Study plan

Name of study plan: Bachelor TET-DOS Full-Time from 2025/26

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-24/25-DC Name of the group: 1st 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 9 courses Credits in the group: 30 Note on the group:

Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their Code Completion Credits Scope Semester Role members) Tutors, authors and guarantors (gar.) Calculus 1 611CAL1 Z.ZK 2P+4C+22B 7 7 7 Romana Zibnerová Ond ej Navrátil (Gar.) Linear Algebra 611LA Z,ZK 3 2P+1C+10B Ζ Ζ Romana Zibnerová Romana Zibnerová Martina Be vá ová (Gar.) Introduction to Transportation Engineering 612ZADY Ζ Z,ZK 4 2P+2C Ζ Jana Štikarová, Dagmar Ko árková Dagmar Ko árková (Gar.) Materials Science and Engineering 618MTY Z,ZK 3 2P+1C+10B Ζ Ζ Vít Malinovský Jaroslav Valach (Gar.) Geometry Ζ 611GIE ΚZ 3 2P+2C+12B Ζ Vít Malinovský Šárka Vorá ová (Gar.) Algorithm and Data Structures 614ASD ΚZ 3 0P+2C+8B Ζ 7 Jan Mejst ík **Technical Drawing and Designing** Ζ 618TKK ΚZ 4 2P+2C 7 Vít Malinovský **Introduction into Vehicles** 616UDOP Ζ 2 2P+0C+8B Ζ z Zuzana Radová Petr Bouchner (Gar.) TV-1 Ζ 1 Ζ 7 **Physical Education**

Characteristics of the courses of this group of Study Plan: Code=1S-BP-TET-24/25-DC Name=1st Sem. Bachelor Full-Time TET from 2024/25

611CAL1	Calculus 1	Z,ZK	7			
Sequence of real number	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.					
612ZADY	Introduction to Transportation Engineering	Z,ZK	4			
618MTY	Materials Science and Engineering	Z,ZK	3			
Basic course of material	s science and engineering explains mechanical properties of structural materials based on their bonding forces and microstru	ucture. However th	ne main attention			
is paid to metals as the	most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and	composites. Atter	ntion is also paid			
to degradation processe	es in materials, to defectoscopy and to main mechanical tests.					
611GIE	Geometry	KZ	3			
Orthographic and oblique projections, linear perspective. Topographic surfaces and their orthogonal projection. Differential geometry of curves - parameterization, 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 curved path.						

614ASD	Algorithm and Data Structures	KZ	3			
Students will be familiarized with selected basic and derived data structures, algorithms, their properties and their design procedure. Students will analyze problems, propose theoretical						
solutions to the set task	solutions to the set task and the resulting algorithm write by means of flowcharts, practice in reading algorithms recorded by means of the flowchart and use the basics of Boolean					
algebra with forming the	e conditions for the algorithms.					
618TKK	Technical Drawing and Designing	KZ	4			
616UDOP	Introduction into Vehicles	Z	2			
Vehicles and transportation systems. Functionality and setup. Movement and drive principles. Engines and their characteristics. Rail, road, air and water transport. Alternative means						
of transport. Lifting equipment and conveyors. Legislation.						
TV-1	Physical Education	Z	1			

Code of the group: 2S-BP-TET-23/24-DC Name of the group: 2nd Sem. Bachelor Full-Time TET from 2023/24 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 aroup:

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 Tasák Romana Zibnerová Ond ej Navrátil (Gar.)	Z,ZK	5	2P+3C+20B	L	Z
611STAT	Statistics Pavel Provinský, Evženie Uglickich, Pavla Pecherková, Michal Matowicki Pavla Pecherková Pavel Provinský (Gar.)	Z,ZK	4	2P+2C+12B	L	Z
612ZTS	Railway Lines and Stations Tomáš Javo ík, Ond ej Trešl	Z,ZK	4	2P+2C+10B	L	Z
618SAT	Structural Analysis Tomáš Doktor Daniel Kytý (Gar.)	Z,ZK	4	2P+2C+14B	L	Z
620SYSA	Systems Analysis Petr Bureš, Eva Haj iarová, Ji í R ži ka Zuzana B linová (Gar.)	Z,ZK	5	2P+2C+14B	L	Z
614PRG	Programming Libor Žídek	KZ	2	0P+2C+8B	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+8B	L	Z
TV-2	Physical Education	Z	1		L	Z

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

611CAL2	Calculus 2	Z,ZK	5			
Linear differential equat	ions and their systems, differential calculus of functions of several real variables. Riemann integral in Rn. Line and surface in	tegrals.				
611STAT	Statistics	Z,ZK	4			
Definition of probability,	Definition of probability, random variable and its description, known distributions, random vector, function of random variable. Methods of point estimation. Testing of statistical hypothesis.					
Regression and correlat	ion, linear regression, correlation coefficient, coefficient of determination, the general linear model, statistical inference in linea	ar regression, anal	ysis of variance,			
multiple regression, the	use of matrices in regression.					
612ZTS	Railway Lines and Stations	Z,ZK	4			
Rail transport. Railway t	rack geometry parameters. Route layout of railway lines. Railway line construction - railway substructure and superstructure.	Spatial layout of r	ailway lines.			
Railway control systems	s 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 force	s in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determina	ate beams and sin	nple girders.			
Principle of virtual work.	Kinematic method for calculation of reactions of statically determinate systems. Determination of axial forces in truss constructic	ns. Cross-section	al characteristics			
of planar shapes. Fiber	polygons and chains.					
620SYSA	Systems Analysis	Z,ZK	5			
Introduction to system s	ciences, system viewpoint, terminology, typical system analysis tasks, system identification, system interface and interface ta	sks, processes, s	ystem behaviour			
and its analysis, strong	functions and processes, genetic code, system identity, system architecture. Tools for system analysis - Petri nets, decision to	ables, algorithms	for structural			
tasks. Soft and hard sys	tems, 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, variab	les, conditions, cy	cles, arrays,			
functions), programming	g techniques, complexity.					
617TEDL	Transport Technology and Logistics	KZ	3			
Basic terms in transport	technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and freight t	ransport, organisa	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 using various transport 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.	Airlines and economics. Space technologies.					
TV-2	Physical Education	Z	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+18B	Z	Z
612MDE	Transport Models and Transport Excesses Josef Kocourek, Tomáš Pad lek Josef Kocourek (Gar.)	Z,ZK	3	2P+1C+8B	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+12B	z	Z
618PZP	Elasticity and Strength Tomáš Doktor Ond ej Jiroušek (Gar.)	Z,ZK	3	2P+1C+10B	Z	Z
620UITS	Introduction to Intelligent Transport Systems Vladimír Faltus Pavel Hrubeš (Gar.)	Z,ZK	7	3P+2C+20B	Z	Z
612PPOK	Designing Roads, Highways and Motorways Josef Kocourek, Tomáš Pad lek, Petr Kumpošt	KZ	3	1P+2C+10B	Z	Z
614DATS	Database Systems Ond ej Smíšek Jana Kaliková (Gar.)	KZ	2	1P+1C+10B	Z	Z
615JZ1A	Foreign Language - English 1 Jan Feit	Z	3	0P+4C+10B	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

2024/20							
611FYZ	Physics	Z,ZK	5				
Kinematics, dynamics, Newton's laws, force fields, mechanics of continuum, thermodynamics, introduction to electrostatics and electric current.							
612MDE	Transport Models and Transport Excesses	Z,ZK	3				
Parameters of the traffic flow and methods for their measurement. Models of the traffic flow, communications load, line and urban systems. Theory of queues, shock waves. Quality of							
transport and its assess	ment. Statistical characteristics of transport. Transport excesses, their analysis, the causes, identify and minimize the consec	juences. Improvin	g of transport				
safety and fluency.							
611TGA	Graph Theory and its Applications in Transport	Z,ZK	4				
Basic terms of graph the	eory, paths in graphs, flows in networks, location problems, design problems on graphs, optimum routing, use of graphs in oth	ner scientific disci	plines.				
618PZP	Elasticity and Strength	Z,ZK	3				
Tension and compression	n. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam. Design of riveted, bo	olted and welded j	oint of structure.				
Analysis of deflection cu	urve of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Beam on elastic for	undation. Strength	n analysis.				
620UITS	Introduction to Intelligent Transport Systems	Z,ZK	7				
Terminology and legislat	ive framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamentals of ir	formation and tel	ecommunication				
systems for ITS. Princip	les and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real examp	les of possible ap	plications of the				
principles of ITS.							
612PPOK	Designing Roads, Highways and Motorways	KZ	3				
Definition, types, owner	ship, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standa	ard speed. Route i	n rural areas.				
Range of vision for stop	ping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. So	afety device. Cros	sings, junctions,				
intersections.							
614DATS	Database Systems	KZ	2				
Basic concepts of datab	ase systems, conceptual model, relational data model, the principles of normal forms, relational database design, security a	nd integrity of dat	a, database				
queries, relational algebra, SQL language, client / server, multilayer architectures, distributed database systems. Access to data via the WWW.							
615JZ1A	Foreign Language - English 1	Z	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	stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles of rhetoric.						

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

C11MCD		1				
0111013F	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 sy	stem, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer functio	on. Stability of LTI	systems.			
Discretization of continu	ous 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. Tractic	on engine characte	eristics -			
combustion engines, ele	ectric engines, change of energy principles. Powertrain construction. Power transmission. Brake systems.					
618KIDY	Kinematics and Dynamics	Z,ZK	4			
Friction. Motion along a	line and a curve. Kinematics of rigid body. Kinematics of the point mass and the system of mass points. Dynamics of a mass I	point and a system	n of mass points,			
equation of motion. Met	nod of Newton. D'Alembert principle. Free and forced vibration with one degree of freedom. Viscous damping. Impact theory.	Introduction to th	e solution of			
vibration with two 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.						
Discretization of continu 616DOKY Technical nomenclature combustion engines, ele 618KIDY Friction. Motion along a equation of motion. Met vibration with two degre 615JZ2A Grammatical structures stylistics forms. Oral an	 Stationary and non-stationary system, causality. Convolutional integral. Laplace and 2 transformations. Transfer function ous systems. System interconnection. Vehicle Technology in transportation technology. Vehicle in legislation. Design. Operation. Influence on environment. Vehicle and ecology. Tractic extric engines, change of energy principles. Powertrain construction. Power transmission. Brake systems. Kinematics and Dynamics 	Z,ZK on engine character Z,ZK point and a system Introduction to th Z,ZK d communicative s	eristics n of ma e soluti kills. El			

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 cu	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 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 (Gar.)	КZ	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. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zone stations. Formation yards.					
Reserve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic railway 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	L	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 application for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, data exchange). Advanced blocks						
modification (attributes,	modification (attributes, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transition curve, cross-and longitudinal					
section). Basics of 3D n	nodelling.					
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

Name of the group: 5th Sem. Bachelor Full-Time TET-DOS from 2023/24 Requirement credits in the group: In this group you have to gain 10 credits Requirement courses in the group: In this group you have to complete 2 courses

Credits in the group: 10

Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
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 transport. Railway vehicles. Railway signals and signal devices. Railway traffic organisation and operation. Simplified railway traffic operation. Railway vehicles					
brakes. Railway vehicles marking. Operation intervals. Theoretical graph of train running.					
622DON	Traffic Accidents	Z,ZK	6		
Introduction to Road Ac	cidents and Forensic Expertise; Rail, Water and Air Accidents; Road Accident Documentation and Documentation Technology	; Accident Data F	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. F	procedure, calibration. Processing of a simple transport model based on real data.				
618DYKS	Dynamics of Structures and Systems	Z,ZK	3		
Vibration of systems wit	h multiple degrees of freedom. Natural modes and natural frequencies. Method of stiffness constants, method of elastic cons	stants, other nume	erical 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 aroun.

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. Ur	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	d 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.)	КZ	3	2P+0C	Z	Z
618NUMM	Numerical Methods in Mechanics Ond ej Jiroušek Ond ej Jiroušek (Gar.)	КZ	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	KZ	3		
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	KZ	3
Basics of the most used	numerical methods in structural mechanics. Central difference method, finite element method, boundary element method. T	ime and spatial di	scretization
schemes. Finite elemen	t method - derivation of the basic equations. Stiffness matrix, mass matrix, damping matrix at element level and structural lev	el. Methods for so	olving systems
of algobraic oquations	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 ro	ad, elements and routes for traffic, pedestrian and cycling transport, projection of intersections, traffic lights and its traffic safe	ty proposal, round	abouts, calming			
of traffic, precaution for	blind & amp; 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	ining and realisati	on of timetables,			
prepare of infrastrukture	e (route, stops), preference of public transport, financing.					
622METD	Measurement Methods and Technology in Transportation	ZK	4			
Measurement methods in transport, their meaning and use. Geodetic basics in Czechia. Angular, length and height measurements. Principles of mapping, accuracy and errors of						
geodetic measurements. Surveying and setting out. Challenges of localization, navigation and Global Navigation Satellite Systems. Laser scanning (terrestrial, mobile, UAV). Technical						
photography and photog	grammetry. Dynamic measurements of vehicles. High-speed cameras.					

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

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 aroup:

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 evaluation. Testing and legislation. Crash tests. Carbody properties. Injury mechanics. Restrain systems. Airbags. Road user safety. Mathematic modelling. Post collisio								
safety systems.	safety systems.							
617FID	Financing and investment in transport	Z,ZK	4					
Sources of financing of transport infrastructure, the role of public administration in the financing and realization of investment in transport, the investment project project cycle, subsidy								
programs and their rules, competition, effectiveness and efficiency of spending public funds, evaluation systems of public projects and programs.								

Code of the group: 6S-BP-DOS-V2-23/24-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	6 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. International 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						
methods of presentation of the results. Seminar papers on open data. Consultation hours for seminar papers. Seminar paper submission and presentation.						

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
621X31D	Project 1 DOS	Z	2	0P+2C	L	ZP
622X31D	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
620X31D	Project 1 DOS	Z	2	0P+2C	L	ZP
611X31D	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
615X31D	Project 1 DOS Petr Musil	Z	2	0P+2C	L	ZP
614X32D	Project 2 DOS	Z	2	0P+3C	Z	ZP
612X32D	Project 2 DOS Dagmar Ko árková, Josef Kocourek, Tomáš Pad lek, Petr Kumpošt	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
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
622X33D	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 Dagmar Ko árková, Josef Kocourek, Tomáš Pad lek	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

621X31D	Project 1 DOS	Z	2
622X31D	Project 1 DOS	Z	2
612X31D	Project 1 DOS	Z	2
614X31D	Project 1 DOS	Z	2
620X31D	Project 1 DOS	Z	2
611X31D	Project 1 DOS	Z	2
616X31D	Project 1 DOS	Z	2
617X31D	Project 1 DOS	Z	2
618X31D	Project 1 DOS	Z	2
615X31D	Project 1 DOS	Z	2
614X32D	Project 2 DOS	Z	2
612X32D	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
621X33D	Project 3 DOS	Z	4
620X33D	Project 3 DOS	Z	4
618X33D	Project 3 DOS	Z	4
622X33D	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.)	КZ	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
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
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
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
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 Alexandra Dvo á ková	KZ	2	2P+0C	Z	PV
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
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
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
614Y1W1	Webdesign 1	KZ	2	2P+0C	Z	PV
614Y1W2	Webdesign 2	KZ	2	2P+0C	L	PV
616Y1ZG	Introduction into Applied Computer Graphics	KZ	2	2P+0C	L	PV
614Y1ZM	Fundamentals of parametric and adaptive modeling	KZ	2	2P+0C	L	PV
611Y1ZM	Foundation of MATLAB Programming	KZ	2	2P+0C	L	PV
614Y1ZJ	Fundamentals of programming in JAVA	KZ	2	2P+0C	Z	PV
612Y1ZU	Principles of Urbanism	KZ	2	2P+0C	Z	PV
615Y1ZV	East-West dichotomy: Prelude to the Cold War	KZ	2	2P+0C	Z	PV
616Y1ZL	Vehicle Testing, Legislation and Construction	KZ	2	2P+0C	Z	PV

Characteristics of the courses of this group of Study Plan: Code=Y1-BP-DOS-22/23-DC Name=Comp. Sel. Courses Bachelor Full-Time TET-DOS from 2022/23

621Y1AM Aeronautical Information Management (AIM)	KZ	2		
Definition and basic overview of AIS and AIM. Transition from AIS to AIM. Regulatory base. Provision of AIS/AIM in the Czech Rep. AIP (Aeronautical Inf. Publication). VFR Manual of				
the Czech Rep. AIRAC System. NOTAM messages.PIB (Pre-flight Information Bulletin). AIC (Aeoronautical Inf. Circulars). Aeronautical Charts. EAD	(Europena AIS Da	atabase). QMS		
(Quality Mng. System). ADQ (Aeronautical Data Quality). AIXM (Aeronautical Inf. Exchnage Format).				
620Y1AF Alternative Forms of Transportation Project Financing	KZ	2		
In will be specified such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt	ayments come fro	m its budget but		
the final debtor is not a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue o	securities as an a	Iternative source		
of transportation and telecomunication projects.				
618Y1AM Anatomy, Mobility and Safety of Man	KZ	2		
Survey of tissues. Anatomical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circulation and nervous system. Structure				
and biomechanics of muscular-skeletal system. Injury of human organs and musculo-skeletal system during traffic accidents. Mobility of ill and injured man and his treatment. Human				
joint prostheses. Protective means and traffic safety regulations.				

614Y1AV Animation and Visualization	KZ	2
Advanced modifications and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems a	nd Space Warp obje	ects. Atmospheric
and other effects, rendering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, anima	tion using Inverse K	linematics.
612Y1AE Applied Ecology	KZ	2
General ecology - ecological concepts and principles, ecosystem, ecological factors, energy flow through the ecosystem. Application of knowledg	e within EIA docum	entation. Special
ecology. Landscape ecology - origin and historical development. Landscape definition and classification. Success. Traffic constructions in the cour	tryside. Landscape	and nature
protection. Applied ecology.		
620Y1AE Applied Electronics	K7	2
Basic electronic semiconductor components, their principles, characteristics and typical connection diagrams. Semiconductor PN junction diodes,	transistors, thyristo	r, operational
amplifiers, basic logic gates. Functions of basic electronic circuits and methods for their designs (rectifiers, voltage regulator with Zener diode, tra	nsistor as an amplifi	er, operational
amplifier as an inverting and noninverting amplifier).		
614Y1BE Barrierless Transport	KZ	2
The issue of barrierless accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Stu	dents will gain theor	etical knowledge
of barrierless environment roads, railway stations, public transport stops, terminal buildings, vehicles, public transport, information and orientation sy	stems and transport	ation technology.
Theoretical knowledge will be supplemented by practical examples.		
615Y1BO Work Safety and Health Protection in Transportation	KZ	2
Fundamental legislative, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportat	on. Health protectic	n programmes,
health insurance of home and foreign business trips, statistics, working practice.		
611Y1BK Error Detection Codes for Interlocking Systems	K7	2
Safe comunication and methods for its assuring. Safety codes linear codes, cvclic codes, BCH codes, Reed-Solomon codes, Transmission chan	els. detection of tra	nsmission errors.
probability of undetected error. Design and assessment of detection codes; requirements of the European standard EN 50159.	,	,
621V1BS Unmanned aircraft systems 1	K7	2
I Jumanneed Aviation Development Aircraft design Legislation in force in the Czech Republic Planning and execution of the flight Airspace division	Operational risks	and operational
Proceedings Practical flights		una oporational
61/V1BM Biometric Methods	K7	2
Distribution Distribution automatication principles and performance measurement of hiematric systems, eventions of hiematric technologic		
basic biometric terms, adulentication memory, principles and periodinance measurement or biometric systems, werview or biometric terminologie rating reporting method 2D and 3D face recognition year batters on the wrist ear biometrics (interprint recognition sets) espectators conversion when the set of the	vioral methods, the	use of biometrics
rean recognition method, 2D and ecognition, ven patients on the what, ear biometrics, imgerprint recognition, skin specificacity, bena in transport anniferations, eafatu and ricks of biometric technologies		use of biofficines
AlexPlant and the set of the set	K7	2
DISTIDZ HISTORY OF KAIIWAY	Popublia" electric t	∠
House-chawin railways, steam railways, railway network development in the 2nd beit railways railway insteam railways in the 2nd beit of 20th perspirit high speed railways railway insteam the 2nd beit of 20th speed railways railway insteam the 2nd beit of 20th speed railways railway railway and speed railways insteam the 2nd beit of 20th speed railways railways railway insteam the 2nd beit of 20th speed railways railways railways insteam the 2nd beit of 20th speed railways railways railways insteam the 2nd beit of 20th speed railways railways railways insteam the 2nd beit of 20th speed railways railways railways insteam the 2nd beit of 20th speed railways railways railways insteam the 2nd beit of 20th speed railways railways railways insteam the 2nd beit of 20th speed railways railways railways insteam the 2nd beit of 20th speed railways railways railways insteam the 2nd beit of 20th speed railways railways railways railways insteam the 2nd beit of 20th speed railways ra	Republic, electric to	nos construction
Via in railway, saiway development in the 2nd rail of zon century, high-speed railway origins, railway intes closing, important long-distance train of	fillections, failway in	nes construction,
Taiway acuteris, raiway junctoris. Excursions and projections.	1/7	2
612YIDS Project Documentation in Practice	KZ	∣ ∠
Project accumentation creating. Project accumentation types. Support materials for project documentation creating. Building permit obtaining pro	cess. Budget and pr	icing. Practical
creation of some project documentation parts.		
617Y1EV Public Sector Economy	KZ	2
Economic and financial theory of public sector, public choice theory, externalites, decisions about public finance allocation, economic assessment	of public projects (C	BA, MCA, CEA),
tax system of the CR, state budget, management of public projects a their economic efficiency assessment, way of elaboration of PPP projects, func-	ling from EU funds,	program HDM-4.
620Y1EK Qualification in Electrical Engineering	KZ	2
Practical experience with measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock has	zard, symbols and I	labeling, nominal
voltage, maximum allowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, lec	islation, standards	and regulations
in relation to health and safety and electrical engineering.		
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 e	nergy. Combustion e	engine, electric
drive, steam engine, air engine. Energy accumulation means, accumulator, flywheel, fuel cell. Energy recuperation. WTW analysis.		
620Y1EA Environmental Aspects of Transport	KZ	2
State of the atmosphere, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, proba	bilistic forecasts, for	ecast evaluation.
Air quality, main pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and tran	sportation in climat	e change.
615Y1EH European Integration within Historical Context	KZ	2
Versailles system, formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communi	sm. Little Entente, it	s principles and
goals. Europe after Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war	and its consequence	es for Europe.
New quality of French-German relationship - a driving power of starting European integration.		
618Y1EM Experimental Methods in Mechanics	KZ	2
The purpose and role of experimental mechanics. Sensors for mechanical testing. Overview of experimental methods. Destructive and non-destructive	ctive testing of mat	erials. Design of
experimental procedures and sample preparation. Tensile and bending tests. Electrical resistance strain gages. Optical based strain measurement	t. Fatigue and lifetim	ne prediction.
Instrumented hardness testing. Introduction to electron microscopy. Errors in measurement.		
615Y1FD French Area Studies and Transportation	KZ	2
France - geography and regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air	traffic, specialised	terminology.
French society and culture. Current political system. System of education, studying in France. Selected authors of French literature. French gastro	nomy.	
614Y1HW Computer Hardware	KZ	2
Computer architecture, basics of logical circuits design and their realization using FPGA. In detail, description of computer architecture and separ	ate parts designing	- controllers,
arithmetic and logical units, I/O subsystem.	- 0	
615Y1HL History of Civil Aviation	KZ	2
Beginnings of flying, development of aircrafts lighter than air. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development	nt of airports in the	Czech Republic.
World airports. Famous aviators. Helicopters. CSA airplanes. Development of aircrafts in Czechoslovakia between the years 1945-1989. Classic e	ra of aviation. Golde	en era of civil
aviation. Modern era of civil aviation. Airline companies. Supersonic flying.		
615Y1HD History of City Mass Transport	K7	2
History of city mass transport in the world, development of tram, bus and trolley-bus systems. History of transport networks in the world, current to	ends and developm	ents of tariff and
clearance systems. History of city transport in Prague and Brno. History of tram, bus and trollev-bus operation systems in the Czech Republic and	I Slovakia.	
612Y1HD Traffic Noise	k7	2
Acoustic introduction, basic terms, quantities. Basics of physiological acoustic, noise impacts on human hody. Acoustic legislation, standarts, regi	lations. Creation ac	oustic climate in
area, principles of urban acoustic, noise transmission, soundproofing. Types of noise sources in area. Determination of acoustic situation in the ar	ea of interest Meth	odology of
computing and measurement of transport noise. Acoustic studies, measuring protocol.		

	iona and Erganomics in Traffic	K 7	2
Basic knowledge of occupational byg	iene and Engonomics and their application in transport. Working environment factors, and the influence of thes	e factors on healt	∣ ∠ h of workers
Creation and protection of working co	onditions that do not damage public health. Mutual links man-machine-environment. Adaptation of technology to	possibilities and	skills of man.
Practical examples from the field of tr	ansportation; relevant legislative.		
616Y1IS Interactive	e simulators and simulations	KZ	2
Simulation theory and application of c	computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical m	nodels. Computing	methods.
Simulation of vehicle dynamics, on-la	nd carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simu	ulators.	
612Y1KN Combined	d Transportation	KZ	2
Combined transport strategy and legi	slation. Load units. Means of transport in combined transport. Combined transport systems. Transshipping area	as. Multimodal log	istic centres.
612Y1KP Communi	cation and Promotion of Transport Projects	KZ	2
Fundamentals of Public Relations and	d the power of public opinion. Work and tasks of PR department and press spokesperson. Communication with	the media, the pu	ublic on social
networks and beyond. Communicatio	n strategy of transport projects. Systematic goodwill building. Crisis situations in communication and preparatio	in for crisis comm	unication. The
Influence of political marketing and po	bilitical PR on transport projects. Lobbing.	1/7	0
620Y1KP Communi	Cation and presentation skills		
teamwork emotional intelligence ma	initiation and way of working with it coning with stressful situations formal requirements of presentations way	s, basic typology o	ion during
presentation, presentation skills, pres	sentation skills in online environment.	yo or communicat	lon during
621Y1LI Aeronauti	cal Radio and Elight Instruments	K7	2
Basic definitions, history of aircraft ins	strumentation, aerometric instrumentation, Earth magnetism, aircraft electric equipment, gyroscopic instrumenta	ation, airframe inst	rumentation and
other aircraft equipment, engine instru	umentation, warning and recording systems, instrumentation operational requirements, radiocommunication ar	nd radionavigation	
621Y1LS Air Traffic	Services	KZ	2
Airspace structure in Czech Republic	and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, A	APP a ACC contro	bl. History of ATS
at USA and Czechoslovakia. ATS - M	odel of financing. Training System of Air Traffic Controllers. Future development of ATS.		
617Y1LL Logistics	of Passenger and Freight Air Transport	KZ	2
Logistics airline passenger and cargo	b. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial t	ransport process	passengers and
air cargo. Information systems in air tr	ransport. Global distribution systems.		
620Y1LN Location a	and Navigation	KZ	2
Description and examples of road net	tworks, localization on the network. Routing algorithms, their properties and implementation. Description and ex	xamples of datase	ets for finding
transport connections, routing algorith	hms, their properties and implementation.		
617Y1MD Marketing	in Transportation	KZ	2
General principles of marketing applie	ed to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transpo	rt and the resultin	g differences in
	ng Matariala	V7	2
Systematic overview of main classes	ITY IVICILETICIES of materials used in technical design. In addition to main classes of materials, i.e. metals, ceramics, polymers.	and composites	∠ ∠ attention is paid
to biological materials and to biomine	etics. Integral approach to material selection process is also demonstrated based on so called Ashby's selection	n charts	allention is paid
621Y1MP Matlab for	r project-priented study	K7	2
The subject's syllabus is focused on t	the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exerci	ses will be prepar	ed according to
particular examples, based on actual	students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improver	nent of students' N	latlab skills.
614Y1MP Modeling	Complex Assemblies and Models in Parametric Modeller	KZ	2
Assemblies programming - tools and	methodology of working subassemblies and assemblies, sheet metal parts modelling, welded assemblies, pipe	elines, and distribu	ution lines.
Photorealistic output rendering - phys	sical and material properties, lighting sources. MKP - visual example.		
615Y1MK Modern H	listory in Context: Every Day Life and Transport	KZ	2
Historical overview of modern history	of every day life, science, technology and transport in a wider context.		-
615Y1NE German i	n the Economy and Society	KZ	2
Recent economic and social issues o	f German speaking countries and of the EU. Reading and listening of texts. Lexical, grammatical and semantic	analysis of texts.	Discussion on
selected topics.			1
621Y1OH Airline Bu	isiness and Operations	KZ	2
The course provides a comprehensive	e view of the commercial, operational and transportation activities of air transport companies. It focuses on the orgination activities of air transport companies and the ecceptical of transport on the orgination of the constraints of	anizational structu	re of companies,
a basic view of the economic aspects	iornic and operational indicators. It introduces students in detail to operational processes and the essentials of tra	ansportation proce	esses. It provides
620X10I Eare Colle	action and Information Systems	K 7	2
Fare collection systems in public trans	sport and their components (on-board units, validators, turnstiles,). Information systems and their component	r\∠ Its for users (timet	∠ ables mans
panels) and operators (cycles, loca	ation or current delay of vehicles,). The issue of tariff systems. Other examples of clearance systems (parking	a).	abiee, mape,
614Y10.1 Object - o	riented programming in JAVA	<u>"</u> К7	2
Objective Thinking, Encapsulation, Cl	lasses, Attributes, Access Modifiers, Methods and Overloading, Special Methods (Constructors, Getters / Sette	ers), Basic Objec	t Methods,
Reference Data Types, Inheritance, Po	olymorphism, Statics, constants, interfaces, abstract classes, enum, packages, exceptions, collections, generics	, lambda expressi	ons, anonymous
functions			
614Y1OP Operating	y System	KZ	2
Distributions. Installation GNU/Linux (OS. X-window system. Rights management - users and groups, ACL rights. Filesystems and attributes. Program	ns and processes	s. OS boot,
runlevels. Basic console programs / c	commands. Config files. SW management, package systems. Programs in graphic shell - text, spreadsheet, graphic	phic editors, soun	d, video and
communication. Services manageme	nt. Sare and secure configuration of US. Remote administration.		-
61/Y10F Personal		KZ	2
reisonal finance (budget, financing o	in pasic living needs), dept (loans and credits, payment instruments, interest and tees, debt trap), financing of hi and investments (investment horizon, return, risk, investment strategiv), insurance (insurance times, evitebility	ousing (rent, mort	gage, savings,
(retirement savings and insurance)	יז מהם הוצפסטרופותס (הוצפסטרופות הסרובסה, דפוטרה, הזאר, הוצפסטרופות סטמנפטי), הוסטרמורטפ (הוסטרמורטפ נאספט, סטו מרום הוצפסטרופותס (הוצפטרופות הסרובסה, דפוטרה, הוצאר, הוצפסטרופות סטמנפטי), הוסטרמורטפ (הוסטרמורטפ נאספט, סטונמ	and adequacy), Se	caring the luture
620V10K Pood Lick	ating	k7	2
Basic lighting quantities and terms str	reet lighting components (luminaires, control cabinets for street lighting, street lighting, cables), characteristics of l	uminaires (lifetime	of light sources
light distribution), standards. measure	ement of illuminance and luminance in road lighting, tunnels, conceptual approach to street lighting design. Iidh	ting calculations i	n DIALux and
Relux, street lighting control systems.			
611Y1PV Parametri	ical and Multicriterial Programming	KZ	2
Solution to the problem of linear progr	amming with a parameter in objective function, on right sides and in the matrix of coeficients of linear constraints	Computation of	efficient solution.

617Y1PM Personnel Management	KZ	2
Human sources, work group, man as personality, planning, choice, evaluation and education of human sources, work adaptation, teamw	vork, intercultural communicatio	in.
612Y1PC Pedestrian and Cycling Transport Reutes for padestrians Pedestrian crossings Medifications for blind, dim sighted and disabled people. Design of evels reutes petwork Wa	ws of sycle route layout and dos	2
for cyclists. Separation of cyclists from other transport modes. Cycle tracks and its design - one way streets, reserved traffic lanes, bus s	tons crossings with other trans	nort modes
crossroads. Traffic signs and road marking for cyclists.	topo, orocomigo mar othor tranc	port modolo,
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.	Nork with editing programs (wit	hin the user
level scope) using layers, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics cards	8.	
614Y1P2 Computer Aid of Transportation Projecting 2	KZ	2
Overview of CAx application for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programmir	ng, scripting, data exchange). A	dvanced blocks
modification (attributes, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (c	lotoidic transition curve, cross-a	and longitudinal
section). Basics of 3D modelling.		
618Y1PS Computer Simulations in Mechanics	ia madal davalar mant and ada	2 ntation of
Philippies and overview of programs for success analysis of structures. Numerical methods in mechanics, innite element method. Geometry from other CAE systems. Assignment of material properties. The types of elements and their use. Discretization of solid mode	L Boundary conditions and ana	plation of the
load. Basic tasks of structural and modal analysis. Introduction to complex nonlinear problems.	. Doundary conditions and app	
614Y1PI Corporate Information System	K7	2
Data-information-knowledge, components of information system, syntatic and semantic sense of data, structure of corporate information	n system, particular information	system
(personalistic, production, storage, etc.), corporate information politic and information control, risks of information system operation, legal	l environment of information sys	stem operation,
state information system, information system security, data protection, safety politics.		
614Y1PZ Advanced Data Processing in Spreadsheets	KZ	2
Students will be familiar with principles of working in a spreadsheet. Graphic layout of the table appearance, formatting of numbers, inse	rtion of formulas and functions,	including
addressing, error detection. Working with large spreadsheets, filters, advanced filters, database functions. Pivot tables and charts, conditio	nal formatting, solution finding,	solver, macros,
COAVADO	1/7	0
621Y1PC AIC Procedures and Activities	n the course discusses air traf	Z fic control at
the airports and low visibility operational procedures. Students will during the course learn basic safety management applications applie	d across the infrastructure	ne control at
612V1PD Assessment of Transport		2
Assessment of transport structures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis, Landscape character	er, possibilities of its protection a	nd assessment
transport structures on the landscape. Rating fragmentation and landscape connectivity in the preparation of linear structures. Practical	examples of assessment of traf	fic buildings on
the environment.		Ū
620Y1PK Product Quality Management Processes	KZ	2
General principles of organization management. Management systems and international standards; quality management systems. Quali	ty products, processes, system	s. A framework
of standards for systems management, management principles. Principles of process management, monitoring and measurement systems	management. Uniform framewo	ork of standards
for systems management. Process management principles. Metrology and testing. Product certification.		
614Y1PJ C Programming Language	KZ	2
C programming language. Preprocessor, basics of the C language (data types, syntax, commands), functions, pointes, dynamical memory	y allocation, string, files, structur	res and unions.
Implementations of abstract data types (FIFO, LIFO, list), programming techniques (sorting, searching, recursion), using bitwise oprerate		0
bizition Designing Roads in Civil 3D I	nte de through the complete de	Z
particular linear building from the initial situation over the longitudinal section, to the model and work sections and the cubic capacity ca	alculation. The course also inclu	ides a basic
explanation of the traffic building design in the real-life profession.		
612Y1C2 Designing Roads in Civil 3D II	KZ	2
The course is devoted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Stude	ents go through the complete de	sign of this
particular linear building, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity ca	alculation. The previously acqui	red skills are
improved and developed. Students learn to design intersections.		
614Y1PA 3D Modeling in AutoCAD	KZ	2
Work in 3D non-parametric modeller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup ci	reation, object data creation, wo	ork with data
connected with external database. Basic definition of work with lights, materials and reflexes. Models presentation.	1/7	
616 Y 1PV Operation, Construction and Maintenance of Venicles		Z
General principles of engine diagnostics	ion measurement. Transmissio	n mechanism.
621V1PL Operational Aspects of Aerodromes	K 7	2
Operational aspects of aerodromes Location of aerodrome and orientation of runways. Requirements for apron. Capacity of airports run	ways and terminals Operation	under winter
conditions. Firefighting units. Protection against unlawful interference. Local transport connection. Environmental protection.		
621Y1PA Air Traffic Control Operating Procedures	KZ	2
Practical exercises on the ATC simulator with the following focus - getting familiar with the simulation environment, acquiring basic habits	s, aircraft identification procedu	res, vectoring,
level changes, ATC clearance, use of RNAV points. Practical exercises focused on the basis of vectoring, timely application of vertical sp	bacing, EST and REV message	transmission.
Exercises in the APPROACH airspace, arrivals, departures and conflict solutions.		
612Y1PU Organization Disposition of Railway Stations	KZ	2
Connecting station. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial compa	ny areas. Zone stations. Forma	tion yards.
Reserve stations. recinicion of work in railway station with regard to its disposition. Railway station documentations in the Czech Reput		0
CIZTIRU Kallway Lines Reconstruction	and substructure maintenance	Z
and organising possesions, preparation of railway lines reconstruction and maintenance, process of railway line reconstruction		, soneuunny
616Y1RE Control and Electronic Vehicle Systems	k7	2
Elementary concepts of regulation. Tools for analytical solution, linear system description. Basic types of a regulator (PID). properties. adva	antages, disadvantages, function	n. Conventional
and hybrid drive control. Electric drive. Vehicle communication bus (CAN, LIN, FlexRay, ISObus, KWP2000 protocole etc.). Vehicle electric	onic control, safety, communica	ation and
comfort systems.	-	

	KZ	2
The position of human resources in the organization and related disciplines file. Substance, importance and challenges of human resources mana	gement. Internal and	d external
environment of human resource management. Human resource planning. Search, recruitment and selection of employees. Motivation, evaluation ar	nd remuneration of s	taff. Positioning,
dismissal and redundancies of employees. Education of employees. Planning career management.	1/7	
617Y1SI Litan Simulation	KZ	2 price and
determine the quantity and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequences of the consequence	ences of their decisi	ons by the form
of financial corporate reports and they use this information for other business decisions.		ons by the form
621Y1SI ATC Simulator	K7	2
Familiarization with the simulation environment, acquiring basic habits, aircraft identification procedures, vectoring, level changes, ATC clearance,	use of RNAV points.	Practical
exercises focusing on basic vectoring, early application of vertical separation, EST and REV message passing. Practical exercises in the APPROA	CH area, practicing	arrival and
departure management procedures, conflict resolution.		
620Y1SC Sensors and Actuators	KZ	2
Principles of sensors and actuators. Basics of measuring theory and actuating influence. The respective technologies and construction principles. Sensor	ors of mechanical, e	lectro-magnetic,
state (temperature, humidity), chemical and particle flow values. Electrical, pneumatic and hydraulic actuators and solid phase elements.	-,,	
617Y1SL Sociology of Human Resources	KZ	2
Human resources and their importance, work group as a special kind of social group, communication, personal management, modern management	, human resources p	lanning, culture
611Y1SI Iransportation Software Engineering	KZ	2 rmal tashniguan
and practical usuane	lementation using to	rmai techniques
616V1KS Ouglity and Reliability of Vahicles	K7	2
Quality and reliability theory in design, development production and operation of vehicles. Definition and possible approach to quality and reliability	V Key legislation FM	Z IFA (Failure
Mode and Effects Analysis). QFD (Quality Function Deployment). DFx (Design for Assamly, Manufacturving, Quality, Services) and other metho	ds used in industrial	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 deve	lopment of road net	work, short,
medium and long-term strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and	repair methods are o	discussed in the
classroom as well as investment activity in highway engineering.		
616Y1SO Strategy and innovation in mobility	KZ	2
Introduction to innovation, definition. Innovation strategy. Innovation life cycle and ecosystem, main sources and funding opportunities. Successful	innovation project, K	(Pls, budget;
co-financing, evaluation. Sprint method and its use. Innovative business model - main patterns and examples, design, strategy, processes and out	ook (business plan a	and possibilities
of use). Creating an innovation strategy. Customer and value map, design and testing.		
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 management	t, line networking. C	reating and
evaluation of the unretable. Vehicle circulation creation. Optimizing unversing and analiging them in turnus. Effects of pamer-free and public trans	sport preierences. In	
621V1TH Aircraft Technical Handling	K7	2
621Y1TH Aircraft Technical Handling Aircraft towing and pushing tractors. GPU. Air conditioning and heating units. Aircraft fuel equipment. De-acing and anti-icing units. Loading and un	KZ	2 ment for
621Y1TH Aircraft Technical Handling Aircraft towing and pushing tractors. GPU. Air conditioning and heating units. Aircraft fuel equipment. De-acing and anti-icing units. Loading and un passangers onboarding and offboarding. Operational processes of aircraft technical handling and regulations. Modernization and technical progress	KZ loading units. Equip	2 ment for
621Y1TH Aircraft Technical Handling Aircraft towing and pushing tractors. GPU. Air conditioning and heating units. Aircraft fuel equipment. De-acing and anti-icing units. Loading and un passangers onboarding and offboarding. Operational processes of aircraft technical handling and regulations. Modernization and technical progres 611Y1TG Graph Theory	KZ loading units. Equip ss. KZ	2 ment for 2
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621Y1TH Aircraft Technical Handling Aircraft towing and pushing tractors. GPU. Air conditioning and heating units. Aircraft fuel equipment. De-acing and anti-icing units. Loading and un passangers onboarding and offboarding. Operational processes of aircraft technical handling and regulations. Modernization and technical progress 611Y1TG Graph Theory Basic concepts and terminology of graph theory, graph representation. Problems of graph theory, problem instance. Graph search algorithms, trees path problem, Eulerian path, bipartite graph matching, flow networks, circulations, critical path method, traveling salesman problem. Problem of existe	KZ loading units. Equip ss. KZ s, minimum spannin nce and optimizatior	2 ment for 2 g tree, shortest n and algorithms
621Y1TH Aircraft Technical Handling Aircraft towing and pushing tractors. GPU. Air conditioning and heating units. Aircraft fuel equipment. De-acing and anti-icing units. Loading and un passangers onboarding and offboarding. Operational processes of aircraft technical handling and regulations. Modernization and technical progress 611Y1TG Graph Theory Basic concepts and terminology of graph theory, graph representation. Problems of graph theory, problem instance. Graph search algorithms, trees path problem, Eulerian path, bipartite graph matching, flow networks, circulations, critical path method, traveling salesman problem. Problem of exister for their solving. Computational complexity, dealing with NP-complete problems, heuris	KZ loading units. Equip ss. KZ s, minimum spannin nce and optimizatior	2 ment for 2 g tree, shortest n and algorithms
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621Y1TH Aircraft Technical Handling Aircraft towing and pushing tractors. GPU. Air conditioning and heating units. Aircraft fuel equipment. De-acing and anti-icing units. Loading and un passangers onboarding and offboarding. Operational processes of aircraft technical handling and regulations. Modernization and technical progress 611Y1TG Graph Theory Basic concepts and terminology of graph theory, graph representation. Problems of graph theory, problem instance. Graph search algorithms, trees path problem, Eulerian path, bipartite graph matching, flow networks, circulations, critical path method, traveling salesman problem. Problem of existe for their solving. Computational complexity, dealing with NP-complete problems, heuris 614Y1TI Creating Interactive Internet Applications Possibilities of scripting language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions	KZ loading units. Equip ss. KZ s, minimum spannin nce and optimizatior KZ S. Your own application	2 ment for 2 g tree, shortest n and algorithms 2 on programmed
621Y1TH Aircraft Technical Handling Aircraft towing and pushing tractors. GPU. Air conditioning and heating units. Aircraft fuel equipment. De-acing and anti-icing units. Loading and un passangers onboarding and offboarding. Operational processes of aircraft technical handling and regulations. Modernization and technical progress 611Y1TG Graph Theory Basic concepts and terminology of graph theory, graph representation. Problems of graph theory, problem instance. Graph search algorithms, trees path problem, Eulerian path, bipartite graph matching, flow networks, circulations, critical path method, traveling salesman problem. Problem of existe for their solving. Computational complexity, dealing with NP-complete problems, heuris 614Y1TI Creating Interactive Internet Applications Possibilities of scripting language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions in PHP language.	KZ loading units. Equip ss. KZ s, minimum spannin nce and optimizatior KZ s. Your own application	2 ment for 2 g tree, shortest n and algorithms 2 on programmed
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612Y1ZUPrinciples of UrbanismKZ2Survey on history of city and settlement building. Functional components and their mutual relations (working, living, recreation, transportation). Spacial arrangement of settlements. Types of towns or cities with a certain prevailing function, forms of their development. Brief overview of land-use planning.KZ2615Y1ZVEast-West dichotomy: Prelude to the Cold WarKZ2Historical prologue, evolution of the "West" and "East" from the 1500s. Focus on the history in the period between 1850 nad 1950. Milestones and continuity of the international relations in the end of 19th century and the beginning of the 20th century. Revolutions, the causes and consequences. Scientific and technological progress, the causes and consequences. Economic and financial history. Social changes. Discussions on texts, sources.616Y1ZLVehicle Testing, Legislation and ConstructionKZ2Vehicle costruction, aggregate computing, driving resistance, building and parameters of traction, constructional arrangement of personal cars, trucks, buses, motorbikes, legislation 	parameters, return valu	e, recursion, Program creation				
Survey on history of city and settlement building. Functional components and their mutual relations (working, living, recreation, transportation). Spacial arrangement of settlements. Types of towns or cities with a certain prevailing function, forms of their development. Brief overview of land-use planning. 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 continuity of the international relations in the end of 19th century and the beginning of the 20th century. Revolutions, the causes and consequences. Scientific and technological progress, the causes and consequences. Economic and financial history. Social changes. Discussions on texts, sources. 616Y1ZL Vehicle Testing, Legislation and Construction KZ 2 Vehicle costruction, aggregate computing, driving resistance, building and parameters of traction, constructional arrangement of personal cars, trucks, buses, motorbikes, legislation in the EU and in the world, creation of technical legislation, testing methods, vehicle tests, accelerated tests, mathematical modelling in testing.	612Y1ZU	Principles of Urbanism	KZ	2		
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, evolution of the "West" and "East" from the 1500s. Focus on the history in the period between 1850 nad 1950. Milestones and continuity of the international relations in the end of 19th century and the beginning of the 20th century. Revolutions, the causes and consequences. Scientific and technological progress, the causes and consequences. Economic and financial history. Social changes. Discussions on texts, sources. 616Y1ZL Vehicle Testing, Legislation and Construction KZ 2 vehicle costruction, aggregate computing, driving resistance, building and parameters of traction, constructional arrangement of personal cars, trucks, buses, motorbikes, legislation in the EU and in the world, creation of technical legislation, testing methods, vehicle tests, accelerated tests, mathematical modelling in testing.	Survey on history of city	v and settlement building. Functional components and their mutual relations (working, living, recreation, transportation). Space	cial arrangement o	of settlements.		
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 continuity of the international relations in the end of 19th century and the beginning of the 20th century. Revolutions, the causes and consequences. Scientific and technological progress, the causes and consequences. Economic and financial history. Social changes. Discussions on texts, sources. 616Y1ZL Vehicle Testing, Legislation and Construction KZ 2 Vehicle costruction, aggregate computing, driving resistance, building and parameters of traction, constructional arrangement of personal cars, trucks, buses, motorbikes, legislation in the EU and in the world, creation of technical legislation, testing methods, vehicle tests, accelerated tests, mathematical modelling in testing. 2	Types of towns or cities	with a certain prevailing function, forms of their development. Brief overview of land-use planning.				
Historical prologue, evolution of the "West" and "East" from the 1500s. Focus on the history in the period between 1850 nad 1950. Milestones and continuity of the international relations in the end of 19th century and the beginning of the 20th century. Revolutions, the causes and consequences. Scientific and technological progress, the causes and consequences. Economic and financial history. Social changes. Discussions on texts, sources. 616Y1ZL Vehicle Testing, Legislation and Construction KZ 2 Vehicle costruction, aggregate computing, driving resistance, building and parameters of traction, constructional arrangement of personal cars, trucks, buses, motorbikes, legislation in the EU and in the world, creation of technical legislation, testing methods, vehicle tests, accelerated tests, mathematical modelling in testing.	615Y1ZV	East-West dichotomy: Prelude to the Cold War	KZ	2		
in the end of 19th century and the beginning of the 20th century. Revolutions, the causes and consequences. Scientific and technological progress, the causes and consequences. Economic and financial history. Social changes. Discussions on texts, sources. 616Y1ZL Vehicle Testing, Legislation and Construction KZ 2 Vehicle costruction, aggregate computing, driving resistance, building and parameters of traction, constructional arrangement of personal cars, trucks, buses, motorbikes, legislation in the EU and in the world, creation of technical legislation, testing methods, vehicle tests, accelerated tests, mathematical modelling in testing.	Historical prologue, evo	ution of the "West" and "East" from the 1500s. Focus on the history in the period between 1850 nad 1950. Milestones and con	tinuity of the interr	national relations		
Economic and financial history. Social changes. Discussions on texts, sources. 616Y1ZL Vehicle Testing, Legislation and Construction KZ 2 Vehicle costruction, aggregate computing, driving resistance, building and parameters of traction, constructional arrangement of personal cars, trucks, buses, motorbikes, legislation in the EU and in the world, creation of technical legislation, testing methods, vehicle tests, accelerated tests, mathematical modelling in testing.	in the end of 19th century and the beginning of the 20th century. Revolutions, the causes and consequences. Scientific and technological progress, the causes and consequences.					
616Y1ZLVehicle Testing, Legislation and ConstructionKZ2Vehicle costruction, aggregate computing, driving resistance, building and parameters of traction, constructional arrangement of personal cars, trucks, buses, motorbikes, legislationin the EU and in the world, creation of technical legislation, testing methods, vehicle tests, accelerated tests, mathematical modelling in testing.	Economic and financial	history. Social changes. Discussions on texts, sources.				
Vehicle costruction, aggregate computing, driving resistance, building and parameters of traction, constructional arrangement of personal cars, trucks, buses, motorbikes, legislation in the EU and in the world, creation of technical legislation, testing methods, vehicle tests, accelerated tests, mathematical modelling in testing.	616Y1ZL	Vehicle Testing, Legislation and Construction	KZ	2		
in the EU and in the world, creation of technical legislation, testing methods, vehicle tests, accelerated tests, mathematical modelling in testing.	Vehicle costruction, aggregate computing, driving resistance, building and parameters of traction, constructional arrangement of personal cars, trucks, buses, motorbikes, legislation					
	in the EU and in the wo	rld, creation of technical legislation, testing methods, vehicle tests, accelerated tests, mathematical modelling in testing.				

Name of the block: Elective courses Minimal number of credits of the block: 0 The role of the block: V

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

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

614DPK	Digital Support for Designing of Roads and Highways	Z	0		
Seminars possibilities of	f technical processing problems focused on designing of roads and highways.				
614DZT	Digital Support for Railway Lines	Z	0		
Seminars possibilities o	Seminars possibilities of technical processing problems solved in the field of railway lines.				
611SCFZ	Seminar of Physics	Z	0		
Solving problems on kir	olving problems on kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermodynamics.				

621SLD	Seminar of Air Transport	Z	0	
History, definitions, terminology, basic rules. VFR / IFR. Basics of aerodynamics. Propulsion of aircraft. Aircraft design. Basics of navigation, radio navigation. Weight, balance,				
performance. Flight pla	nning, optimization of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic n	nanagement, grou	und handling,	
security. Air crew. Airlin	es and economics. Space technologies.			
618SPP	Seminary from Elasticity and Strength	Z	0	
Excersise for practice.	ension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of be	am. Analysis of d	leflection curve	
of beam. Torsion of circ	le cross section. Combined loading. Stability of compressed bar and buckling.			
618STD	Seminary from Technical Documentation	Z	0	
Technical standards, in	ernational standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimension	al and geometric	al accuracy,	
arrangement of drawing	g sheets.			
618SS	Seminary from Structural Analysis	Z	0	
Examples for practise.	General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam	and simple framev	work. Application	
of principle of virtual wo	orks for calculation of reactions of staticaly determinate systems. Determination of axial forces in truss construction - method	of joints and meth	od of sections.	
Geometry of cross sect	ions. Plane fiber polygons.			
611SSF	Secondary School Physics Course	Z	0	
Basics of kinematics, d	ynamics, 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:

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	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	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	L	J
615JZ4I	Foreign Language - Italian 4	Z,ZK	3	0P+4C+10B	L	J
615JZ4N	Foreign Language - German 4 Eva Rezlerová, Sv tlana Petrová, René Skalický	Z,ZK	3	0P+4C+10B	L	J
615JZ4R	Foreign Language - Russian 4 Marie Michlová, Vilma Gottwaldová	Z,ZK	3	0P+4C+10B	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 2022/23

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	of language struct	ture knowledge			
and perceptive and con	nmunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Wo	rk with (profession	nal) text and its			
features. Practice of ora	and written presentation.					
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	of language struct	ture knowledge			
and perceptive and con	nmunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Wo	rk with (profession	nal) text and its			
features. Practice of ora	and written presentation.					
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	of language struct	ture knowledge			
and perceptive and con	nmunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Wo	rk with (profession	nal) text and its			
features. Practice of ora	and written presentation.					
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 structure knowledge						
and perceptive and con	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	eatures. Practice of oral 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	ure knowledge	
and perceptive and corr	municative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Wo	rk with (professior	nal) text and its	
features. Practice of ora	I 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	of language struct	ure knowledge	
and perceptive and corr	municative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Wo	rk with (professior	nal) text and its	
features. Practice of ora	I and written presentation.			
615JZ4I	Foreign Language - Italian 4	Z,ZK	3	
Grammar and stylistics.	Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of	of language struct	ure knowledge	
and perceptive and corr	municative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Wo	rk with (professior	nal) text and its	
features. Practice of ora	I and written presentation.			
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 language struct	ure knowledge	
and perceptive and corr	municative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Wo	rk with (professior	nal) text and its	
features. Practice of ora	I 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 communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its				
features. Practice of oral and written presentation.				
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 language struct	ure knowledge	
and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its				
features. Practice of oral and written presentation.				

List of courses of this pass:

Code	Name of the course	Completion	Credits		
611CAL1	Calculus 1	Z,ZK	7		
Sequence of real nu	imbers and its limit. Basic properties of mappings. Function of one real variable, its limit and derivative. Indefinite integral, Newton integr	ral, Riemann integr	al, improper		
	Riemann integral. First-order differential equations, linear differential equations.				
611CAL2	Calculus 2	Z,ZK	5		
Linea	r differential equations and their systems, differential calculus of functions of several real variables. Riemann integral in Rn. Line and	surface integrals.			
611EMOP	Electromagnetic Field and Optics	Z,ZK	4		
	Electric field. Electric current. Magnetic field. Electromagnetic field. Optics. Basics of solid-state physics.				
611FYZ	Physics	Z,ZK	5		
	Kinematics, dynamics, Newton's laws, force fields, mechanics of continuum, thermodynamics, introduction to electrostatics and elect	tric current.			
611GIE	Geometry	KZ	3		
Orthographic and	oblique projections, linear perspective. Topographic surfaces and their orthogonal projection. Differential geometry of curves - param	neterization, arc of	the curve,		
torsion a	and curvature, Frenet's trinedron. Kinematics - a curve as a trajectory of the motion, the velocity and acceleration of a particle moving	g on a curved path			
611LA		Z,ZK	3		
Vector spaces (line	ar combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and the their applications. Systems of linear equations and the description their applications. Systems of linear equations and the description of the descr	ir solvability. Deterr	ninants and		
611MDSD	Collecting and Proposing of Troffic Data		2		
Basic princ	CUIECUIIIY driv Frocessing of the field of traffic data. Data preprocessing and analysis for use in a	NZ Inditional application	J		
611MSD	Modeling of Systems and Processing and analysis for use in a		лтэ. Л		
System and subsys	tem external and internal system description continuous and discrete system mathematics as a tool, examples of formulation of differe	∠,∠N	equations		
Linear and non	linear system, stationary and non-stationary system, causality. Convolutional integral, Laplace and Z transformations, Transfer function	on. Stability of LTI s	vstems.		
	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, thermody	namics.			
611SSF	Secondary School Physics Course	Z	0		
	Basics of kinematics, dynamics, thermodynamics, electric field and magnetic field.				
611STAT	Statistics	Z,ZK	4		
Definition of probab	ility, random variable and its description, known distributions, random vector, function of random variable. Methods of point estimation. T	esting of statistical	hypothesis.		
Regression and cor	relation, linear regression, correlation coefficient, coefficient of determination, the general linear model, statistical inference in linear re	gression, analysis	of variance,		
	multiple regression, the use of matrices in regression.				
611TGA	Graph Theory and its Applications in Transport	Z,ZK	4		
Basic terms of	graph theory, paths in graphs, flows in networks, location problems, design problems on graphs, optimum routing, use of graphs in c	other scientific disc	iplines.		
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		
Safe communicatio	n and methods for its assuring. Safety codes linear codes, cyclic codes, BCH codes, Reed-Solomon codes. Transmission channels, de	etection of transmis	ssion errors,		
	probability of undetected error. Design and assessment of detection codes; requirements of the European standard EN 50159.				

611Y1PV	Parametrical and Multicriterial Programming	KZ	2
Solution to the prol	blem of linear programming with a parameter in objective function, on right sides and in the matrix of coeficients of linear constraints. Co	omputation of effici	ent solution.
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.		
611Y1TG	Graph Theory	KZ	2
Basic concepts an	d terminology of graph theory, graph representation. Problems of graph theory, problem instance. Graph search algorithms, trees, min	nimum spanning tr	ee, shortest
path problem, Eule	rian path, bipartite graph matching, flow networks, circulations, critical path method, traveling salesman problem. Problem of existence a	ind optimization an	d algorithms
	for their solving. Computational complexity, dealing with NP-complete problems, heuris		
611Y1ZM	Foundation of MATLAB Programming	KZ	2
To explain the prine	ciple of algorithmization, flow charts, description of MATLAB environment and its settings, MATLAB help, mathematical operators, mathematical operators, mathematical devices and extends of the setting and environment and its settings of the setting and extends of the set	rices and elements	operations,
040000	control flow, inputs and outputs, graphics, optimization and program code debugging.	7 71/	•
612DOSI	Iraffic Surveys and Simulations	Z,ZK	3
vvays of data colle	ection in road transport. Traffic surveys, Automatic traffic counting, Preparation and implementation of traffic survey. Description of Indi	vidual approaches	tocused on
	es norme a measurements, methods of data processing and evaluation. Principles of simulation, sw environment for creating trans-	models. Hame mo	uel design
	Transport Models and Transport Evenses	776	2
Parameters of the	Intrisport induces and methods for their measurement. Models of the traffic flow communications load, line and urban systems. Theory of a		s Quality of
transport and its	assessment. Statistical characteristics of transport Transport excesses, their analysis, the causes, identify and minimize the consequ	ences Improving c	of transport
	safetv and fluency.	onooo. mproving c	i tiunoport
612MKOD	City Rail Transport	7 7K	5
City and suburb	an rail transport. Tram lines layout and city roads. Tram track geometry parameters. Tram track superstructure. Turnouts and other con	struction of tram li	nes. Tram
stops and turn space	ce. Underground and its basic characteristics. Underground nets in the world and undeground history in Prague. Underground track geon	netry parameters. L	Inderground
	track superstructure and substructure. Underground stations. Suburban rail transport.		0
612POSD	Assessment of Transport Structures	KZ	3
EIA process - histo	rical context, impact and variants, analysis of individual phases of EIA process, SEA, legislative framework in the Czech Republic, El	U directives, implei	mentation of
EU directives, publ	ic participation, process in practice. Methods of assessing the effects of transport structures on the environment. SWOT analysis. Multic	riteria methods for	assessment
	of transport structures, TUKP method. Risk analysis. Landscape.		
612PPOK	Designing Roads, Highways and Motorways	KZ	3
Definition, types,	ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard	speed. Route in r	ural areas.
Range of vision for	r stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet	ty device. Crossing	s, junctions,
	intersections.		
612PRMK	Urban Road Traffic and Design	Z,ZK	5
Composition of urb	ban road, elements and routes for traffic, pedestrian and cycling transport, projection of intersections, traffic lights and its traffic safety p	roposal, roundabo	uts, calming
	of traffic, precaution for blind & amp; partially-sighted, parking, traffic area, induction of traffic, organization and regulation of trar	nsport.	1
612PUSS	Organization Disposition of Railway Stations	KZ	3
Connecting stati	on. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zor	ne stations. Format	ion yards.
Rese	rve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic	c railway network.	
612SDK	Highways, Motorways and Intersections	Z,ZK	4
Roads and motorw	ays network, transport output. Types of direction curves. Hairpin bend. Stopping sight distance and overtaking sight distance. Levels of t	raffic service. Desi	gn elements
OF CLOSSIDAUS ALL	d intersections. Crossroads. Roundabouts. Intersections. Special types of junctions. Capacity of crossroads and intersections. Structu motorways. Road engineering structures. Assessment of route alternatives	ire of pavement of	TUAUS ATTU
612\/HD	Public Transport	7 7K	5
Importance of pu	I upile transport transport research evaluation planning of lines routes and territory operation planning of operation parameters, prep	aration of operation	n network
conceptions opera	ation-technology and operation-economically conditions of planning of operation conceptions, planning of operation conception, planning of operation, conception, concept	a and realisation o	f timetables
,,	prepare of infrastrukture (route, stops), preference of public transport, financing.	9	
612X31D	Project 1 DOS	Z	2
612X32D	Project 2 DOS	7	2
612X33D	Project 3 DOS	7	1
612X33D	Applied Foology		- +
	Applied Ecology	KZ	
ecology Landso	ecological concepts and principles, ecosystem, ecological factors, energy now infodent in ecosystem. Application of knowledge with	side Landscape a	nd nature
ecology. Lanusc	protection. Applied ecology.	side. Landscape a	iu nature
612Y1C1	Designing Roads in Civil 3D I	K7	2
The course is de	voted to the traffic buildings design field specifically the design of roads as such by the means of a 3D software. Students go through	h the complete des	ian of this
particular linear b	building, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The	course also includ	les a basic
	explanation of the traffic building design in the real-life profession.		
612Y1C2	Designing Roads in Civil 3D II	K7	2
The course is de	voted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through	h the complete des	sign of this
particular linear b	uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The	previously acquire	d skills are
	improved and developed. Students learn to design intersections.		
612Y1DS	Project Documentation in Practice	KZ	2
Project document	tation creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process.	Budget and pricing	g. Practical
	creation of some project documentation parts.		
612Y1HD	Traffic Noise	KZ	2
Acoustic introducti	ion, basic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regulation	s. Creation acoust	ic climate in
area, principles	of urban acoustic, noise transmission, soundproofing. Types of noise sources in area. Determination of acoustic situation in the area	of interest. Method	dology of
	computing and measurement of transport noise. Acoustic studies, measuring protocol.	1	
612Y1KN	Combined Transportation	KZ	2
Combined transp	port strategy and legislation. Load units. Means of transport in combined transport. Combined transport systems. Transshipping areas	. Multimodal logisti	c centres.

612Y1KP	Communication and Promotion of Transport Projects	KZ	2
Fundamentals of	Public Relations and the power of public opinion. Work and tasks of PR department and press spokesperson. Communication with th	e media, the public	c on social
networks and bey	ond. Communication strategy of transport projects. Systematic goodwill building. Crisis situations in communication and preparation f influence of political marketing and political PR on transport projects. Lobbing	or crisis communic	cation. The
612Y1PC	Pedestrian and Cycling Transport	KZ	2
Routes for pedestri	ans. Pedestrian crossings. Modifications for blind, dim-sighted and disabled people. Design of cycle routes network. Ways of cycle route	layout and design	parameters
for cyclists. Separ	ation of cyclists from other transport modes. Cycle tracks and its design - one way streets, reserved traffic lanes, bus stops, crossing:	s with other transpo	ort modes,
	crossroads. Traffic signs and road marking for cyclists.		
612Y1PD	Assessment of Transport	KZ	2
Assessment of tran	sport structures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibilities of the landscape. Bating fragmentation and landscape connectivity in the proparation of linear structures. Bractical examples of ass	its protection and a	assessment
	the environment.		bullulings on
612Y1PU	Organization Disposition of Railway Stations	KZ	2
Connecting static	on. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zor	e stations. Format	ion yards.
Reser	ve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic	railway network.	
612Y1RU	Railway Lines Reconstruction	KZ	2
Keeping railway ili	and organising possesions, preparation of railway lines reconstruction and maintenance, process of raiway line reconstruction	ure maintenance, s	scheduling
612Y1SU	Management and Maintenance of Roads	K7	2
Getting familiar w	ith ownership of roads in the Czech Republic and the administration of the road at the state and county level. It is presented develop	ment of road netwo	ork, short,
medium and long-to	erm strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and repair	methods are discu	ussed in the
	classroom as well as investment activity in highway engineering.		
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 coordination of lin	es. Principles of lin	ne tracing.
Basic operating p	arameters and transport variations. Types of lines according to their routing and basic operating parameters. Time coordination of line	es. Operational traf	fic control.
612V17U		K 7	2
Survey on history	of city and settlement building Functional components and their mutual relations (working living recreation transportation). Spacial	arrangement of se	∠ ettlements
	Types of towns or cities with a certain prevailing function, forms of their development. Brief overview of land-use planning.		
612ZADY	Introduction to Transportation Engineering	Z,ZK	4
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 transpo	rt. Railway stations	. Local
	communications. International airports.		
612ZELP	Railway Operation	Z,ZK	4
Legislation in railv	vay transport. Railway vehicles. Railway signals and signal devices. Railway traffic organisation and operation. Simplified railway traffi	c operation. Railwa	ay vehicles
040770	brakes. Railway venicles marking. Operation intervals. Theoretical graph of train running.	7 71/	4
612ZIS	KallWay Lines and Stations	Z,ZK	4 way lines
	Railway control systems in relation to infrastructure. Operating and carriage points, Railway lines net and category. Traction in rail t	ransport.	way intes.
614ASD	Algorithm and Data Structures	KZ	3
Students will be fan	iliarized with selected basic and derived data structures, algorithms, their properties and their design procedure. Students will analyze	problems, propose	e theoretical
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 o	of Boolean
	algebra with forming the conditions for the algorithms.		
614DATS	Database Systems	KZ	2
Basic concepts c	a database systems, conceptual model, relational data model, the principles of normal forms, relational database design, security an gueries relational algebra SOL language client / server multilayer architectures distributed database systems. Access to data via	d integrity of data,	database
614DPK	Digital Support for Designing of Roads and Highways	7	0
oribrit	Seminars possibilities of technical processing problems focused on designing of roads and highways.	-	Ū
614DZT	Digital Support for Railway Lines	Z	0
	Seminars possibilities of technical processing problems solved in the field of railway lines.		
614PODP	Computer Aid of Transportation Projecting	KZ	3
Overview of CAx ap	oplication for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, dat ites, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transition)	a exchange). Adva	Inced blocks
mounication (attribu	section). Basics of 3D modelling.	i cuive, cioss-anu	longituulitai
614PRG	Programming	KZ	2
Algorithm develo	pment, methods of structured programming, high-level programming languages, basics of C programming languages (types, variable	s, conditions, cycle	es, arrays,
	functions), programming techniques, complexity.		
614X31D	Project 1 DOS	Z	2
614X32D	Project 2 DOS	Z	2
614X33D	Project 3 DOS	Z	4
614Y1AV	Animation and Visualization	KZ	2
Advanced modifica	tions and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and Spa	ace Warp objects. A	Atmospheric
and other effect	s, rendering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animation	n using Inverse Kin	ematics.
614Y1BE	Barrierless Transport	KZ	2
of barrierless on virg	iess accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students	will gain theoretica	technology
	Theoretical knowledge will be supplemented by practical examples.	ฉาน และเรษบเ เสแบก	teennology.
614Y1BM	Biometric Methods	KZ	2
Basic biometric te	rms, authentication methods, principles and performance measurement of biometric systems, overview of biometric technologies, ha	nd geometry, iris r	ecognition,
retina recognition n	nethod, 2D and 3D face recognition, vein patterns on the wrist, ear biometrics, fingerprint recognition, skin spectroscopy, behavioral r	nethods, the use o	f biometrics
	in transport applications, safety and risks of biometric technologies.		

614Y1HW	Computer Hardware	KZ	2
Computer archite	cture, basics of logical circuits design and their realization using FPGA. In detail, description of computer architecture and separate r arithmetic and logical units, I/O subsystem.	parts designing - co	ontrollers,
614Y1MP	Modeling Complex Assemblies and Models in Parametric Modeller	KZ	2
Assemblies pro	gramming - tools and methodology of working subassemblies and assemblies, sheet metal parts modelling, welded assemblies, pipe Photorealistic output rendering - physical and material properties, lighting sources. MKP - visual example.	lines, and distributi	ion lines.
614Y1OJ	Object - oriented programming in JAVA	KZ	2
Objective Thinkin	ng, Encapsulation, Classes, Attributes, Access Modifiers, Methods and Overloading, Special Methods (Constructors, Getters / Setters	s), Basic Object	Methods,
Reference Data Typ	bes, Inheritance, Polymorphism, Statics, constants, interfaces, abstract classes, enum, packages, exceptions, collections, generics, lan	nbda expressions,	anonymous
614Y1OP	Operating System	K7	2
Distributions. Ins	tallation GNU/Linux OS. X-window system. Rights management - users and groups, ACL rights. Filesystems and attributes. Programs	s and processess.	OS boot,
runlevels. Basic o	console programs / commands. Config files. SW management, package systems. Programs in graphic shell - text, spreadsheet, graph	nic editors, sound,	video and
	communication. Services management. Safe and secure configuration of OS. Remote administration.	1	
614Y1P2	Computer Aid of Transportation Projecting 2	KZ	2
modification (attribu	spication for transportation projecting and AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, data spication to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transition	a exchange). Adva n curve. cross-and	longitudinal
	section). Basics of 3D modelling.		
614Y1PA	3D Modeling in AutoCAD	KZ	2
Work in 3D non-p	arametric modeller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup creation, object	data creation, work	k with data
044)(400	connected with external database. Basic definition of work with lights, materials and reflexes. Models presentation.	V7	0
614Y1PG Basic formats of (COMPUTER GRAPHICS traphic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with editi	ng programs (withi	Z n the user
Dasie Ionnais of (level scope) using lavers, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphic	s cards.	
614Y1PI	Corporate Information System	KZ	2
Data-informatio	n-knowledge, components of information system, syntatic and semantic sense of data, structure of corporate information system, pa	rticular information	system
(personalistic, prod	uction, storage, etc.), corporate information politic and information control, risks of information system operation, legal environment of	information system	n operation,
	state information system, information system security, data protection, safety politics.	1/7	0
614Y1PJ Corogramming lan	C Programming Language use Prennocessor basics of the Clanguage (data types syntax commands) functions pointes dynamical memory allocation strin	j KZ	Z
	Implementations of abstract data types (FIFO, LIFO, list), programming techniques (sorting, searching, recursion), using bitwise op	prerators.	and amono.
614Y1PZ	Advanced Data Processing in Spreadsheets	KZ	2
Students will be	familiar with principles of working in a spreadsheet. Graphic layout of the table appearance, formatting of numbers, insertion of formu	las and functions,	including
addressing, error de	etection. Working with large spreadsheets, filters, advanced filters, database functions. Pivot tables and charts, conditional formatting, s	olution finding, solv	ver, macros,
	data analysis. Examples and questions from various companies and training.	V7	2
Possibilities of scrir	Creating Interactive Internet Applications ting language PHP Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions. You	r own application n	∠ rogrammed
	in PHP language.		
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 styles, creating and editing large documents and basic typographic rules.	te tables of conten	ts, lists of
figures, tables, grap	ohs, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless ed	iting dissertations	and theses,
614Y1VM	Development of Applications for Mobile Devices	K7	2
Object oriented p	programming, Java programming language, development environment, operating system Android, development application - widgets,	, containers, thread	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 the issue of web browsers, creating one to three column layout pages, sites validation, conditional comments. Topics will be practice	/ and usability, CSS	S properties
614Y1W2	Webdesign 2	K7	11pies. 2
Students will learn	advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, web ser	ver installation + c	onfiguration
	directives. Topics will be practiced on practical examples.		
614Y1WG	Webdesign	KZ	2
Students will lear	n the basics of HTTP communication, URL and addressing, HTML5 markup language, advanced CSS3 techniques, accessible and u webdesign, content management systems, web server installation + configuration directives. The subject matter will be trained on e	isable web rules, ro	esponsive
614Y17.I	Fundamentals of programming in JAVA	K7	2
Introduction to the	Java SE Platform, IDE Installation and First Project, Comments, Variables and Type System, Operators, User Input and Parsing, Cha	in and Chain Conv	ersion, Text
Chain and Mathe	matical Methods, Terms, Relational Operators and Switches, Cycles for, while, foreach, Field - declaration, initialization, methods for	field work, ASCII, F	Functions,
	parameters, return value, recursion, Program creation	· · · · · · · · · · · · · · · · · · ·	
614Y1ZM	Fundamentals of parametric and adaptive modeling	KZ	2
Dasies of work at p	from and to another systems. Fundamentals of assemblies creation.	D Sketches. Import	t and export
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 proce	ssing from practice	e, advanced
metho	ods of presentation of the results. Seminar papers on open data. Consultation hours for seminar papers. Seminar paper submission a	ind presentation.	-
615JZ1A	Foreign Language - English 1		3 Elementer
Grammatical struct	ures and style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and coll stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles of	mmunicative skills.	∟iementary
615JZ2A	Foreign Language - English 2	ZZK	3
Grammatical struct	ures and style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and cor	mmunicative skills.	Elementary
	stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles of	of rhetoric.	

615JZ3F	Foreign Language - French 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	anguage structure	knowledge
and perceptive and	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v	with (professional)	text and its
645 1701	Features. Practice of oral and written presentation.	7	2
Grammar and styli	FULCION Language - Italian 5	∠ anguage structure	3 knowledge
and perceptive and	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v	with (professional)	text and its
	features. Practice of oral and written presentation.	, , , , , , , , , , , , , , , , , , ,	
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	anguage structure	knowledge
and perceptive and	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v	with (professional)	text and its
0451700	features. Practice of oral and written presentation.	~	
615JZ3R	Foreign Language - Russian 3		3 knowledge
and perceptive and	sucs. Selection of conversation and professional topics based on the language level and study locus at the Faculty. Improvement of a d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work y	with (professional)	text and its
and porcoparto and	features. Practice of oral and written presentation.		
615JZ3S	Foreign Language - Spanish 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	anguage structure	knowledge
and perceptive and	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v	with (professional)	text and its
	features. Practice of oral and written presentation.		
615JZ4F	Foreign Language - French 4	Z,ZK	3
Grammar and style	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of is d communicative skills, vecabulary development. Basic stylictic forms. Presentation of own knowledge in oral and written form. Work is	anguage structure	knowledge
and perceptive and	features. Practice of oral and written presentation.	with (professional)	IEXI ANU IIS
615JZ4I	Foreign Language - Italian 4	Z.7K	3
Grammar and styli	istics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la	anguage structure	knowledge
and perceptive and	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work	with (professional)	text and its
	features. Practice of oral and written presentation.		
615JZ4N	Foreign Language - German 4	Z,ZK	3
Grammar and styli	istics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la	anguage structure	knowledge
and perceptive and	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work i	with (professional)	text and its
615 IZ4D	Foreign Longuage – Dussion 4	774	2
Grammar and styli	FOLEIGH Latiguage - Russian 4 stics. Selection of conversation and professional tonics based on the language level and study focus at the Faculty. Improvement of li	∠,∠n anguage structure	о knowledae
and perceptive and	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v	with (professional)	text and its
		· · · · · · · · · · · · · · · · · · ·	
	features. Practice of oral and written presentation.		
615JZ4S	features. Practice of oral and written presentation. Foreign Language - Spanish 4	Z,ZK	3
615JZ4S Grammar and styli	features. Practice of oral and written presentation. Foreign Language - Spanish 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of li	Z,ZK anguage structure	3 knowledge
615JZ4S Grammar and styli and perceptive and	features. Practice of oral and written presentation. Foreign Language - Spanish 4 istics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work we	Z,ZK anguage structure with (professional)	3 knowledge text and its
615JZ4S Grammar and styli and perceptive and	features. Practice of oral and written presentation. Foreign Language - Spanish 4 istics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work w features. Practice of oral and written presentation.	Z,ZK anguage structure with (professional)	3 knowledge text and its
615JZ4S Grammar and styli and perceptive and 615X31D	features. Practice of oral and written presentation. Foreign Language - Spanish 4 istics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work w features. Practice of oral and written presentation. Project 1 DOS	Z,ZK anguage structure with (professional)	3 knowledge text and its 2
615JZ4S Grammar and styli and perceptive and 615X31D 615X32D	features. Practice of oral and written presentation. Foreign Language - Spanish 4 istics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work w features. Practice of oral and written presentation. Project 1 DOS Project 2 DOS	Z,ZK anguage structure with (professional) Z Z	3 knowledge text and its 2 2
615JZ4S Grammar and styli and perceptive and 615X31D 615X32D 615X33D	features. Practice of oral and written presentation. Foreign Language - Spanish 4 istics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work y features. Practice of oral and written presentation. Project 1 DOS Project 2 DOS Project 3 DOS	Z,ZK anguage structure with (professional) Z Z Z	3 knowledge text and its 2 2 4
615JZ4S Grammar and styli and perceptive and 615X31D 615X32D 615X33D 615Y1BO Fundamental legis	features. Practice of oral and written presentation. Foreign Language - Spanish 4 istics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v features. Practice of oral and written presentation. Project 1 DOS Project 2 DOS Project 3 DOS Work Safety and Health Protection in Transportation	Z,ZK anguage structure with (professional) Z Z Z KZ ealth protection pro	3 knowledge text and its 2 2 4 2 2
615JZ4S Grammar and styli and perceptive and 615X31D 615X32D 615X33D 615Y1BO Fundamental legis	features. Practice of oral and written presentation. Foreign Language - Spanish 4 istics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v features. Practice of oral and written presentation. Project 1 DOS Project 2 DOS 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. H health insurance of home and foreign business trips. statistics. working practice.	Z,ZK anguage structure with (professional) Z Z Z KZ ealth protection pro	3 knowledge text and its 2 2 4 2 ogrammes,
615JZ4S Grammar and styli and perceptive and 615X31D 615X32D 615X33D 615Y1BO Fundamental legis 615Y1DZ	features. Practice of oral and written presentation. Foreign Language - Spanish 4 istics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v features. Practice of oral and written presentation. Project 1 DOS Project 2 DOS 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. H health insurance of home and foreign business trips, statistics, working practice. History of Railway	Z,ZK anguage structure with (professional) Z Z Z KZ ealth protection pro	3 knowledge text and its 2 2 4 2 ogrammes, 2
615JZ4S Grammar and styli and perceptive and 615X31D 615X32D 615X33D 615Y1BO Fundamental legis 615Y1DZ Horse-drawn railw	features. Practice of oral and written presentation. Foreign Language - Spanish 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v features. Practice of oral and written presentation. Project 1 DOS Project 2 DOS 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. H health insurance of home and foreign business trips, statistics, working practice. History of Railway vays, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repi	Z,ZK anguage structure with (professional) Z Z KZ ealth protection pro KZ ublic", electric tract	3 knowledge text and its 2 2 4 2 ogrammes, 2 ion, World
615JZ4S Grammar and styli and perceptive and 615X31D 615X32D 615X33D 615Y1BO Fundamental legis 615Y1DZ Horse-drawn railw War II railways, railw	features. Practice of oral and written presentation. Foreign Language - Spanish 4 istics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Project 1 DOS Project 2 DOS 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. H health insurance of home and foreign business trips, statistics, working practice. History of Railway vays, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Reprivation way development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connection	Z,ZK anguage structure with (professional) Z Z KZ ealth protection pro KZ ublic", electric tract ons, railway lines co	3 knowledge text and its 2 2 4 2 ogrammes, 2 ion, World onstruction,
615JZ4S Grammar and styli and perceptive and 615X31D 615X32D 615X33D 615Y1BO Fundamental legis 615Y1DZ Horse-drawn railw War II railways, railw	features. Practice of oral and written presentation. Foreign Language - Spanish 4 istics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work of features. Practice of oral and written presentation. Project 1 DOS Project 2 DOS 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. H health insurance of home and foreign business trips, statistics, working practice. History of Railway vays, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Reprivation services" railway accidents, railway junctions. Excursions and projections.	Z,ZK anguage structure with (professional) Z Z KZ ealth protection pro KZ ublic", electric tract ons, railway lines c	3 knowledge text and its 2 2 4 2 ogrammes, 2 ion, World onstruction,
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615JZ4S Grammar and styli and perceptive and 615X31D 615X32D 615X33D 615Y1BO Fundamental legis 615Y1DZ Horse-drawn railw War II railways, railw War II railways, railw War II railways, railw G15Y1EH Versailles system, goals. Europe afte 615Y1FD France - geograp Frer 615Y1HD History of city mass cleara 615Y1HE Basic knowledge Creation and prote 615Y1HL Beginnings of flying World airports. Fa 615Y1MK	features. Practice of oral and written presentation. Foreign Language - Spanish 4 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of I d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work teatures. Practice of oral and written presentation. Project 1 DOS Project 2 DOS 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. H health insurance of home and foreign business trips, statistics, working practice. History of Railway way development in the 2nd half of 19th century, regional railways epoch, railways of the "First Reprival development in the 2nd half of 19th century, tregional railways epoch, railways of the "First Reprival development in the 2nd half of 19th century, tregional railway sepoch, railway form, caniway junctions. Excursions and projections. European Integration within Historical Context formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism. Li ar Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WVIII. Cold war and i New quality of French-German relationship a driving power of starting European integration. French Area Studies and Transportation	Z,ZK anguage structure with (professional) Z Z Z kZ ealth protection pro KZ ublic", electric tract ions, railway lines of KZ ffic, specialised terr ch gastronomy. KZ and developments blic and Slovakia. KZ factors on health of possibilities and skill KZ factors in the Czeci f aviation. Golden e KZ	3 knowledge text and its 2 2 4 2 ogrammes, 2 ion, World onstruction, 2 nciples and or Europe. 2 minology. 2 of tariff and 2 f workers. Ils of man. 2 h Republic. era of civil 2

615Y1NE	German in the Economy and Society	KZ	2
Recent economic	and social issues of German speaking countries and of the EU. Reading and listening of texts. Lexical, grammatical and semantic an	alysis of texts. Disc	cussion on
	selected topics.		
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 continuit	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	e causes and conse	equences.
	Economic and financial history. Social changes, Discussions on texts, sources.	7 71/	
616DOKY	Venicle Technology	Z,ZK	5
recnnical nome	enclature in transportation technology, vehicle in legislation, Design. Operation, Initidence on environment, vehicle and ecology. Iraction combustion engines, electric engines, change of energy principles. Powertrain construction, Power transmission, Brake system	on engine characte	ristics -
		774	5
Application of mech	venice Dynamics anics Wheel and axle suspension mechanism. Wheel to road positioning characteristics. Wheel - road contact. Skid and its character	ristics Longitudina	J dynamics
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.	,	,
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 wate	r transport. Alterna	tive means
	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 engin	ne, electric
	drive, steam engine, air engine. Energy accumulation means, accumulator, flywheel, fuel cell. Energy recuperation. WTW anal	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 n	nethods.
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
Quality and reliab	ility theory in design, development, production and operation of vehicles. Definition and possible approach to quality and reliability. Ket Access to Access	ey legislation. FME	A (Failure
Mode and Effects	Analysis), QFD (Quality Function Deployment), DFX (Design for Assamly, Manufacturying, Quality, Services) and other methods u Knowledge based systems of quality and reliability data collection	sed in industrial ap	plications.
	Operation Construction and Maintenance of Vehicles	K2	2
Methods of vehicle	oroduction Vehicle maintenance Vehicle diagnostics Maintenance and repair plans Engine maintenance and emission measureme	n∠ nt Transmission m	∠ nechanism
	General principles of engine diagnostics.		iconanioni.
616Y1RE	Control and Electronic Vehicle Systems	KZ	2
Elementary concep	ts of regulation. Tools for analytical solution, linear system description. Basic types of a regulator (PID), properties, advantages, disadva	ntages, function. C	onventional
and hybrid drive	control. Electric drive. Vehicle communication bus (CAN, LIN, FlexRay, ISObus, KWP2000 protocole etc.). Vehicle electronic control,	safety, communica	tion and
	comfort systems.		
616Y1SO	Strategy and innovation in mobility	KZ	2
Introduction to inr	novation, definition. Innovation strategy. Innovation life cycle and ecosystem, main sources and funding opportunities. Successful innovation	vation project, KPI	s, budget;
co-financing, evalua	ation. Sprint method and its use. Innovative business model - main patterns and examples, design, strategy, processes and outlook (I	business plan and	possibilities
040)(4)/T	of use). Creating an innovation strategy. Customer and value map, design and testing.	1/7	
616Y1V1	Development in Railroad Venicles	KZ	2
Railroad vehicles	s traction. Railroad venicle parametres regulation. Control and driving of railroad venicles. Importance in neavy duty and personal tran	isportation. Critical	situation
616V17C	Introduction into Applied Computer Craphics	K7	2
Computer graphics	division and applications with emphasis on transport, including development and research. Colours, colour perception, colour sche	mes models princ	inles of 2D
and 3D generatio	on, elementary algorithms for graphic data workout. Visualisation principles and tasks, technics, graphics and visualisation HW basics	s. Introduction to 2	D and 3D
Ū	graphics software.		
616Y1ZL	Vehicle Testing, Legislation and Construction	KZ	2
Vehicle costruction	n, aggregate computing, driving resistance, building and parameters of traction, constructional arrangement of personal cars, trucks,	buses, motorbikes,	legislation
	in the EU and in the world, creation of technical legislation, testing methods, vehicle tests, accelerated tests, mathematical modelling	in testing.	
617FID	Financing and investment in transport	Z,ZK	4
Sources of financin	g of transport infrastructure, the role of public administration in the financing and realization of investment in transport, the investmen	t project project cy	cle, subsidy
A	programs and their rules, competition, effectiveness and efficiency of spending public funds, evaluation systems of public projects and	d programs.	-
6171EDL	Iransport lechnology and Logistics	KZ	3
Basic terms in tran	sport technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and freight transport planning in pasanger and their aplication using the planning in pasanger and the planning in pasanger and the planning in	sport, organisation	of traffic in
			າເຫດແລ. ວ
017X31D	Project 1 DOS	2	2
017X32D		<u>∠</u>	۷
617X33D	Project 3 DUS	۷.	4
61/Y1EV	Public Sector Economy		2
Economic and final	icial meany of public sector, public projects a their economic efficiency assessment, way of alaboration, economic assessment of public projects a their economic efficiency assessment, way of alaboration of DDD projects a funding for	ic projects (CBA, Normal El Junda progr	am HDM 4
Car system of the ont, state budget, management of public projects a their economic enciency assessment, way of elaboration of PPP projects, funding from EU funds, program HDM-4.			
Logistics airline page	ssenger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial trans		≥ engers and
- <u> </u>	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	nd the resulting dif	ferences in
	the application of marketing.	·	-
617Y1OF	Personal Finance	KZ	2
Personal finance (budget, financing of basic living needs), debt (loans and credits, payment instruments, interest and fees, debt trap), financing of hous	ing (rent, mortgage	e, savings,
consumer loans, re	intancing), savings and investments (investment nonzon, return, risk, investment strategy), insurance (insurance types, suitability and a (retirement savings and insurance)	adequacy), securin	g the luture
617V1PM	Personnel Management	K7	2
Human source	es work group, man as personality planning, choice, evaluation and education of human sources, work adaptation, teamwork, inter	cultural communic;	∠ ation
617V1SK	Lirban and Regional Rail Transport Systems	k7	2
Factors affecting	transport demand, modal-split, distribution of passenger flows on public regional transport lines. Optimization of line management, line	ne networking. Cre	∠ ating and
evaluation of the	e timetable. Vehicle circulation creation. Optimizing driver shifts and arranging them in turnus. Effects of barrier-free and public transpo	ort preferences. Th	e role of
	marketing.		
617Y1SL	Sociology of Human Resources	KZ	2
Human resources a	ind their importance, work group as a special kind of social group, communication, personal management, modern management, hum	ہ an resources planr	ning, culture
	of the organization.		
617Y1ST	Titan Simulation	KZ	2
Titan is a manag	ement game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same produce	ct. Students set a p	price and
determine the quar	tity and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequences	of their decisions	by the form
	of financial corporate reports and they use this information for other business decisions.		
618DYKS	Dynamics of Structures and Systems	Z,ZK	3
Vibration of system	ns with multiple degrees of freedom. Natural modes and natural frequencies. Method of stiffness constants, method of elastic constart	its, other numerica	I methods.
Systems with contin	nuously distributed mass. Matrix form of equations of vibration. Finite element method in dynamics of structures. Solving vibrations by si	uperposition of nati	ural modes.
0401(10)(Subspace iteration methods. Introduction to nonlinear vibrations.		
618KIDY	Kinematics and Dynamics	Z,ZK	4
Friction. Motion alor	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 point in Method of Neutron Division by the point and the system of the point and the point and the point and the system of the point and the system of the point and the	and a system of m	nass points,
equation of motio	in. Method of Newton. D Alembert principle. Free and forced vibration with one degree of freedom. Viscous damping, impact theory, if	inoduction to the s	olution of
619MECK	Mochanica of Constructions	K7	2
	IVIECITATING OF CONTINUTIONS	م tem Finite differer	Ce method
Litergetic Solution C	or vand fundamentals of structural design. Characteristics of steel, design of steel structures. Introduction to mathematical theory of a	elasticity in 3D	ce methou.
619MTV	Matariale Science and Engineering	774	2
Basic course of mat	Inviate rials of end to a function of the second se	∠,∠r∖ re However the ms	J ain attention
is paid to metals as	the most important engineering explains meaning provides of classes of materials are presented, namely ceramics, polymers and com-	nosites Attention	is also naid
	to degradation processes in materials, to defectoscopy and to main mechanical tests.		lo aloo pala
618NUMM	Numerical Methods in Mechanics	K7	3
Basics of the mo	st used numerical methods in structural mechanics. Central difference method, finite element method, boundary element method. Tin	ne and spatial disc	retization
schemes. Finite el	ement method - derivation of the basic equations. Stiffness matrix, mass matrix, damping matrix at element level and structural level.	Methods for solvin	g systems
	of algebraic equations. Numerical integration.		
618PZP	Elasticity and Strength	Z,ZK	3
Tension and compre	ession. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam. Design of riveted, bolted	and welded joint of	of structure.
Analysis of defle	ction curve of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Beam on elastic fou	indation. Strength	analysis.
618SAT	Structural Analysis	Z,ZK	4
General system of	of forces in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determinate	beams and simpl	e girders.
Principle of virtual w	ork. Kinematic method for calculation of reactions of statically determinate systems. Determination of axial forces in truss constructions.	Cross-sectional cha	aracteristics
	of planar shapes. Fiber polygons and chains.		
618SPP	Seminary from Elasticity and Strength	Z	0
Excersise for pract	ice. Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam	 Analysis of deflet 	ction 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	se. 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 statically determinate systems. Determination of axial forces in truss construction - method of j	bints and method c	of sections.
040070	Geometry of cross sections. Plane fiber polygons.		0
618SID	Seminary from lechnical Documentation	<u>ک</u>	0
lecnnical standa	ros, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensiona	and geometrical a	accuracy,
	Technical Drawing sneets.	1/7	4
0101KK		<u></u>	4
618X31D	Project 1 DUS	<u> </u>	2
618X32D	Project 2 DOS	Z	2
618X33D	Project 3 DOS	Z	4
618Y1AM	Anatomy, Mobility and Safety of Man	KZ	2
Survey of tissues. A	natomical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circulation	and nervous syster	n. Structure
and biomechanics	ot muscular-skeletal system. Injury of human organs and musculo-skeletal system during traffic accidents. Mobility of ill and injured m	an and his treatme	ent. Human
	joint prostheses. Protective means and traffic safety regulations.		
_618Y1EM	Experimental Methods in Mechanics	KZ	2
The purpose and r	ore or experimental mechanics. Sensors for mechanical testing. Overview of experimental methods. Destructive and non-destructive to a service and sense to a service service and sense to a service servic	esting of materials	. Design of
experimental proc	ceutres and sample preparation. Tensile and bending tests. Electrical resistance strain gages. Optical based strain measurement. Fail	igue and lifetime p	ealction.
0401/4147	Instrumented hardness testing. Introduction to electron microscopy. Errors in measurement.	1/7	
Svetometic sver			Z
Systematic overvie	w or main prasses or materials used in reprinter design. In addition to main pracess is also demonstrated based on as called Ashbula	selection charte	uon is pala
	agical materials and to biominicates, integral approach to material selection process is also demonstrated based on so Called ASDby s	ออเออแอก อกสกร.	

618Y1PS	Computer Simulations in Mechanics	KZ	2	
Principles and o	verview of programs for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model dev	elopment and adap	otation of	
geometry from oth	er CAE systems. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary con	nditions and application	ation of the	
load. Basic tasks of structural and modal analysis. Introduction to complex nonlinear problems.				
618Y1UK	Introduction of Rail Vehicles	KZ	2	
Basic characterist	ics and parameters rail transport systems - railway and urban transport. Basis driving mechanics rail venicles - equation of motion tra	in and unit trains. I	Rolling and	
track resistance. To	and electric drive. Design concept rail vehicles and drive of wheel set	nyuromeename, ny	urouynamic	
620SYSA	Systems Analysis	7 7K	5	
Introduction to syst	em sciences, system viewpoint, terminology, typical system analysis tasks, system identification, system interface and interface tasks	, processes, syster	n behaviour	
and its analysis,	strong functions and processes, genetic code, system identity, system architecture. Tools for system analysis - Petri nets, decision tak	oles, algorithms for	structural	
	tasks. Soft and hard systems, methods for soft system analysis.			
620UITS	Introduction to Intelligent Transport Systems	Z,ZK	7	
Terminology and le	gislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamentals of infor	mation and telecon	nmunication	
systems for ITS. Pr	inciples and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real examples	of possible application	ations of the	
000/04 D	principles of 115.	-	0	
620X31D	Project 1 DOS	Ζ 7	2	
620X32D	Project 2 DOS	Ζ	2	
620X33D	Project 3 DOS	Ζ	4	
620Y1AE	Applied Electronics	KZ	2	
Basic electronic s	semiconductor components, their principles, characteristics and typical connection diagrams. Semiconductor PN junction diodes, tran	isistors, thyristor, o	perational	
ampliners, basic id	amplifier as an inverting and noninverting amplifier).	or as an ampliner, c	perational	
620Y1AF	Alternative Forms of Transportation Project Financing	K7	2	
In will be specifed s	such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt paym	nents come from its	budget but	
the final debtor is n	ot a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of sec	urities as an alterna	ative source	
	of transportation and telecomunication projects.			
620Y1EA	Environmental Aspects of Transport	KZ	2	
State of the atmosp	here, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilistic	forecasts, forecast	evaluation.	
Air quality, mair	pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transp	ortation in climate	change.	
620Y1EK	Qualification in Electrical Engineering	KZ	2	
Practical experienc	e with measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock hazard,	symbols and labeli	ng, nominal	
vollage, maximum	in relation to health and safety and electrical engineering	on, stanuarus anu	regulations	
620Y1KP	Communication and presentation skills	K7	2	
Motivation, prioritie	es and their fulfillment, current communication networks, work with various sources, formal requirements of emails and final theses, b	asic typology of pe	ersonalities,	
teamwork, emo	tional intelligence, manipulation and way of working with it, coping with stressful situations, formal requirements of presentations, way	/s of communicatio	n during	
	presentation, presentation skills, presentation skills in online environment.			
620Y1LN	Location and Navigation	KZ	2	
Description and e	examples of road networks, localization on the network. Routing algorithms, their properties and implementation. Description and exa	mples of datasets	for finding	
000)// 01	transport connections, routing algorithms, their properties and implementation.	1/7		
620Y10I	Fare Collection and Information Systems	for upore (timotob)	2	
rate collection sy	stens in public transport and their components (on-board units, validators, turnstiles,). Information systems and their components hels) and operators (cycles, location or current delay of vehicles). The issue of tariff systems. Other examples of clearance systems in the systems are sustained by the systems of the systems are systems and the systems are systems	ems (narking)	es, maps,	
620Y1OK	Road Lighting	K7	2	
Basic lighting quant	ities and terms, street lighting components (luminaires, control cabinets for street lighting, street lighting cables), characteristics of lumi	naires (lifetime of lig	zht sources.	
light distribution),	standards, measurement of illuminance and luminance in road lighting, tunnels, conceptual approach to street lighting design, lightin	g calculations in D	IALux and	
	Relux, street lighting control systems.			
620Y1PK	Product Quality Management Processes	KZ	2	
General principles	of organization management. Management systems and international standards; quality management systems. Quality products, pro	cesses, systems. A	framework	
of standards for sys	tems management, management principles. Principles of process management, monitoring and measurement systems management. U	Iniform framework of	of standards	
0001/400	tor systems management. Process management principles. Metrology and testing. Product certification.	1/7		
620Y1SC	Sensors and Actuators	KZ	2 no mognotio	
Filliciples of sellsor	s and actuators, basics of measuring meory and actuating innuerice. The respective technologies and construction principles. Sensors of state (temperature humidity), chemical and particle flow values. Electrical pneumatic and bydraulic actuators and solid phase electrical pre-	ements	o-magnetic,	
621SLD	Seminar of Air Transport	7	0	
History, definiti	ons, terminology, basic rules. VFR / IFR. Basics of aerodynamics. Propulsion of aircraft. Aircraft design. Basics of navigation, radio na	avigation. Weight, b	alance,	
performance. Flig	ht planning, optimization of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic ma	inagement, ground	handling,	
	security. Air crew. Airlines and economics. Space technologies.			
621X31D	Project 1 DOS	Z	2	
621X32D	Project 2 DOS	Z	2	
621X33D	Project 3 DOS	Z	4	
621Y1AM	Aeronautical Information Management (AIM)	KZ	2	
Definition and basi	c overview of AIS and AIM. Transition from AIS to AIM. Regulatory base. Provision of AIS/AIM in the Czech Rep. AIP (Aeronautical In	f. Publication). VFF	R Manual of	
the Czech Rep. A	IRAC System. NOTAM messages.PIB (Pre-flight Information Bulletin). AIC (Aeoronautical Inf. Circulars). Aeronautical Charts. EAD (Eu	Iropena AIS Datab	ase). QMS	
0041/450	(Quality Ming. System). ADQ (Aeronautical Data Quality). AIXM (Aeronautical Int. Exchnage Format).	1/7		
621Y185	UNMANNEG AIRCRAFT SYSTEMS 1	KZ	Z	
	procedures. Practical flights.	Stational HSAS allu	operational	
	L			

621V1L	Accorporational Padia and Elight Instruments	K 7	2	
Basic definitions bi	Activities and the second s	airframo instrumo		
Basic delimitions, misory or anchain instrumentation, aerometric instrumentation, and meneration and other alicraft outlineart, and in estrumentation, aerometric instrumentation, and meneration and other alicraft outlineart, and is estrumentation and recording putching approximate and incommunication and and incoming and recording putching approximate and incoming approxim				
	a equipment, engine instrumentation, warning and recording systems, instrumentation operational requirements, radiocommunicatio		011.	
	All Halli Selvices a Create Deputities and descriptions of ATS, write in Create Deputities, Prostingle symptons of TMD, ADD			
Airspace structure	in Czech Republic and outer countries, introduction and description of ATS units in Czech Republic, Practical examples of twick, APP		SIOLA OF ALS	
004)/4145	at USA and Czechoslovakia. ATS - widder of mirancing, maning System of Air frame Controllers, Puture development of At	».		
621Y1MP	Matiab for project-oriented study	KZ	2	
The subject's sylla	bus is rocused on the problem-solving during bachelors thesis preparation and it is based on students requests, individual exercises	will be prepared a	ccording to	
	tes, based on actual students needs and suggestions. The subject will have a lexible form, which is expected to bring an improvement		iad skills.	
621Y10H	Airline Business and Operations	KZ	2	
The course provide	s a comprehensive view of the commercial, operational and transportation activities of air transport companies. It focuses on the organiz	ational structure of	companies,	
various aspects of t	neir strategy, economic and operational indicators. It introduces students in detail to operational processes and the essentials of transp	ortation processes	s. It provides	
004)/4 DA		1/7	0	
02111PA	Air frainc control Operating Procedures		Z	
	on the ALC simulator with the following locus - getting laminar with the simulation environment, acquiring basic habits, and an team team	BEV monorage tre	, vectoring,	
lever changes, Arc	citediance, use of RNAA points. Fractical exercises focused on the basis of vectoring, timely application of vertical spacing, EST and Eversises in the APPOACH aircrase arrivals denartures and conflict conflict conflicts.	I KEV Message lia	115111551011.	
621V1PC	ATC Procedures and Activities	K 7	2	
Air traffic control r	ALC I location and horse and Activities and Activities	liscusses air traffic	∠ control at	
the airpor	ts and low visibility operational procedures. Students will during the course learn basic safety management applications applied acro	ss the infrastructur	e	
621V1PI	Onerational Aspects of Aerodromes	K7	2	
	te of aerodromes. Location of aerodrome and orientation of runways Requirements for anron Canacity of airports runways and term	inals Operation ur	der winter	
oporational appor	conditions. Firefighting units. Protection against unlawful interference. Local transport connection. Environmental protection			
621V1R7	Human Resources Management	K7	2	
The position of l	I normal resources in the organization and related discribings file. Substance, importance and challenges of human resources manage	ment Internal and		
environment of hun	an resource management. Human resource planning. Search, recruitment and selection of employees. Motivation, evaluation and ren	nuneration of staff.	Positioning.	
	dismissal and redundancies of employees. Education of employees. Planning career management.			
621Y1SI	ATC Simulator	KZ	2	
Familiarization v	vith the simulation environment, acquiring basic habits, aircraft identification procedures, vectoring, level changes, ATC clearance, us	e of RNAV points.	Practical	
exercises focusir	ig on basic vectoring, early application of vertical separation, EST and REV message passing. Practical exercises in the APPROACH	l area, practicing a	rrival and	
	departure management procedures, conflict resolution.			
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 and unio	ading units. Equip	ment for	
pa	ssangers onboarding and offboarding. Operational processes of aircraft technical handling and regulations. Modernization and techn	ical progress.		
621Y1UL	Aircraft Maintenance	KZ	2	
Aircraft operations	and technical operations. Maintenance and work processes. Defects search methods, status check diagnostic tools. Selection and qua	lification of aviation	n personnel.	
Basic documentat	ion for maintenance. Optimization of time maintenance intervals. Regulation no. 1321/2014 Part 145. Human factors of aircraft maintenance	enance. Regulation	of director	
	EASA for aircraft maintenance. Seminars will be focused on practical application.			
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, p	erformance.	
Flight planning, opt	imization of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic management, grou	nd handling, secur	ity. Air crew.	
	Airlines and economics. Space technologies.			
622DON	Traffic Accidents	Z,ZK	6	
Introduction to Roa	d Accidents and Forensic Expertise; Rail, Water and Air Accidents; Road Accident Documentation and Documentation Technology; A	ccident Data Reco	rders - EDR	
Systems; Road Acc	cident Trace Analysis and Fake Accidents; Simulation Programmes for Road Accident Analysis; Pedestrian and Cyclist Accidents; Veh	icle technologies a	nd systems	
and autonomous ve	enicles; Safe road layout and collision diagrams; Not giving right of way; lechnical detects of vehicles; Restraints - passive road safety	r; Accidents at leve	l crossings;	
	Prevention (traffic education, awareness, repression)			
622METD	Measurement Methods and Technology in Transportation	ZK	4	
Measurement me	ethods in transport, their meaning and use. Geodetic basics in Czechia. Angular, length and height measurements. Principles of map	ping, accuracy and	Content of	
provene measurements. Our reging and setting out. Onalienges of localization, navigation and Olobal Navigation Satellite Systems. Laser Scatting (terrestillar, mobile, UAV). Technical				
600/010	photography and photogrammetry. Dynamic measurements of venicies. Trigh-speed cameras.	7		
022A31D		<u> </u>	2	
622X32D	Project 2 DOS	<u> </u>	2	
622X33D	Project 3 DOS	Z	4	
TV-1	Physical Education	Z	1	
TV-2	Physical Education	Z	1	
TVKLV	Physical Education Course	Z	0	
TVKZV	Physical Education Course	Z	0	
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