes, ATC clearance, us asic vectoring, early application of vertical separation, EST and REV message passing. Practical exercises in the APPROAC procedures, conflict resolution. Sensors and Actuators a actuators. Basics of measuring theory and actuating influence. The respective technologies	KZ one stations. Form network. KZ otture maintenance KZ odvantages, function safety, communic KZ oment. Internal an remuneration of so KZ ott. Students set a cores of their decis Exercise of RNAV points H area, practicing KZ or of mechanical, expressions KZ	ation yards. 2 e, scheduling 2 on. Conventional ration and 2 d external taff. Positioning, 2 price and ons by the form 2 . Practical arrival and 2 lectro-magnetic, 2 olanning, culture 2

616Y1KS Quality and Reliability of Vehicles	KZ	2
Quality and reliability theory in design, development, production and operation of vehicles. Definition and possible approach to quality and reliable	ability. Key legislation. Fi	MEA (Failure
Mode and Effects Analysis), QFD (Quality Function Deployment), DFx (Design for Assamly, Manufacturying, Quality, Services) and other manufacturying and other manufacturity and other	ethods used in industria	l applications.
Knowledge-based systems of quality and reliability, data collection.		
612Y1SU Management and Maintenance of Roads	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	•	
medium and long-term strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities	and repair methods are	discussed in the
classroom as well as investment activity in highway engineering.	1/7	2
616Y1SO Strategy and innovation in mobility	KZ	2
Introduction to innovation, definition. Innovation strategy. Innovation life cycle and ecosystem, main sources and funding opportunities. Success co-financing, evaluation. Sprint method and its use. Innovative business model - main patterns and examples, design, strategy, processes and		-
of use). Creating an innovation strategy. Customer and value map, design and testing.	Toutiook (business plan	and possibilities
617Y1SK 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 manage	l l	
evaluation of the timetable. Vehicle circulation creation. Optimizing driver shifts and arranging them in turnus. Effects of barrier-free and public	-	-
marketing.		
621Y1TH Aircraft Technical Handling	KZ	2
Aircraft towing and pushing tractors. GPU. Air conditioning and heating units. Aircraft fuel equipment. De-acing and anti-icing units. Loading are	ıd unloading units. Equir	ment for
passangers onboarding and offboarding. Operational processes of aircraft technical handling and regulations. Modernization and technical processes	ogress.	
611Y1TG Graph Theory	KZ	2
Basic concepts and terminology of graph theory, graph representation. Problems of graph theory, problem instance. Graph search algorithms,	trees, minimum spannir	ng tree, shortest
path problem, Eulerian path, bipartite graph matching, flow networks, circulations, critical path method, traveling salesman problem. Problem of e	xistence and optimizatio	n and algorithms
for their solving. Computational complexity,dealing with NP-complete problems, heuris		
623Y1TP Criminal Law in IT and Transportation	KZ	2
Introduction of criminal law into legal order, conception of culpability and criminal delict, consequency of other legal standards. international tree	eaty and criminal law, in	vestigation of
crime, specific indicia of criminal court cases, practical examples.		
614Y1TI Creating Interactive Internet Applications	KZ	2
Possibilities of scripting language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solu	utions. Your own applicat	ion programmed
in PHP language.		
621Y1UL Aircraft Maintenance	KZ	2
Aircraft operations and technical operations. Maintenance and work processes. Defects search methods, status check diagnostic tools. Selectic	· · ·	
Basic documentation for maintenance. Optimization of time maintenance intervals. Regulation no. 1321/2014 Part 145. Human factors of aircrafts and the state of t	aft maintenance. Regula	tion of director
EASA for aircraft maintenance. Seminars will be focused on practical application.	147	
614Y1UP Editing of Theses in MS Word	KZ	2
Students will be introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply style		
figures, tables, graphs, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for se so that they are able to concentrate mainly on writing a thesis.	amiess editing dissertati	ions and meses,
618Y1UK Introduction of Rail Vehicles	KZ	2
Basic characteristics and parameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of r	1	_
track resistance. Total running resistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail		-
and electric drive. Design concept rail vehicles and drive of wheel set.	rvernoie riyaromeenam	c, nyarodynamic
612Y1VR Public Transport in Cities and Regions	KZ	2
Professional and political pillars of public transport. Accessibility of public transport. Transport demand management and directional coordinati	1 1	
Basic operating parameters and transport variations. Types of lines according to their routing and basic operating parameters. Time coordinati	· · · · · · · · · · · · · · · · · · ·	_
Organization of tram operation in Prague. Tram safety.		
623Y1VS Negotiation and Cooperation	KZ	2
Code of conduct for negotiation. The influence of personality traits on the negotiations. Negotiation and commanding. Teamwork. Variants team	1	
Principles of negotiation, the essence of negotiation, the differences in negotiation in business and in crisis situations, the principle of "win both	h", specifications and bid	dding, the role of
trust.		
614Y1VM Development of Applications for Mobile Devices	KZ	2
Object oriented programming, Java programming language, development environment, operating system Android, development application - v	widgets, containers, thre	ads, menu,
permissions, services, GUI.		
616Y1VT Development in Railroad Vehicles	KZ	2
Railroad vehicles traction. Railroad vehicle parametres regulation. Control and driving of railroad vehicles. Importance in heavy duty and person	onal transportation. Critic	cal situation
assesment. New materials in design. International standardization.		
614Y1WG Webdesign	KZ	2
Students will learn the basics of HTTP communication, URL and addressing, HTML5 markup language, advanced CSS3 techniques, accessil	ble and usable web rule:	s, responsive
webdesign, content management systems, web server installation + configuration directives. The subject matter will be trained on examples.		
614Y1W1 Webdesign 1	KZ	2
Students will learn the basics of communication HTTP, URL and addressing, markup languages HTML and XHTML, HTML tags, rules of web a		
and selectors, the issue of web browsers, creating one to three column layout pages, sites validation, conditional comments. Topics will be pra		
614Y1W2 Webdesign 2	KZ	2
Students will learn advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEC	J, web server installation	n + configuration
directives. Topics will be practiced on practical examples.		_
616Y1ZG Introduction into Applied Computer Graphics	KZ	2
Computer graphics, division and applications with emphasis on transport, including development and research. Colours, colour perception, co	-	-
and 3D generation, elementary algorithms for graphic data workout. Visualisation principles and tasks, technics, graphics and visualisation HV	v pasics. Introduction to	∠⊔ and 3D
graphics software.	1/7	2
614Y1ZM Fundamentals of parametric and adaptive modeling Residuals and parts creation. Sketch drawing by help of geometric relations, parametric dimensions, creation of adaptive model.	Hals from 2D sketches In	2
Basics of work at products and parts creation. Sketch drawing by help of geometric relations, parametric dimensions, creation of adaptive mod from and to another systems. Fundamentals of assemblies creation.	eis nom 20 skelches. In	nport and export

044)/4714	E L : MATIA D D	147	
611Y1ZM	Foundation of MATLAB Programming	KZ	2
To explain the principle	of algorithmization, flow charts, description of MATLAB environment and its settings, MATLAB help, mathematical operators, r	natrices and elem	ents operations,
control flow, inputs and	outputs, graphics, optimization and program code debugging.		
614Y1ZJ	Fundamentals of programming in JAVA	KZ	2
Introduction to the Java	SE Platform, IDE Installation and First Project, Comments, Variables and Type System, Operators, User Input and Parsing, O	Chain and Chain	Conversion, Text
Chain and Mathematica	I Methods, Terms, Relational Operators and Switches, Cycles for, while, foreach, Field - declaration, initialization, methods for	or field work, ASC	II, Functions,
parameters, return value	e, recursion, Program creation		
612Y1ZU	Principles of Urbanism	KZ	2
Survey on history of city	and settlement building. Functional components and their mutual relations (working, living, recreation, transportation). Space	ial arrangement o	f settlements.
Types of towns or cities	with a certain prevailing function, forms of their development. Brief overview of land-use planning.		
615Y1ZV	East-West dichotomy: Prelude to the Cold War	KZ	2
Historical prologue, evol	ution of the "West" and "East" from the 1500s. Focus on the history in the period between 1850 nad 1950. Milestones and cont	tinuity of the interr	national relations
in the end of 19th centu	ry and the beginning of the 20th century. Revolutions, the causes and consequences. Scientific and technological progress, t	the causes and co	onsequences.
Economic and financial	history. Social changes. Discussions on texts, sources.		
616Y1ZL	Vehicle Testing, Legislation and Construction	KZ	2
Vehicle costruction, agg	regate computing, driving resistance, building and parameters of traction, constructional arrangement of personal cars, truck	s, buses, motorbi	kes, legislation
in the EU and in the wor	rld, creation of technical legislation, testing methods, vehicle tests, accelerated tests, mathematical modelling in testing.		
Name of the bl	lock: 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-DC

Name of the group: Bachelor Full-Time TET voluntary

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

Credits in the group: 0 Note on the group:

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
614DPK	Digital Support for Designing of Roads and Highways	Z	0	0P+2C	Z	V
614DZT	Digital Support for Railway Lines	Z	0	0P+2C	L	V
611SCFZ	Seminar of Physics	Z	0	0P+2C	Z	V
621SLD	Seminar of Air Transport	Z	0	0P+2C	L	V
618SPP	Seminary from Elasticity and Strength	Z	0	0P+2C	Z	V
618STD	Seminary from Technical Documentation	Z	0	0P+2C	Z	V
618SS	Seminary from Structural Analysis	Z	0	0P+2C	L	V
611SSF	Secondary School Physics Course	Z	0	0P+2C	L	V
TVKLV	Physical Education Course	Z	0	7dní	L	V
TVKZV	Physical Education Course	Z	0	7dní	Z	V

IVNZV	Physical Education Course		0	/ ani	_	V
Characteristics	of the courses of this group of Study Plan: Code=VP-BP-TET-20/21	-DC Name=B	achelor F	ull-Time	TET vol	untary
614DPK	Digital Support for Designing of Roads and Highways				Z	0
Seminars possibilitie	es of technical processing problems focused on designing of roads and highways.			'	'	
614DZT	Digital Support for Railway Lines				Z	0
Seminars possibilitie	es of technical processing problems solved in the field of railway lines.					
611SCFZ	Seminar of Physics				Z	0
Solving problems or	n kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum med	hanics, thermodyr	namics.		,	
621SLD	Seminar of Air Transport				Z	0
performance. Flight	terminology, basic rules. VFR / IFR. Basics of aerodynamics. Propulsion of aircraft. Aircraft de planning, optimization of speed and heights, minimum fuel. Limitations of operation, mainten- irlines and economics. Space technologies.	•	•	•	•	
618SPP	Seminary from Elasticity and Strength				Z	0
Excersise for practic	ce. Tension and compression. Bending of beam. Shear stress during bending of beam. Design	n and analysis of c	ross section	of beam. An	alysis of de	eflection curve
of beam. Torsion of	circle cross section. Combined loading. Stability of compressed bar and buckling.					
618STD	Seminary from Technical Documentation				Z	0
Technical standards	s, international standardization, technical drawings, representation of technical objects, techni	cal diagrams and	charts, dime	nsional and	geometrica	I accuracy,
arrangement of drav	wing sheets.					
618SS	Seminary from Structural Analysis				Z	0
	se. General system of forces. Reactions of mass objects and compound systems. Internal forces	•			•	
	l works for calculation of reactions of staticaly determinate systems. Determination of axial fo	rces in truss const	ruction - me	thod of joints	and methor	od of sections.
Geometry of cross s	sections. Plane fiber polygons.					

611SSF	Secondary School Physics Course	Z	0
Basics of kinematics, dy	namics, thermodynamics, electric field and magnetic field.	•	
TVKLV	Physical Education Course	Z	0
TVKZV	Physical Education Course	Z	0

Name of the block: Jazyky

Minimal number of credits of the block: 6

The role of the block: J

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

Name of the group: Bachelor TET Full-Time 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:

features. Practice of oral and written presentation.

features. Practice of oral and written presentation.

Foreign Language - Italian 4

615JZ4I

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
615JZ3F	Foreign Language - French 3 Irena Veselková Irena Veselková (Gar.)	Z	3	0P+4C+10B	S Z	J
615JZ3I	Foreign Language - Italian 3	Z	3	0P+4C+10B	Z	J
615JZ3N	Foreign Language - German 3 Eva Rezlerová	Z	3	0P+4C+10B	3 Z	J
615JZ3R	Foreign Language - Russian 3 Marie Michlová	Z	3	0P+4C+10B	Z	J
615JZ3S	Foreign Language - Spanish 3	Z	3	0P+4C+10B	Z	J
615JZ4F	Foreign Language - French 4 Irena Veselková Irena Veselková (Gar.)	Z,ZK	3	0P+4C+10B	B L	J
615JZ4I	Foreign Language - Italian 4	Z,ZK	3	0P+4C+10B	B L	J
615JZ4N	Foreign Language - German 4 Eva Rezlerová, Sv tlana Petrová, René Skalický	Z,ZK	3	0P+4C+10B	B L	J
615JZ4R	Foreign Language - Russian 4 Marie Michlová, Vilma Gottwaldová	Z,ZK	3	0P+4C+10B	B L	J
615JZ4S	Foreign Language - Spanish 4	Z,ZK	3	0P+4C+10B	L	J

Characteristics of the courses of this group of Study Plan: Code=JZ-BP-TET-22/23-DC Name=Bachelor TET Full-Time 2nd Language

Courses from 202	r the courses of this group of Study Flan. Code=32-BF-1E1-22/23-DC Name=Bachelor 1E1 1	ruii-Tillie Ziid	ı Languaye
615JZ3F	Foreign Language - French 3	Z	3
Grammar and stylistics	. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement	of language struct	ture knowledge
and perceptive and cor	nmunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Wo	rk with (profession	nal) text and its
features. Practice of ora	al and written presentation.		
615JZ3I	Foreign Language - Italian 3	Z	3
Grammar and stylistics	. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement	of language struct	ture knowledge
and perceptive and cor	nmunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Wo	rk with (profession	nal) text and its
features. Practice of ora	al and written presentation.		
615JZ3N	Foreign Language - German 3	Z	3
Grammar and stylistics	Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement	of language struct	ture knowledge
and perceptive and cor	nmunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Wo	rk with (profession	nal) text and its
features. Practice of ora	al and written presentation.		
615JZ3R	Foreign Language - Russian 3	Z	3
Grammar and stylistics	Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement	of language struct	ture knowledge
and perceptive and cor	nmunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Wo	rk with (profession	nal) text and its
features. Practice of ora	al and written presentation.		
615JZ3S	Foreign Language - Spanish 3	Z	3
Grammar and stylistics	. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement	of language struct	ture knowledge
and perceptive and cor	nmunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Wo	rk with (profession	nal) text and its
features. Practice of ora	al and written presentation.		
615JZ4F	Foreign Language - French 4	Z,ZK	3
Grammar and stylistics	Selection of conversation and professional topics based on the language level and study focus at the Faculty Improvement	of language struct	ture 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

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

Z,ZK

615JZ4N	Foreign Language - German 4	Z,ZK	3		
Grammar and stylistics.	Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of	of language struct	ure knowledge		
and perceptive and com	nd 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 ora	l and written presentation.				
615JZ4R	Foreign Language - Russian 4	Z,ZK	3		
Grammar and stylistics.	Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of	of language struct	ure knowledge		
and perceptive and com	municative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Wo	rk with (profession	nal) text and its		
features. Practice of ora	and written presentation.				
615JZ4S	Foreign Language - Spanish 4	Z,ZK	3		
Grammar and stylistics.	Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of	of language struct	ure knowledge		
and perceptive and com	ımunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Wo	rk with (profession	nal) text and its		
features. Practice of ora	I and written presentation.				

List of courses of this pass:

Code	Name of the course	Completion	Credits
611CAL1	Calculus 1	Z,ZK	7
Sequence of real n	umbers and its limit. Basic properties of mappings. Function of one real variable, its limit and derivative. Indefinite integral, Newton integ Riemann integral. First-order differential equations, linear differential equations.	ral, Riemann integr	al, improper
611CAL2	Calculus 2	Z,ZK	5
Linea	ir differential equations and their systems, differential calculus of functions of several real variables. Riemann integral in Rn. Line and	surface integrals.	ı
611EMOP	Electromagnetic Field and Optics	Z,ZK	4
04457	Electric field. Electric current. Magnetic field. Electromagnetic field. Optics. Basics of solid-state physics.	7 714	
611FYZ	Physics Kinematics, dynamics, Newton's laws, force fields, mechanics of continuum, thermodynamics, introduction to electrostatics and elec	Z,ZK tric current.	5
611GIE	Geometry	KZ	3
Orthographic and	d oblique projections, linear perspective. Topographic surfaces and their orthogonal projection. Differential geometry of curves - paran and curvature, Frenet's trihedron. Kinematics - a curve as a trajectory of the motion, the velocity and acceleration of a particle movin	neterization, arc of	
611LA	Linear Algebra	Z.ZK	3
	par combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and the their applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classificat	ir solvability. Deteri	_
611MDSD	Collecting and Processing of Traffic Data	KZ	3
	ciples of traffic detection and data collection, specific problems of the field of traffic data. Data preprocessing and analysis for use in a	I	_
611MSP	Modeling of Systems and Processes	Z,ZK	4
	stem, external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of differe nlinear system, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer function		•
	Discretization of continuous systems. System interconnection.		
611SCFZ	Seminar of Physics	Z	0
	Solving problems on kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermodynamics	ynamics.	
611SSF	Secondary School Physics Course	Z	0
611STAT	Basics of kinematics, dynamics, thermodynamics, electric field and magnetic field.	Z,ZK	4
	Statistics Sitatistics Statistics Sility, random variable and its description, known distributions, random vector, function of random variable. Methods of point estimation.	1 '	
	rrelation, linear regression, correlation coefficient, coefficient of determination, the general linear model, statistical inference in linear re multiple regression, the use of matrices in regression.	•	
611TGA	Graph Theory and its Applications in Transport	Z,ZK	4
	f graph theory, paths in graphs, flows in networks, location problems, design problems on graphs, optimum routing, use of graphs in a		1
611X31D	Project 1 DOS	Z	2
611X32D	Project 2 DOS	Z	2
611X33D	Project 3 DOS	Z	4
611Y1BK	Error Detection Codes for Interlocking Systems	KZ	2
	an and methods for its assuring. Safety codes linear codes, cyclic codes, BCH codes, Reed-Solomon codes. Transmission channels, de	I .	l
	probability of undetected error. Design and assessment of detection codes; requirements of the European standard EN 501		
611Y1PV	Parametrical and Multicriterial Programming	KZ	2
-	plem of linear programming with a parameter in objective function, on right sides and in the matrix of coeficients of linear constraints. Co	I	l .
611Y1SI	Transportation Software Engineering	KZ	2
Basic concepts of s	software engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and implement	ntation using forma	l techniques
	and practical usuage.	ı	1
611Y1TG	Graph Theory	KZ	2
•	d terminology of graph theory, graph representation. Problems of graph theory, problem instance. Graph search algorithms, trees, mirrian path, bipartite graph matching, flow networks, circulations, critical path method, traveling salesman problem. Problem of existence a for their solving. Computational complexity, dealing with NP-complete problems, heuris		
611Y1ZM		KZ	2
	Foundation of MATLAB Programming ciple of algorithmization, flow charts, description of MATLAB environment and its settings, MATLAB help, mathematical operators, mat	I	I
io explain the him		nices and elements	operations,
	control flow, inputs and outputs, graphics, optimization and program code debugging.		

612DOSI	Traffic Surveys and Simulations	Z,ZK	3
-	ction in road transport. Traffic surveys. Automatic traffic counting. Preparation and implementation of traffic survey. Description of indi-		
practical example	es from real measurements. Methods of data processing and evaluation. Principles of simulation, SW environment for creating traffic	models. Traffic mo	del design
	procedure, calibration. Processing of a simple transport model based on real data.		
612MDE	Transport Models and Transport Excesses	Z,ZK	3
Parameters of the t	raffic flow and methods for their measurement. Models of the traffic flow, communications load, line and urban systems. Theory of qu	eues, shock wave	es. Quality o
transport and its a	issessment. Statistical characteristics of transport. Transport excesses, their analysis, the causes, identify and minimize the consequ	ences. Improving	of transport
	safety and fluency.		
612MKOD	City Rail Transport	Z,ZK	5
City and suburba	an rail transport. Tram lines layout and city roads. Tram track geometry parameters. Tram track superstructure. Turnouts and other con	struction of tram I	ines. Tram
stops and turn spac	e. Underground and its basic characteristics. Underground nets in the world and undeground history in Prague. Underground track geon	netry parameters.	Underground
	track superstructure and substructure. Underground stations. Suburban rail transport.		
612POSD	Assessment of Transport Structures	KZ	3
EIA process - histor	rical context, impact and variants, analysis of individual phases of EIA process, SEA, legislative framework in the Czech Republic, El	J directives, imple	ementation of
EU directives, public	c participation, process in practice. Methods of assessing the effects of transport structures on the environment. SWOT analysis. Multic	riteria methods for	assessmen
	of transport structures, TUKP method. Risk analysis. Landscape.		
612PPOK	Designing Roads, Highways and Motorways	KZ	3
Definition, types, of	ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard	I speed. Route in	rural areas.
Range of vision for	stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet	y device. Crossin	gs, junctions
	intersections.		_
612PRMK	Urban Road Traffic and Design	Z,ZK	5
Composition of urba	an road, elements and routes for traffic, pedestrian and cycling transport, projection of intersections, traffic lights and its traffic safety p	-	outs, calming
	of traffic, precaution for blind & amp; partially-sighted, parking, traffic area, induction of traffic, organization and regulation of traffic		
612PUSS	Organization Disposition of Railway Stations	KZ	3
Connecting station	on. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zor	e stations. Forma	ition yards.
Reser	ve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic	railway network.	
612SDK	Highways, Motorways and Intersections	Z,ZK	4
Roads and motorwa	ays network, transport output. Types of direction curves. Hairpin bend. Stopping sight distance and overtaking sight distance. Levels of t	raffic service. Des	ign elements
of crossroads and	d intersections. Crossroads. Roundabouts. Intersections. Special types of junctions. Capacity of crossroads and intersections. Structu	re of pavement of	roads and
	motorways. Road engineering structures. Assessment of route alternatives.		
612VHD	Public Transport	Z,ZK	5
Importance of pul	blic transport, transport research, evaluation, planning of lines routes and territory operation, planning of operation parameters, prep	aration of operation	n, network
conceptions, operat	tion-technology and operation-economically conditions of planning of operation conceptions, planning of operation conception, planin	g and realisation o	of timetables
	prepare of infrastrukture (route, stops), preference of public transport, financing.		
612X31D	Project 1 DOS	Z	2
612X32D	Project 2 DOS	Z	2
612X33D	Project 3 DOS	Z	4
612Y1AE	Applied Ecology	KZ	2
	ecological concepts and principles, ecosystem, ecological factors, energy flow through the ecosystem. Application of knowledge with	1	_
	ape ecology - origin and historical development. Landscape definition and classification. Success. Traffic constructions in the country:		-
ecology. Lanusca	protection. Applied ecology.	side. Lariuscape a	and nature
612Y1C1	Designing Roads in Civil 3D I	KZ	2
	oted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through		1
	uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The		•
particular ililear bi	explanation of the traffic building design in the real-life profession.	course also iliciu	ues a basic
610V1C0		KZ	
612Y1C2	Designing Roads in Civil 3D II	l	2
	voted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through	-	-
particular ililear bu	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.	previously acquire	eu skilis ale
C40V4DC		1/7	
612Y1DS	Project Documentation in Practice	KZ	2
Froject documenta	ation creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process.	buuget and pricir	ıy. rıactıcal
040)(4115	creation of some project documentation parts.	1/7	
612Y1HD	Traffic Noise	KZ	2
	on, basic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regulation		
area, principies	of urban acoustic, noise transmission, soundproofing. Types of noise sources in area. Determination of acoustic situation in the area	of interest. Metho	aology of
040)/41/21	computing and measurement of transport noise. Acoustic studies, measuring protocol.	1/7	
612Y1KN	Combined Transportation	KZ	2
	ort strategy and legislation. Load units. Means of transport in combined transport. Combined transport systems. Transshipping areas		1
612Y1KP	Communication and Promotion of Transport Projects	KZ	2
	Public Relations and the power of public opinion. Work and tasks of PR department and press spokesperson. Communication with the	· · · · · · · · · · · · · · · · · · ·	
networks and bey	ond. Communication strategy of transport projects. Systematic goodwill building. Crisis situations in communication and preparation	or crisis commun	ication. The
0.40)/:50	influence of political marketing and political PR on transport projects. Lobbing.	1	
612Y1PC	Pedestrian and Cycling Transport	KZ	2
	ans. Pedestrian crossings. Modifications for blind, dim-sighted and disabled people. Design of cycle routes network. Ways of cycle route	-	-
tor 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	port modes,
04637755	crossroads. Traffic signs and road marking for cyclists.		
612Y1PD	Assessment of Transport	KZ	2
	sport structures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibilities o	· · · · · · · · · · · · · · · · · · ·	
transport structures	s on the landscape. Rating fragmentation and landscape connectivity in the preparation of linear structures. Practical examples of ass	essment of traffic	buildings or
	the environment.		

			1
612Y1PU	Organization Disposition of Railway Stations on Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zor	KZ	2
	ve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic		iioii yaius.
612Y1RU	Railway Lines Reconstruction	KZ	2
Keeping railway lir	ne operational, maintaining lines and stations, geometrical alignment of railway line, vehicles for railway superstructure and substruct and organising possesions, preparation of railway lines reconstruction and maintenance, process of ralway line reconstructio		scheduling
612Y1SU	Management and Maintenance of Roads	KZ	2
-	ith ownership of roads in the Czech Republic and the administration of the road at the state and county level. It is presented develop		
medium and long-te	erm strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and repail classroom as well as investment activity in highway engineering.	r methods are disc	ussed in the
612Y1VR	Public Transport in Cities and Regions	KZ	2
	political pillars of public transport. Accessibility of public transport. Transport demand management and directional coordination of lin		1
	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.		
612Y1ZU	Principles of Urbanism	KZ	2
Survey on history	of city and settlement building. Functional components and their mutual relations (working, living, recreation, transportation). Spacial Types of towns or cities with a certain prevailing function, forms of their development. Brief overview of land-use planning.	-	ettiements.
612ZAR	Introduction to Architectural Design	Z	3
	architecture of traffic systems. Bus and trolley-bus transport. Tramway and town tracks. Design of vehicles. Subway. Railway transpo	rt. Railway stations	_
	communications. International airports.		
612ZELP	Railway Operation	Z,ZK	4
Legislation in railw	ray transport. Railway vehicles. Railway signals and signal devices. Railway traffic organisation and operation. Simplified railway traffi brakes. Railway vehicles marking. Operation intervals. Theoretical graph of train running.	operation. Kallw	ay venicies
612ZTS	Railway Lines and Stations	Z,ZK	4
	ilway track geometry parameters. Route layout of railway lines. Railway line construction - railway substructure and superstructure. S	,	1
	Railway control systems in relation to infrastructure. Operating and carriage points. Railway lines net and category. Traction in rail to		,
612ZYDI	Introduction to Transportation Engineering	Z,ZK	2
Role of transportation	on in land-use planning. Basic terms in transportation engineering. Traffic survey and traffic prognosis. Introduction to topic of roads, p impacts of transportation to environment and safety.	oublic mass transpo	ort. Negative
614ASD	Algorithm and Data Structures	KZ	3
	riliarized with selected basic and derived data structures, algorithms, their properties and their design procedure. Students will analyze	I	_
solutions to the se	et task and the resulting algorithm write by means of flowcharts, practice in reading algorithms recorded by means of the flowchart and	nd use the basics	of Boolean
0445450	algebra with forming the conditions for the algorithms.	147	
614DATS	Database Systems f database systems, conceptual model, relational data model, the principles of normal forms, relational database design, security an	KZ	database
basic concepts o	queries, relational algebra, SQL language, client / server, multilayer architectures, distributed database systems. Access to data via		ualabase
614DPK	Digital Support for Designing of Roads and Highways	Z	0
	Seminars possibilities of technical processing problems focused on designing of roads and highways.	'	· -
614DZT	Digital Support for Railway Lines	Z	0
614KSP	Seminars possibilities of technical processing problems solved in the field of railway lines. Constructing with Computer Aid	KZ	2
	constructing with computer Aid m determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic common wor	I .	1
· ·	Co-ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting possible constructions).		
	profiles, drawings with raster foundaments).		,
614PODP	Computer Aid of Transportation Projecting	KZ	3
-	plication for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, dat ttes, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transitio		
modification (attribu	section). Basics of 3D modelling.	ir our vo, orooo und	riorigitadiria
614PRG	Programming	KZ	2
Algorithm develop	oment, methods of structured programming, high-level programming languages, basics of C programming languages (types, variable	es, conditions, cycle	es, arrays,
C4.4V24D	functions), programming techniques, complexity.	7	
614X31D	Project 1 DOS Project 2 DOS	Z Z	2
614X32D 614X33D	Project 2 DOS Project 3 DOS	Z	2
614Y1AV	Animation and Visualization	KZ	2
	tions and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and Spa		_
	s, rendering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animation		
614Y1BE	Barrierless Transport	KZ	2
	less accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students Inment roads, railway stations, public transport stops, terminal buildings, vehicles, public transport, information and orientation systems	_	_
or particiless envilo	riment roads, railway stations, public transport stops, terminal buildings, venicies, public transport, information and orientation systems Theoretical knowledge will be supplemented by practical examples.	and hansportation	i teorii lology.
614Y1BM	Biometric Methods	KZ	2
Basic biometric te	rms, authentication methods, principles and performance measurement of biometric systems, overview of biometric technologies, has	and geometry, iris r	ecognition,
retina recognition m	nethod, 2D and 3D face recognition, vein patterns on the wrist, ear biometrics, fingerprint recognition, skin spectroscopy, behavioral r	methods, the use of	of biometrics
614Y1HW	in transport applications, safety and risks of biometric technologies.	KZ	2
	Computer Hardware cture, basics of logical circuits design and their realization using FPGA. In detail, description of computer architecture and separate	I	1
	arithmetic and logical units, I/O subsystem.		
614Y1MP	Modeling Complex Assemblies and Models in Parametric Modeller	KZ	2
Assemblies prog	gramming - tools and methodology of working subassemblies and assemblies, sheet metal parts modelling, welded assemblies, pipe	lines, and distribut	ion lines.
	Photorealistic output rendering - physical and material properties, lighting sources. MKP - visual example.		

614Y1OJ	Object - oriented programming in JAVA	KZ	2
	ing, Encapsulation, Classes, Attributes, Access Modifiers, Methods and Overloading, Special Methods (Constructors, Getters / Setters		
Reference Data Ty	pes, Inheritance, Polymorphism, Statics, constants, interfaces, abstract classes, enum, packages, exceptions, collections, generics, lam	ıbda expressions,	anonymous
	functions		_
614Y1OP	Operating System	KZ	2
	stallation GNU/Linux OS. X-window system. Rights management - users and groups, ACL rights. Filesystems and attributes. Programs	•	
runlevels. Basic	console programs / commands. Config files. SW management, package systems. Programs in graphic shell - text, spreadsheet, graphic	c editors, sound,	video and
	communication. Services management. Safe and secure configuration of OS. Remote administration.		
614Y1P2	Computer Aid of Transportation Projecting 2	KZ	2
	pplication for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, data		
modification (attrib	utes, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transition	curve, cross-and	l longitudinal
	section). Basics of 3D modelling.		_
614Y1PA	3D Modeling in AutoCAD	KZ	2
Work in 3D non-p	parametric modeller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup creation, object of	lata creation, wor	k with data
	connected with external database. Basic definition of work with lights, materials and reflexes. Models presentation.		_
614Y1PG	Computer Graphics	KZ	2
Basic formats of	graphic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with editing		in the user
	level scope) using layers, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics		_
614Y1PI	Corporate Information System	KZ	2
	on-knowledge, components of information system, syntatic and semantic sense of data, structure of corporate information system, par		-
(personalistic, prod	duction, storage, etc.), corporate information politic and information control, risks of information system operation, legal environment of	information syster	m operation,
	state information system, information system security, data protection, safety politics.		_
614Y1PJ	C Programming Language	KZ	2
C programming lar	nguage. Preprocessor, basics of the C language (data types, syntax, commands), functions, pointes, dynamical memory allocation, string	_	and unions.
	Implementations of abstract data types (FIFO, LIFO, list), programming techniques (sorting, searching, recursion), using bitwise op		
614Y1PZ	Advanced Data Processing in Spreadsheets	KZ	2
	familiar with principles of working in a spreadsheet. Graphic layout of the table appearance, formatting of numbers, insertion of formula		-
addressing, error d	letection. Working with large spreadsheets, filters, advanced filters, database functions. Pivot tables and charts, conditional formatting, so	olution finding, sol	lver, macros,
	data analysis. Examples and questions from various companies and training.		Г
614Y1TI	Creating Interactive Internet Applications	KZ	2
Possibilities of scri	pting language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions. Your	own application p	orogrammed
	in PHP language.		
614Y1UP	Editing of Theses in MS Word	KZ	2
	introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, creat-		
figures, tables, gra	phs, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless edi	ting dissertations	and theses,
	so that they are able to concentrate mainly on writing a thesis.		
614Y1VM	Development of Applications for Mobile Devices	KZ	2
Object oriented	programming, Java programming language, development environment, operating system Android, development application - widgets,	containers, threa	ds, menu,
	permissions, services, GUI.		
614Y1W1	Webdesign 1	KZ	2
Students will learn	the basics of communication HTTP, URL and addressing, markup languages HTML and XHTML, HTML tags, rules of web accessibility	and usability, CS	S properties
and selectors	s, the issue of web browsers, creating one to three column layout pages, sites validation, conditional comments. Topics will be practiced	d on practical exa	ımples.
614Y1W2	Webdesign 2	KZ	2
Students will learn	advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, web serv	er installation + c	configuration
	directives. Topics will be practiced on practical examples.		
614Y1WG	Webdesign	KZ	2
Students will lear	rn the basics of HTTP communication, URL and addressing, HTML5 markup language, advanced CSS3 techniques, accessible and u	sable web rules, r	responsive
	webdesign, content management systems, web server installation + configuration directives. The subject matter will be trained on expension of the configuration of the configurat	kamples.	
614Y1ZJ	Fundamentals of programming in JAVA	KZ	2
Introduction to the	Java SE Platform, IDE Installation and First Project, Comments, Variables and Type System, Operators, User Input and Parsing, Chai	n and Chain Con	version, Text
Chain and Mathe	ematical Methods, Terms, Relational Operators and Switches, Cycles for, while, foreach, Field - declaration, initialization, methods for fi	ield work, ASCII,	Functions,
	parameters, return value, recursion, Program creation		
614Y1ZM	Fundamentals of parametric and adaptive modeling	KZ	2
	products and parts creation. Sketch drawing by help of geometric relations, parametric dimensions, creation of adaptive models from 21		I
	from and to another systems. Fundamentals of assemblies creation.	, ,	
614ZDA	Data Processing	Z	3
	a processing and analysis tools. Practical part of the training - introduction to the working environment, applied examples of data processing		_
	lods of presentation of the results. Seminar papers on open data. Consultation hours for seminar papers. Seminar paper submission a		_,
615DPLG	Transportation Psychology	Z	2
	Transportation Psychology ogy and its basic concepts. Information intake, decision-making and behaviour. Performance. Engineering psychology and vehicle constr	_	1
	ogy and its basic concepts. Information intake, decision-making and behaviour. Performance, Engineering psychology and vehicle constr el route and traffic conditions, accidents and traffic incidents. Selection and training of the staff. Work and leisure. Age as a factor in tra	-	-
			1
615JZ1A	Foreign Language - English 1	Z nmunicativo skills	3
Grammatical Struct	tures and style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and con-		. Liernentary
045 170 4	stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles o		
615JZ2A	Foreign Language - English 2	Z,ZK	3
Grammatical struct	tures and style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and con		. ∟iementary
0	stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles o		
615JZ3F	Foreign Language - French 3	Z	3
'-	listics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la		_
and perceptive an	nd communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work w	/ith (professional)	text and its
	features. Practice of oral and written presentation.		

615JZ3I	Foreign Language Italian 2	Z	3
Grammar and styli	Foreign Language - Italian 3	-	_
	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work w		_
	features. Practice of oral and written presentation.	,	
615JZ3N	Foreign Language - German 3	Z	3
Grammar and styli	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la	inguage structure	knowledge
and perceptive and	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work w	ith (professional)	text and its
	features. Practice of oral and written presentation.		
615JZ3R	Foreign Language - Russian 3	Z	3
	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la		_
and perceptive and	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work w	ith (professional)	text and its
045 1700	features. Practice of oral and written presentation.		
615JZ3S	Foreign Language - Spanish 3	Z	3
=	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lad communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work w		_
and perceptive and	features. Practice of oral and written presentation.	nur (proicssionar)	toxt and its
615JZ4F	Foreign Language - French 4	Z.ZK	3
	stics. 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 w		_
	features. Practice of oral and written presentation.		
615JZ4I	Foreign Language - Italian 4	Z,ZK	3
	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la	•	knowledge
and perceptive and	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work w	vith (professional)	text and its
	features. Practice of oral and written presentation.		
615JZ4N	Foreign Language - German 4	Z,ZK	3
=	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la		_
and perceptive and	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work w	ith (professional)	text and its
045 1745	features. Practice of oral and written presentation.	7.71/	
615JZ4R	Foreign Language - Russian 4	Z,ZK	3
=	stics. 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 w features. Practice of oral and written presentation.	nin (professional)	text and its
615JZ4S	·	Z.ZK	2
	Foreign Language - Spanish 4	,	3
=	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of lad communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work w		_
and perceptive and	features. Practice of oral and written presentation.	ntii (prolessional)	text and its
615X31D	Project 1 DOS	Z	2
615X32D	Project 2 DOS	_	
013/320		7	2
615Y22D	,	Z	2
615X33D	Project 3 DOS	Z	4
615Y1BO	Project 3 DOS Work Safety and Health Protection in Transportation	Z KZ	4 2
615Y1BO	Project 3 DOS Work Safety and Health Protection in Transportation lative, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation. He	Z KZ	4 2
615Y1BO Fundamental legis	Project 3 DOS Work Safety and Health Protection in Transportation lative, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation. He health insurance of home and foreign business trips, statistics, working practice.	Z KZ ealth protection pr	4 2 rogrammes,
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615Y1ZV	East-West dichotomy: Prelude to the Cold War	KZ	2
Historical prologue,	evolution of the "West" and "East" from the 1500s. Focus on the history in the period between 1850 nad 1950. Milestones and continui	ty of the internation	nal 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 cons	equences.
	Economic and financial history. Social changes. Discussions on texts, sources.		
616DOKY	Vehicle Technology	Z,ZK	5
Technical nome	enclature in transportation technology. Vehicle in legislation. Design. Operation. Influence on environment. Vehicle and ecology. Traction	-	eristics -
	combustion engines, electric engines, change of energy principles. Powertrain construction. Power transmission. Brake system	ms.	
616DYJV	Vehicle Dynamics	Z,ZK	5
	nanics. Wheel and axle suspension mechanism. Wheel to road positioning characteristics. Wheel - road contact. Skid and its character		
acceleration and de	celeration. Vertical dynamics, spring suspension, driving characteristics. Directional dynamics, gyroscopical characteristics. Driving sta	ability conditions. A	erodynamic
	forces. Driving and feedback. ABS, ESP.		r
616PAV	Passive Safety	Z,ZK	4
Road accident eval	uation. Testing and legislation. Crash tests. Carbody properties. Injury mechanics. Restrain systems. Airbags. Road user safety. Mathe	matic modelling. P	ost collision
	safety systems.		
616UDOP	Introduction into Vehicles	Z	2
Vehicles and trans	portation systems. Functionality and setup. Movement and drive principles. Engines and their characteristics. Rail, road, air and water	r transport. Alterna	tive means
040)/045	of transport. Lifting equipment and conveyors. Legislation.	_	
616X31D	Project 1 DOS	Z	2
616X32D	Project 2 DOS	Z	2
616X33D	Project 3 DOS	Z	4
616Y1EN	Energy Requirements of Vehicles	KZ	2
Dynamics and the	driving inertial of the vehicles. Types of energy - kinetic, static, heat, chemical and others. Ways of energy change into kinetic energy	. Combustion engi	ne, electric
	drive, steam engine, air engine. Energy accumulation means, accumulator, flywheel, fuel cell. Energy recuperation. WTW analysis	ysis.	
616Y1IS	Interactive simulators and simulations	KZ	2
Simulation theor	y and application of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical models.	odels. Computing r	methods.
Simul	ation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and intera	ctive simulators.	
616Y1KS	Quality and Reliability of Vehicles	KZ	2
	ility theory in design, development, production and operation of vehicles. Definition and possible approach to quality and reliability. Ke		
Mode and Effects	Analysis), QFD (Quality Function Deployment), DFx (Design for Assamly, Manufacturying, Quality, Services) and other methods u	sed in industrial ap	oplications.
	Knowledge-based systems of quality and reliability, data collection.		_
616Y1PV	Operation, Construction and Maintenance of Vehicles	KZ	2
Methods of vehicle	production. Vehicle maintenance. Vehicle diagnostics. Maintenence and repair plans. Engine maintenance and emission measurement	ent. Transmission n	nechanism.
	General principles of engine diagnostics.		
616Y1RE	Control and Electronic Vehicle Systems	KZ	2
	ts of regulation. Tools for analytical solution, linear system description. Basic types of a regulator (PID), properties, advantages, disadva	_	
and hybrid drive	control. Electric drive. Vehicle communication bus (CAN, LIN, FlexRay, ISObus, KWP2000 protocole etc.). Vehicle electronic control, comfort systems.	salety, communica	ation and
616Y1SO	Strategy and innovation in mobility	KZ	2
	ovation, definition. Innovation strategy. Innovation life cycle and ecosystem, main sources and funding opportunities. Successful inno		l
	ation. Sprint method and its use. Innovative business model - main patterns and examples, design, strategy, processes and outlook (I		_
,	of use). Creating an innovation strategy. Customer and value map, design and testing.	,	,
616Y1VT	Development in Railroad Vehicles	KZ	2
	traction. Railroad vehicle parametres regulation. Control and driving of railroad vehicles. Importance in heavy duty and personal trar		l
	assesment. New materials in design. International standardization.		
616Y1ZG	Introduction into Applied Computer Graphics	KZ	2
	s, division and applications with emphasis on transport, including development and research. Colours, colour perception, colour sche		
	on, elementary algorithms for graphic data workout. Visualisation principles and tasks, technics, graphics and visualisation HW basics	•	-
	graphics software.		
616Y1ZL	Vehicle Testing, Legislation and Construction	KZ	2
	n, aggregate computing, driving resistance, building and parameters of traction, constructional arrangement of personal cars, trucks,		, legislation
	in the EU and in the world, creation of technical legislation, testing methods, vehicle tests, accelerated tests, mathematical modelling		
617FID	Financing and investment in transport	Z,ZK	4
	g of transport infrastructure, the role of public administration in the financing and realization of investment in transport, the investmen		cle, subsidy
	programs and their rules, competition, effectiveness and efficiency of spending public funds, evaluation systems of public projects and	· -	T
617TEDL	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		I
617X31D	Project 1 DOS	Z	2
617X32D	Project 21 DOS	Z	2
617X33D	Project 3 DOS	Z	4
617Y1EV	Public Sector Economy	KZ	2
	ncial theory of public sector, public choice theory, externalites, decisions about public finance allocation, economic assesment of public		
· .	R, state budget, management of public projects a their economic efficiency assessment, way of elaboration of PPP projects, funding fro		
617Y1LL	Logistics of Passenger and Freight Air Transport	KZ	2
Logistics airline pas	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.		
617Y1MD	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 dif	rrerences in
	the application of marketing.		

617Y1OF	Personal Finance	KZ	2
	budget, financing of basic living needs), debt (loans and credits, payment instruments, interest and fees, debt trap), financing of hous		-
consumer loans, re	financing), savings and investments (investment horizon, return, risk, investment strategy), insurance (insurance types, suitability and	adequacy), securir	ng the future
	(retirement savings and insurance).		
617Y1PM	Personnel Management	KZ	2
	ces, work group, man as personality, planning, choice, evaluation and education of human sources, work adaptation, teamwork, inter		
617Y1SK	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, line	-	_
evaluation of the	e timetable. Vehicle circulation creation. Optimizing driver shifts and arranging them in turnus. Effects of barrier-free and public transposition	ort preferences. Th	ne role of
047\/40	marketing.	1/7	
617Y1SL	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 of the organization.	an resources plan	ning, cuiture
CAZVACT		1/7	
617Y1ST	Titan Simulation gement game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same produ	KZ	2
-	perions game simulating the business decisions. Lets 2-6 student groups to produce and compete in the market with the same produ- ntity and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequences		
determine the quar	of financial corporate reports and they use this information for other business decisions.	of their decisions	by the form
618DYKS	Dynamics of Structures and Systems	Z,ZK	3
	ns with multiple degrees of freedom. Natural modes and natural frequencies. Method of stiffness constants, method of elastic constants	,	_
•	nuously distributed mass. Matrix form of equations of vibration. Finite element method in dynamics of structures. Solving vibrations by s		
•	Subspace iteration methods. Introduction to nonlinear vibrations.		
618KIDY	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		nass points,
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.		
618MECK	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		
618MTY	Materials Science and Engineering	Z,ZK	3
	terials 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	is also paid
	to degradation processes in materials, to defectoscopy and to main mechanical tests.		_
618NUMM	Numerical Methods in Mechanics	KZ	3
	st used numerical methods in structural mechanics. Central difference method, finite element method, boundary element method. Tir	=	
schemes. Finite ei	ement method - derivation of the basic equations. Stiffness matrix, mass matrix, damping matrix at element level and structural level. of algebraic equations. Numerical integration.	ivietnous for solvii	ng systems
618PZP	Elasticity and Strength	Z,ZK	3
	ession. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam. Design of riveted, bolte		_
	ection curve of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Beam on elastic for	-	
618SAT	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		1
•	vork. Kinematic method for calculation of reactions of statically determinate systems. Determination of axial forces in truss constructions.		•
·	of planar shapes. Fiber polygons and chains.		
618SPP	Seminary from Elasticity and Strength	Z	0
Excersise for pract	tice. Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of bean	n. Analysis of defle	ection curve
	of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling.		
618SS	Seminary from Structural Analysis	Z	0
Examples for practi	ise. General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and	simple framework	. Application
of principle of virtu	al works for calculation of reactions of staticaly determinate systems. Determination of axial forces in truss construction - method of j	oints and method	of sections.
	Geometry of cross sections. Plane fiber polygons.		1
618STD	Seminary from Technical Documentation	Z	0
Technical standa	ards, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional	al and geometrical	accuracy,
040755	arrangement of drawing sheets.	1/7	
618TED	Technical Documentation	KZ	2
recnnicai standa	rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensiona arrangement of drawing sheets.	ii and geometricai	accuracy,
610V21D		Z	2
618X31D	Project 1 DOS		2
618X32D	Project 2 DOS	Z	2
618X33D	Project 3 DOS	Z	4
618Y1AM	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 n	nan and his treatm	ient. Human
610V1FN/	joint prostheses. Protective means and traffic safety regulations.	KZ	2
618Y1EM	Experimental Methods in Mechanics ole of experimental mechanics. Sensors for mechanical testing. Overview of experimental methods. Destructive and non-destructive		2 S Design of
	ole of experimental mechanics. Sensors for mechanical testing. Overview of experimental methods. Destructive and non-destructive cedures and sample preparation. Tensile and bending tests. Electrical resistance strain gages. Optical based strain measurement. Fa	_	_
experimental pro-	Instrumented hardness testing. Introduction to electron microscopy. Errors in measurement.	gao ana memie	oaioiioi i.
618Y1MT	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		1
=	ogical materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's	•	paid

618Y1PS	Computer Simulations in Mechanics	KZ	2
•	everview of programs for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model deve Her CAE systems. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary cond	•	•
	load. Basic tasks of structural and modal analysis. Introduction to complex nonlinear problems.		
618Y1UK	Introduction of Rail Vehicles	KZ	2
	ics and parameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion train		_
ack resistance. To	tal running resistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehicle - h and electric drive. Design concept rail vehicles and drive of wheel set.	ydromechanic,	hydrodynami
620SYSA	Systems Analysis	Z,ZK	5
•	em sciences, system viewpoint, terminology, typical system analysis tasks, system identification, system interface and interface tasks, strong functions and processes, genetic code, system identity, system architecture. Tools for system analysis - Petri nets, decision table tasks. Soft and hard systems, methods for soft system analysis.		
620UITS	Introduction to Intelligent Transport Systems	Z,ZK	7
	gislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamentals of inform	•	1
	inciples and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real examples of ITS.		
620X31D	Project 1 DOS	Z	2
620X32D	Project 2 DOS	Z	2
620X33D	Project 3 DOS	Z	4
620Y1AE	Applied Electronics	KZ	2
	semiconductor components, their principles, characteristics and typical connection diagrams. Semiconductor PN junction diodes, trans		_
	ogic gates. Functions of basic electronic circuits and methods for their designs (rectifiers, voltage regulator with Zener diode, transistor amplifier as an inverting and noninverting amplifier).		•
620Y1AF	Alternative Forms of Transportation Project Financing	KZ	2
	such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt payme ot a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of secur of transportation and telecomunication projects.		_
620Y1EA	Environmental Aspects of Transport	KZ	2
	bhere, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilistic for		
	n pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transpo		_
620Y1EK	Qualification in Electrical Engineering	KZ	2
			- P
•	ee with measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock hazard, so allowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legislation in relation to health and safety and electrical engineering.		-
voltage, maximum	allowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legislation in relation to health and safety and electrical engineering.	n, standards ar	d regulations
oltage, maximum	allowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legislation in relation to health and safety and electrical engineering. Communication and presentation skills	n, standards ar	d regulations
voltage, maximum 620Y1KP Motivation, prioritie	allowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legislation in relation to health and safety and electrical engineering.	n, standards ar KZ sic typology of	d regulations 2 personalities
oltage, maximum 620Y1KP Notivation, prioritie	allowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legislation in relation to health and safety and electrical engineering. Communication and presentation skills as and their fulfillment, current communication networks, work with various sources, formal requirements of emails and final theses, battonal intelligence, manipulation and way of working with it, coping with stressful situations, formal requirements of presentations, ways	n, standards ar KZ sic typology of	d regulations 2 personalities
620Y1KP Motivation, prioritie teamwork, emol	allowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legislation in relation to health and safety and electrical engineering. Communication and presentation skills es and their fulfillment, current communication networks, work with various sources, formal requirements of emails and final theses, bational intelligence, manipulation and way of working with it, coping with stressful situations, formal requirements of presentations, ways presentation, presentation skills, presentation skills in online environment.	KZ sic typology of s of communica	2 personalities tion during
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621Y1LJ			
Racic definitions his	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		
621Y1LS	Air Traffic Services	KZ	2
Airspace structure i	n Czech Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, APP at USA and Czechoslovakia. ATS - Model of financing. Training System of Air Traffic Controllers. Future development of ATS		story of AIS
621Y1MP		KZ	2
	Matlab for project-oriented study bus is focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exercises		
1	les, based on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improveme		_
621Y1OH	Airline Business and Operations	KZ	2
	s a comprehensive view of the commercial, operational and transportation activities of air transport companies. It focuses on the organiz		
various aspects of t	heir strategy, economic and operational indicators. It introduces students in detail to operational processes and the essentials of transp	ortation processes	s. It provides
	a basic view of the economic aspects of air transport.		
621Y1PA	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	•	_
level changes, ATC	clearance, use of RNAV points. Practical exercises focused on the basis of vectoring, timely application of vertical spacing, EST and	d REV message tra	ansmission.
6247400	Exercises in the APPROACH airspace, arrivals, departures and conflict solutions.	KZ	2
621Y1PC	ATC Procedures and Activities procedures, basics of communication and phraseology, aircraft identification, spacing and traffic coordination. In addition, the course of t		
	ts and low visibility operational procedures. Students will during the course learn basic safety management applications applied acro		
621Y1PL	Operational Aspects of Aerodromes	KZ	2
	ts of aerodromes. Location of aerodrome and orientation of runways. Requirements for apron. Capacity of airports runways and term		
	conditions. Firefighting units. Protection against unlawful interference. Local transport connection. Environmental protection		
621Y1RZ	Human Resources Management	KZ	2
The position of h	numan resources in the organization and related disciplines file. Substance, importance and challenges of human resources manage	ment. Internal and	external
environment of hum	nan resource management. Human resource planning. Search, recruitment and selection of employees. Motivation, evaluation and ren	nuneration of staff.	Positioning,
22.17.1.21	dismissal and redundancies of employees. Education of employees. Planning career management.		
621Y1SI	ATC Simulator	KZ	2
	vith the simulation environment, acquiring basic habits, aircraft identification procedures, vectoring, level changes, ATC clearance, us ig on basic vectoring, early application of vertical separation, EST and REV message passing. Practical exercises in the APPROACH	•	
0,010,000 10000,11	departure management procedures, conflict resolution.	raroa, praotioning a	invar and
621Y1TH	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	ading units. Equipi	
pa	ssangers onboarding and offboarding. Operational processes of aircraft technical handling and regulations. Modernization and techn	ical progress.	
621Y1UL	Aircraft Maintenance	KZ	2
	and technical operations. Maintenance and work processes. Defects search methods, status check diagnostic tools. Selection and qua		
Basic documentati	on for maintenance. Optimization of time maintenance intervals. Regulation no. 1321/2014 Part 145. Human factors of aircraft maintenance.	enance. Regulation	of director
			0. 400.0.
C047ALD	EASA for aircraft maintenance. Seminars will be focused on practical application.	1/7	
621ZALD	Basics of Air Transport	KZ	2
History, definitions,	Basics of Air Transport terminology, basic rules. VFR/IFR. Basics of aerodynamics. Propulsion of aircraft. Aircraft design. Basics of navigation, radio navigation.	Weight, balance, p	2 erformance.
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History, definitions,	Basics of Air Transport terminology, basic rules. VFR/IFR. Basics of aerodynamics. Propulsion of aircraft. Aircraft design. Basics of navigation, radio navigation. imization of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic management, grou	Weight, balance, p	2 erformance.
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History, definitions, in Flight planning, option 622DON Introduction to Road Systems; Road Acc	Basics of Air Transport terminology, basic rules. VFR/IFR. Basics of aerodynamics. Propulsion of aircraft. Aircraft design. Basics of navigation, radio navigation. imization of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic management, grou Airlines and economics. Space technologies. Traffic Accidents d Accidents and Forensic Expertise; Rail, Water and Air Accidents; Road Accident Documentation and Documentation Technology; Accident Trace Analysis and Fake Accidents; Simulation Programmes for Road Accident Analysis; Pedestrian and Cyclist Accidents; Veherbicles; Safe road layout and collision diagrams; Not giving right of way; Technical defects of vehicles; Restraints - passive road safety	Weight, balance, poind handling, secur Z,ZK ccident Data Recolicle technologies a	2 erformance. ity. Air crew. 6 rders - EDR ind systems
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623Y1MK	Crisis Situation Management in Critical Infrastructure	KZ	2
Determination of o	ritical infrastructute elements on all levels, their protection systems, responsibilities of particular agencies of the state administration	and the self-gove	rnment, and
their	responsibilities to anounce particular safety provisions. Physical and cyber protection of critical infrastructure with special attention to	the soft targets.	
623Y1MU	Emergency Events Management Solution in Transport Infrastructure	KZ	2
Basic solutions of e	mergency events with emphasis of the transport infrastructure events and their solution management. Knowledge in the emergency pla	anning and specia	l procedures
	in liquidation work within the transport infrastructure.		
623Y1OK	Protection of Critical Objects and Infrastructures	KZ	2
Types of technolog	cal systems, critical item, risks and their courses, criticality, vulnerability, connectivity, dependability, resilience, failure, protection, safe	ty of critical object	s and critical
	infrastructures.		
623Y1TP	Criminal Law in IT and Transportation	KZ	2
Introduction of cri	minal law into legal order, conception of culpability and criminal delict, consequency of other legal standards. international treaty and	criminal law, inve	stigation of
	crime, specific indicia of criminal court cases, practical examples.		
623Y1VS	Negotiation and Cooperation	KZ	2
Code of conduct for	r negotiation. The influence of personality traits on the negotiations. Negotiation and commanding. Teamwork. Variants teams. Inform	al and formal role	in the team.
Principles of negoti	ation, the essence of negotiation, the differences in negotiation in business and in crisis situations, the principle of "win both", specific	ations and biddin	g, the role of
	trust.		
TV-1	Physical Education	Z	1
TV-2	Physical Education	Z	1
TVKLV	Physical Education Course	Z	0
TVKZV	Physical Education Course	Z	0

For updated information see http://bilakniha.cvut.cz/en/FF.html Generated: day 2025-07-26, time 10:12.