Study plan

Name of study plan: PRE bak. studium oboru DOS roz azení v 17-18 - v 1.sem. si ZAPSALI 14DB.

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: 160

The role of the block: Z

Code of the group: 1S PRE 16-17 P

Name of the group: 1. sem. bak. PRE 16-17 povinné p edm ty (spol. ást studia)

Requirement credits in the group: In this group you have to gain 28 credits

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

Credits in the group: 28 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
611CAL1	Calculus 1 Romana Zibnerová	Z,ZK	7	2P+4C+22E	Z	Z
611LA	Linear Algebra Romana Zibnerová	Z,ZK	3	2P+1C+10E	Z	Z
612ZYDI	Introduction to Transportation Engineering Dagmar Ko árková	Z,ZK	2	1P+1C	z	Z
618MTY	Materials Science and Engineering Vít Malinovský	Z,ZK	3	2P+1C+10E	S Z	Z
620SYSA	Systems Analysis Petr Bureš, Ji í R ži ka	Z,ZK	5	2P+2C+14E	L L	Z
611GIE	Geometry Vít Malinovský	KZ	3	2P+2C+12E	Z	Z
618TED	Technical Documentation Vít Malinovský	KZ	2	1P+1C+8E	Z	Z
616UDOP	Introduction into Vehicles Zuzana Radová	Z	2	2P+0C+8E	Z	Z
TV-1	Physical Education	Z	1		Z	Z

Characteristics of the courses of this group of Study Plan: Code=1S PRE 16-17 P Name=1. sem. bak. PRE 16-17 povinné p edm ty (spol. ást studia)

611CAL1	Calculus 1	Z,ZK	7				
Sequence of real numbers and its limit. Basic properties of mappings. Function of one real variable, its limit and derivative. Geometric properties of n-dimensional Euklidean space							
Cartesian coordinate s	Cartesian coordinate system. Geometric meaning of the differential of functions several real variables, differential calculus of functions of several real variables.						
611LA	Linear Algebra	Z,ZK	3				
Vector spaces (linear of	ombinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and	their solvability. D	eterminants and				
their applications. Scal	ar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classification.						
612ZYDI	Introduction to Transportation Engineering	Z,ZK	2				
Role of transportation	n land-use planning. Basic terms in transportation engineering. Traffic survey and traffic prognosis. Introduction to topic of roac	s, public mass tra	insport. Negative				
impacts of transportati	impacts of transportation to environment and safety.						
618MTY	Materials Science and Engineering	Z,ZK	3				
Posio source of motori	ale aciones and angine aving avalains mach anical proportion of structural materials based on their banding forces and microstru		a main attantion				

Basic course of materials science and engineering explains mechanical properties of structural materials based on their bonding forces and microstructure. However the main attention is paid to metals as the most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and composites. Attention is also paid to degradation processes in materials, to defectoscopy and to main mechanical tests.

620SYSA	Systems Analysis	Z,ZK	5			
Introduction to system sciences, system viewpoint, terminology, typical system analysis tasks, system identification, system interface and interface tasks, processes, system behaviou						
and its analysis, strong	functions and processes, genetic code, system identity, system architecture. Tools for system analysis - Petri nets, decision t	ables, algorithms	for structural			
tasks. Soft and hard sys	stems, methods for soft system analysis.					
611GIE	Geometry	KZ	3			
Orthographic and obliqu	e projections, linear perspective. Topographic surfaces and their orthogonal projection. Differential geometry of curves - para	ameterization, arc	of the curve,			
torsion and curvature, F	renet's trihedron. Kinematics - a curve as a trajectory of the motion, the velocity and acceleration of a particle moving on a c	curved path.				
618TED	Technical Documentation	KZ	2			
Technical standards, int	ernational standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimension	nal and geometric	al accuracy,			
arrangement of drawing	sheets.					
616UDOP	Introduction into Vehicles	Z	2			
Vehicles and transporta	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 equi	pment and conveyors. Legislation.					
TV-1	Physical Education	Z	1			

Code of the group: 1S PRE 16-17 PV

Name of the group: 1. sem. bak. PRE 16-17 povinné p edm ty-výb r

Requirement credits in the group: In this group you have to gain 2 credits

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

Credits in the group: 2

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
614AS	Algorithm and Data Structures	KZ	2	0+2	Z	Z
614AZ	Data Analysis and Processing	KZ	2	0+2	Z	Z
614DB	Database Systems	KZ	2	0+2	Z	Z

Characteristics of the courses of this group of Study Plan: Code=1S PRE 16-17 PV Name=1. sem. bak. PRE 16-17 povinné p edm ty-výb r

614AS	Algorithm and Data Structures	KZ	2
Students will be familiar	rized with selected basic and derived data structures, algorithms, their properties and their design procedure. Students will ana	lyze problems, pro	pose theoretical
1			

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 conditions for the algorithms.

614AZ Data Analysis and Processing

Main aim of this course is learn students how to prepare raw data for following processing and analysis. Knowledge of algorithms for determining the parameters of different data sources; source can be used images, text, time series, etc. The next step is the theoretical skills and knowledge to apply in solving the problem, e. g. extraction parameters from the image data or from the Internet.

614DB

Database Systems K7 Dbf. terminology, fundamentals of relational and object database systems, database structure, relations modelling, relation algebra, dbf. tools, database design process, user interface,

remote data access. Basic statement of SQL language. Expert systems and knowledge based applications, knowledge representation, methods of derivating and implementating, interface for knowledge systems design, certainty and uncertainty in knowledge systems.

Code of the group: 2S PRE 16-17 P

Name of the group: 2. sem. bak. PRE 16-17 povinné p edm ty (spol. ást studia)

Requirement credits in the group: In this group you have to gain 28 credits

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

Credits in the group: 28

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
611CAL2	Calculus 2 Romana Zibnerová	Z,ZK	5	2P+3C+20E	B L	Z
611FY1	Physics 1	Z,ZK	4	2+2	L	Z
611STAS	Statistics	Z,ZK	5	2+2	L	Z
612ZTS	Railway Lines and Stations Tomáš Javo ík, Ond ej Trešl	Z,ZK	4	2P+2C+10E	B L	Z
618SAT	Structural Analysis Radim Dvo ák, Ján Kopa ka, Tomáš Doktor, Jan Šleichrt	Z,ZK	4	2P+2C+14E	B L	Z
617TEDL	Transport Technology and Logistics Michal Drábek	KZ	3	2P+1C	L	Z
621ZALD	Basics of Air Transport Jakub Hospodka	KZ	2	0P+2C+8E	B L	Z

TV-2	Physical Education	Z	1		L	Z
Charactoristic	cs of the courses of this group of Study Plan: Code=2S PR	PE 16-17 P Namo-2 son	hak DDE	16-17 pc	vinná n	odm tv
spol. ást stu	-	LE 10-17 F Maille=2. Sell	I. Dak. FRE	10-17 pc	viille þ	eum ty
611CAL2	Calculus 2			Z,	ZK	5
Antiderivative, Nev	wtonian integral, Riemannian integral of the function of one variable, improper R	tiemannian integral, Riemanniar	integral in Rn	. Parametric	description	of regular
k-dimensional surf	rfaces in Rn, Riemannian integral over regular surfaces. Line and surface integra	als of the second type, Stokes th	eorems, ordina	ary differentia	equations	of the first
order, linear differe	rential equations with constant coefficients and its systems.					
611FY1	Physics 1			Z,	ZK	4
Kinematics, particl	cle dynamics, dynamics of particle systems and rigid body. Continuum mechanic	s, thermodynamics, electric field	I, directed elec	tric current.	1	
611STAS	Statistics			7	71/	
0110170	Otatistics			<u>_</u> ,	ZK	5
	ability, random variable and its description, known distributions, random vector, fun	nction of random variable. Metho	ds of point estir	1 '		-
Definition of probal			•	nation.Testin	g of statistic	cal hypothes
Definition of probal Regression and co	ability, random variable and its description, known distributions, random vector, fun		•	nation.Testin	g of statistic	cal hypothesi
Definition of probal Regression and co	ability, random variable and its description, known distributions, random vector, fun orrelation, linear regression, correlation coefficient, coefficient of determination, th		•	nation. Testin	g of statistic	cal hypothesi
Definition of probal Regression and co multiple regression 612ZTS	ability, random variable and its description, known distributions, random vector, fur orrelation, linear regression, correlation coefficient, coefficient of determination, the on, the use of matrices in regression.	he general linear model, statistic	al inference in	nation. Testin linear regress Z,	g of statistic	cal hypothes sis of variance
Definition of probal Regression and co multiple regression 612ZTS Rail transport. Rail	ability, random variable and its description, known distributions, random vector, fur orrelation, linear regression, correlation coefficient, coefficient of determination, then, the use of matrices in regression. Railway Lines and Stations	he general linear model, statistic	al inference in	nation. Testin linear regress Z,	g of statistic	cal hypothes sis of variance
Definition of probal Regression and co multiple regression 612ZTS Rail transport. Rail	ability, random variable and its description, known distributions, random vector, fur orrelation, linear regression, correlation coefficient, coefficient of determination, the use of matrices in regression. Railway Lines and Stations ilway track geometry parameters. Route layout of railway lines. Railway line consystems in relation to infrastructure. Operating and carriage points. Railway lines in	he general linear model, statistic	al inference in	nation. Testin linear regress Z, ture. Spatial li	g of statistic	cal hypothes sis of variand
Definition of probal Regression and co multiple regression 612ZTS Rail transport. Rail Railway control sy: 618SAT	ability, random variable and its description, known distributions, random vector, fur orrelation, linear regression, correlation coefficient, coefficient of determination, the use of matrices in regression. Railway Lines and Stations ilway track geometry parameters. Route layout of railway lines. Railway line cons	he general linear model, statistic struction - railway substructure a net and category. Traction in rail	al inference in nd superstruct transport.	nation. Testin linear regress Z, ture. Spatial li	g of statistic gion, analys ZK ayout of rail	cal hypothesis of variance 4 Ilway lines.
Definition of probal Regression and co multiple regression 612ZTS Rail transport. Rail Railway control sy: 618SAT General system of	ability, random variable and its description, known distributions, random vector, fur orrelation, linear regression, correlation coefficient, coefficient of determination, the use of matrices in regression. Railway Lines and Stations ilway track geometry parameters. Route layout of railway lines. Railway line consystems in relation to infrastructure. Operating and carriage points. Railway lines in Structural Analysis	he general linear model, statistic struction - railway substructure a net and category. Traction in rail	al inference in nd superstruct transport.	nation. Testin linear regress Z, ture. Spatial la Z, minate beam	g of statistics	cal hypothes sis of variance 4 lway lines. 4 lle girders.
Definition of probal Regression and co multiple regression 612ZTS Rail transport. Rail Railway control sy: 618SAT General system of Principle of virtual of	ability, random variable and its description, known distributions, random vector, fur orrelation, linear regression, correlation coefficient, coefficient of determination, the use of matrices in regression. Railway Lines and Stations ilway track geometry parameters. Route layout of railway lines. Railway line consystems in relation to infrastructure. Operating and carriage points. Railway lines in Structural Analysis of forces in plane and space. Calculation of reactions of bodies and structures. As	he general linear model, statistic struction - railway substructure a net and category. Traction in rail	al inference in nd superstruct transport.	nation. Testin linear regress Z, ture. Spatial la Z, minate beam	g of statistics	cal hypothes sis of variance 4 lway lines. 4 lle girders.
Definition of probal Regression and co multiple regression 612ZTS Rail transport. Rail Railway control sy: 618SAT General system of Principle of virtual of	ability, random variable and its description, known distributions, random vector, fur orrelation, linear regression, correlation coefficient, coefficient of determination, the use of matrices in regression. Railway Lines and Stations ilway track geometry parameters. Route layout of railway lines. Railway line consystems in relation to infrastructure. Operating and carriage points. Railway lines in Structural Analysis of forces in plane and space. Calculation of reactions of bodies and structures. As I work. Kinematic method for calculation of reactions of statically determinate systems.	he general linear model, statistic struction - railway substructure a net and category. Traction in rail	al inference in nd superstruct transport.	mation. Testin linear regress Z, ture. Spatial li Z, minate beam uctions. Cross	g of statistics	cal hypothes sis of variance 4 lway lines. 4 lle girders.

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.

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.

ΚZ

Code of the group: 2S PRE 16-17 PV

Basics of Air Transport

Physical Education

Name of the group: 2. sem. bak. PRE 16-17 povinné p edm ty-výb r

Requirement credits in the group: In this group you have to gain 2 credits

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

Credits in the group: 2 Note on the group:

Airlines and economics. Space technologies.

621ZALD

TV-2

Tiole on the g						
Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
614KSP	Constructing with Computer Aid Libor Žídek	KZ	2	0P+2C+8B	Z	Z
614PRG	Programming	KZ	2	0P+2C+8B	L	Z

Characteristics of the courses of this group of Study Plan: Code=2S PRE 16-17 PV Name=2. sem. bak. PRE 16-17 povinné p edm ty-výb r

614KSP	Constructing with Computer Aid	KZ	2					
"CAD systems" term determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic common work rules in graphic application.								
and CA systems. Co-c	and CA systems. Co-ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting possibilites, AutoCAD environment							
profiles, drawings with	raster foundaments).							
614PRG	Programming	KZ	2					
Algorithm developmen	Algorithm development, methods of structured programming, high-level programming languages, basics of C programming languages (types, variables, conditions, cycles, arrays,							

Code of the group: 3S PRE 17-18 P DB

Name of the group: 3. sem. bak. PRE 17-18 povinné p edm ty (S S) (bez Fyziky; v 1.sem. si ZAPSALI 14DB)

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

functions), programming techniques, complexity.

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
615DPLG	Transportation Psychology Jana Štikarová	Z	2	2P+0C+6B	Z	Z

623BDIS	Safety Technologies of Transportation and Information Systems	KZ	3	2+0	Z	Z
612MDE	Transport Models and Transport Excesses Aneta Matysková, Josef Kocourek, Tomáš Pad lek	Z,ZK	3	2P+1C+8B	Z	Z
617TGA	Graph Theory and its Applications in Transport Josef Volek	Z,ZK	4	2P+2C+12B	Z	Z
618PZP	Elasticity and Strength Tomáš Doktor, Jan Šleichrt, Petr Koudelka	Z,ZK	3	2P+1C+10B	Z	Z
620UITS	Introduction to Intelligent Transport Systems Vladimír Faltus	Z,ZK	7	3P+2C+20B	Z	Z
612PPOK	Designing Roads, Highways and Motorways Ji í arský, Petr Kumpošt, Vojt ch Niž anský	KZ	3	1P+2C+10B	Z	Z
614AS	Algorithm and Data Structures	KZ	2	0+2	Z	Z
615JZ1A	Foreign Language - English 1 V ra Pastorková	Z	3	0P+4C+10B	Z	Z

Characteristics of the courses of this group of Study Plan: Code=3S PRE 17-18 P DB Name=3. sem. bak. PRE 17-18 povinné p edm ty (S S) (bez Fyziky: v 1.sem. si ZAPSALI 14DB)

614AS	Algorithm and Data Structures	KZ	2
Students will be fa	miliarized with selected basic and derived data structures, algorithms, their properties and their design procedure. Students v	vill analyze problems, pro	pose theoretica
solutions to the se	t task and the resulting algorithm write by means of flowcharts, practice in reading algorithms recorded by means of the flow	wchart and use the basic	s of Boolean
algebra with formi	ng the conditions for the algorithms.		
615DPLG	Transportation Psychology	Z	2
Subject of psychol	ogy and its basic concepts. Information intake, decision-making and behaviour. Performance. Engineering psychology and ve	hicle construction. Psych	ological aspects
of travel route and	traffic conditions, accidents and traffic incidents. Selection and training of the staff. Work and leisure. Age as a factor in transcription of the staff.	sport operation.	
623BDIS	Safety Technologies of Transportation and Information Systems	KZ	3
Safety of transport	tation means - principles, testing, evaluation. Safety of infrastructures, critical structures, crisis scenarios. Safety of informat	ion systems and their rob	oustness.
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. The	neory of queues, shock w	aves. Quality of
ransport and its a	ssessment. Statistical characteristics of transport. Transport excesses, their analysis, the causes, identify and minimize the	consequences. Improvin	g of transport
safety and fluency			
617TGA	Graph Theory and its Applications in Transport	Z,ZK	4
Basic terms of gra	ph theory, paths in graphs, flows in networks, location problems, design problems on graphs, optimum routing, use of graph	ns in other scientific disci	plines.
618PZP	Elasticity and Strength	Z,ZK	3
Tension and comp	ression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam. Design of riv	eted, bolted and welded j	oint of structure
Analysis of deflect	ion curve of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Beam on ela	astic foundation. Strength	n analysis.
620UITS	Introduction to Intelligent Transport Systems	Z,ZK	7
Terminology and le	egislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundament	tals of information and tel	ecommunication
systems for ITS. P	rinciples and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real	l examples of possible ap	plications of the
principles of ITS.			
612PPOK	Designing Roads, Highways and Motorways	KZ	3
Definition, types, o	ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and	standard speed. Route i	n rural areas.
Range of vision fo	r stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of ro	oads. Safety device. Cros	sings, junctions
intersections.			
615JZ1A	Foreign Language - English 1	Z	3
Grammatical struc	tures and style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing percept	tive and communicative s	kills. Elementar
stylistics forms. Or	al and written presentation of original research. Academic text principles and reading comprehension. Principles of rhetoric	:	

Code of the group: 4S P DOS 17-18 P

Name of the group: 4. sem. PREZ bak. DOS 17-18 povinné p edm ty

Foreign Language - English 2

Requirement credits in the group: In this group you have to gain 20 credits

Requirement courses in the group: In this group you have to complete 5 courses

Credits in the group: 20 Note on the group:

615JZ2A

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.) **Modeling of Systems and Processes** 611MSP Z.ZK 2P+2C+12B L z **Highways, Motorways and Intersections** 612SDK Z,ZK 2P+2C Z Ji í arský **Kinematics and Dynamics** 618KAD Z,ZK 4 2P+1C Z Vít Malinovský Vehicle Technology **616DPY** ΚZ 5 2P+2C L Ζ

Z,ZK

3

0P+4C+10B

Characteristics of the courses of this group of Study Plan: Code=4S P DOS 17-18 P Name=4. sem. PREZ bak. DOS 17-18 povinné p edm ty

611MSP | Modeling of Systems and Processes | Z,ZK | 4 |
System and subsystem, external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of differential and differential equations.
Linear and nonlinear system, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer function. Stability of LTI systems.
Discretization of continuous systems. System interconnection.

Discretization of continuous systems. System interconnection.

612SDK Highways, Motorways and Intersections

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.

Motion along a line, motion along a curve. Kinematics of rigid plane, kinematics of rigid body. Point mass kinematics, system of point masses. Point mass dynamics and system of point masses, equation of motion. Method of Newton. Princle of D'Alembert. Free and forced vibration with one degree of freedom. Viscous damping. Impact theory. Introduction to the solution of vibration with multiple degrees of freedom.

616DPY Vehicle Technology

Technical nomenclature in transportation technology, Vehicle in legislation, Design, Operation, Influence on environment, Vehicle and ecology, Traction engine characteristics -

combustion engines, electric engines, change of energy principles. Powertrain construction. Power transmission.

615JZ2A Foreign Language - English 2 Z,ZK 3

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

Code of the group: 4S P DOS 17-18 PV1

Kinematics and Dynamics

Name of the group: 4. sem. bak. PRE DOS 17-18 povinné p edm ty-1.výb r 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:

618KAD

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
611OPE	Optics and Electromagnetic Field	Z,ZK	4	2+2	L	Z
612DOPS	Traffic Surveys and Simulations	Z,ZK	4	2P+2C	L	Z

Characteristics of the courses of this group of Study Plan: Code=4S P DOS 17-18 PV1 Name=4. sem. bak. PRE DOS 17-18 povinné p edm tv-1.vvb r

p cann ty mys								
611OPE	Optics and Electromagnetic Field	Z,ZK	4					
Electric field. Electric co	urrent. Magnetic field. Electromagnetic field. Optics. Basics of solid-state physics.							
612DOPS	Traffic Surveys and Simulations	Z,ZK	4					
Theory of traffic flow. M	Theory of traffic flow. Methods of monitoring - profile, spatially time. Automatic traffic counts. Security parameters - accidents, near-misses. Surveys in public transport. Overview of							

Theory of traffic flow. Methods of monitoring - profile, spatially time. Automatic traffic counts. Security parameters - accidents, near-misses. Surveys in public transport. Overview of traffic microsimulation models. Getting to know the working environment applications. Explanation of movement of vehicles in the traffic system. Creating and simulation of microscopic traffic model. Evaluation of the output characteristics. 4D visualization model.

Code of the group: 4S P DOS 17-18 PV2

Name of the group: 4. sem. bak. PRE DOS 17-18 povinné p edm ty-2.výb r

Requirement credits in the group: In this group you have to gain 2 credits

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

Credits in the group: 2 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
611MDS	Collection and Processing of Traffic Data Petr Bureš	KZ	2	2P+0C	L	Z
618TK	Theory of Structures Vit Malinovský	KZ	2	2P+0C	L	Z

Characteristics of the courses of this group of Study Plan: Code=4S P DOS 17-18 PV2 Name=4. sem. bak. PRE DOS 17-18 povinné p edm ty-2.výb r

611MDS	Collection and Processing of Traffic Data	KZ	2
Basic principles of traff	onal applications.		
618TK	Theory of Structures	KZ	2
Deformation in plans of	visioning of virtual work. Force (flevibility) method. Anlication of force method to from a analysis. Displacement (stiffness) method	d Cimplified and	

Deformation in plane, principle of virtual work. Force (flexibility) method. Aplication of force method to frame analysis. Displacement (stiffness) method. Simplified and general stiffness method. Mathematical foundations of elasticity. Static analysis of complex statically indeterminate structure. Energy methods for beam analysis. Lagrange variational principle. Winkler model of elastic foundation. Pasternak model of elastic foundation.

Code of the group: 4S P DOS 17-18 PV3

Name of the group: 4. sem. bak. PRE DOS 17-18 povinné p edm ty-3.výb r Requirement credits in the group: In this group you have to gain 2 credits Requirement courses in the group: In this group you have to complete 1 course

Credits in the group: 2 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
614PPD	Computer Aid of Transportation Projecting Drahomír Schmidt	KZ	2	0P+2C	L	Z
618POM	Advanced Materials Vit. Malinovský	KZ	2	0P+2C	L	Z

Characteristics of the courses of this group of Study Plan: Code=4S P DOS 17-18 PV3 Name=4. sem. bak. PRE DOS 17-18 povinné p edm ty-3.výb r

614PPD Computer Aid of Transportation Projecting ΚZ Overview of CAx application for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, data exchange). Advanced blocks modification (attributes, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transition curve, cross-and longitudinal section). Basics of 3D modelling

Advanced Materials

The knowledge gained in primary materials course is further developed. In greater physical detail it explains dynamics of strcture defects, phase diagrams of binary systems and other concepts. Special processes of structure control are discussed. The gained knowledge is utilized on description of contemporary technologies of material production for key industrial applications.

Code of the group: 5S P DOS 18-19 P

Name of the group: 5. sem. bak. PRE DOS 18-19 povinné p edm ty

Requirement credits in the group: In this group you have to gain 18 credits

Requirement courses in the group: In this group you have to complete 5 courses

Credits in the group: 18 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
612MKOD	City Rail Transport Ond ej Trešl	Z,ZK	5	2P+1C	Z	Z
612ZELP	Railway Operation Tomáš Javo ik	Z,ZK	4	2P+2C	Z	Z
616DYJ	Vehicle Dynamics Josef Mík	Z,ZK	3	2P+1C	Z	Z
622PRES	Road Traffic Accidents Prevention Michal Frydrýn, Luboš Nouzovský, Jakub Nová ek	KZ	4	2P+1C	Z	Z
622UAN	Road Traffic Accidents Analysis Introduction Michal Frydrýn, Luboš Nouzovský, Jakub Nová ek	KZ	2	1P+2C	Z	Z

Characteristics of the courses of this group of Study Plan: Code=5S P DOS 18-19 P Name=5. sem. bak. PRE DOS 18-19 povinné p edm ty

612MKOD City Rail Transport City and suburban rail transport. Tram lines layout and city roads. Tram track geometry parameters. Tram track superstructure. Turnouts and other construction of tram lines. Tram

stops and turn space. Underground and its basic characteristics. Underground nets in the world and undeground history in Prague. Underground track geometry parameters. Underground track superstructure and substructure. Underground stations. Suburban rail transport. Railway Operation

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.

616DYJ Vehicle Dynamics Z,ZK 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.

622PRES ΚZ Road Traffic Accidents Prevention

Basic relation causes - prevention, collision diagrams, causes of not giving way, initial speed and breaking influence on speed of impact, downhill grade, load transport and fixation, collisions with pedestrians, cyclists and motorcyclists, construction of vehicle breaks, winter conditions, inconvenient road parameters, visibility, anti-slide properties of road surface, solid barriers, assist systems, technical fault of vehicles.

622UAN Road Traffic Accidents Analysis Introduction ΚZ

Important parameters of road infrastructure, typical vehicle dimensions, distance-time diagram, response time components, backward projection of accidental process, vehicle body post-crash deformation, impact influence on passengers, video documentation, problem who was the driver, documentation, marks analysis, limits of accidental analysis, cornering, critical maneuvring, technical view hindrances, visibility and discriminability, nightfall.

Code of the group: 5S P DOS 18-19 PV

Name of the group: 5. sem. PRE DOS 18-19 povinné p edm ty - výb r 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
612APE	Applied Ecology Kristýna Neubergová	Z	3	2P+0C	Z	Z
612VERD	Public Transport in Cities and Regions	Z	3	2P+0C	Z	Z

Characteristics of the courses of this group of Study Plan: Code=5S P DOS 18-19 PV Name=5. sem. PRE DOS 18-19 povinné p edm ty výb r

612APE Applied Ecology Basic ecological principles. The atmosphere, air pollution from transport, smog, traffic share of greenhouse gas emissions. Transport within the different components of the environment. Nature and landscape protection, conflict of highway construction and protected areas NATURA 2000. The current ecological problems of the present. Rating losses from transport, especially in the context of traffic on the roads and delay construction of transport. Public Transport in Cities and Regions Public transport network design including determination of walking distances, characteristics of usable kind of transport, dimensioning transport capacity of lines, formation of lines,

Code of the group: 6S P DOS 18-19 P

Name of the group: 6. sem. PRE DOS 18-19 povinné p edm ty

operational parametres of lines, objective way of quality evaluation of transport measures design.

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 3 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
612PPMK	Urban Road Traffic and Design Josef Kocourek, Tomáš Pad lek	Z,ZK	4	2P+2C	L	Z
617GEDS	Geography of Transport Systems Milan K íž	KZ	2	2P+0C+8B	L	Z
622MEMT	Measurement Methods and Technology in Transportation Drahomír Schmidt, Michal Frydrýn, Luboš Nouzovský	KZ	4	2P+2C	L	Z

Characteristics of the courses of this group of Study Plan: Code=6S P DOS 18-19 P Name=6. sem. PRE DOS 18-19 povinné p edm ty Urban Poad Traffic and Docid

012PPIVIK	Orban Road traffic and Design	Z,ZN	4						
Composition of urban	Composition of urban road, elements and routes for traffic, pedestrian and cycling transport, projection of intersections, roundabouts, calming of traffic, parking, precaution for blind								
& partially-sighted	& amp; partially-sighted, induction of traffic, organization and regulation of transport.								
617GEDS	617GEDS Geography of Transport Systems KZ 2								
Regional differentiation	of the transport system. Sociogeographic regionalization and its relation to transport. Transport and local and regional develo	pment. Spatial in	teraction -						
theoretical and method	theoretical and methodological framework. Mobility research - travel behavior, mode choice and the influence onto "modal-split." Modal competition. Practical use of transport-geographical								
analysis in transportat	analysis in transportation planning.								
COCKATAT	NA CRACLE IT I I TO TO CO	1/7	4						

| Measurement Methods and Technology in Transportation

Measurement methods in transport, their meaning and use; Geodetic basics in the Czech Republic; 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 photogrammetry; Dynamic measurements of vehicles; High-speed cameras;

Code of the group: 6S P DOS 18-19 PV1

Name of the group: 6. sem. PRE bak. DOS 18-19 povinné p edm ty-výb r-1 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
612OMHD	Public Transport Operation Jan Kruntorád	Z,ZK	4	2P+2C	L	Z

618DKS	Dynamics of Structures and Systems Ond ei Jiroušek	Z,ZK	4	2P+2C	L	Z
	Ond ej dirousek					

Characteristics of the courses of this group of Study Plan: Code=6S P DOS 18-19 PV1 Name=6. sem. PRE bak. DOS 18-19 povinné p edm ty-výb r-1

612OMHD Public Transport Operation Z,ZK 4
Project of public transport organisation, project of city public transport network, transportation survey, project of transport parameters, transport graph, route and stops of line, public transport priority, financing of public transport, quality of public transport.

618DKS Dynamics of Structures and Systems

Z,ZK

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

Code of the group: 6S P DOS 18-19 PV2

Name of the group: 6. sem. PRE bak. DOS 18-19 povinné p edm ty-výb r-2 Requirement credits in the group: In this group you have to gain 4 credits

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

Credits in the group: 4 Note on the group:

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

Characteristics of the courses of this group of Study Plan: Code=6S P DOS 18-19 PV2 Name=6. sem. PRE bak. DOS 18-19 povinné p edm ty-výb r-2

616PAV Passive Safety
Road accident evaluation. Testing and legislation. Crash tests. Carbody properties. Injury mechanics. Restrain systems. Airbags. Road user safety. Mathematic modelling. Post collision safety systems.

617SFID Public Administration and Financing in Transport

Basic issues of transport and transport policy in the social context, environmental issues in transport, economical aspects of transport, public administration and financing of transport.

Code of the group: 6S P DOS 18-19 PV3

Name of the group: 6. sem. PRE bak. DOS 18-19 povinné p edm ty-výb r-3 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 Jana Kumpoštová	Z	3	2P+0C+8B	L	Z
618NMM	Numerical Methods in Mechanics Ond ej Jiroušek	Z	3	2P+0C	L	Z

Characteristics of the courses of this group of Study Plan: Code=6S P DOS 18-19 PV3 Name=6. sem. PRE bak. DOS 18-19 povinné p edm ty-výb r-3

| 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. | Z | 3 | 3 | |

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

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

The role of the block: ZP

Code of the group: PROJ 17-18

Name of the group: projekty 17-18 (4., 5., 6. sem.)

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

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

Credits in the group: 6

Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
615X31	Project 1	Z	2	0P+1C	L	ZP
620X31	Project 1	Z	2	0P+1C	L	ZP
612X31	Project 1 Dagmar Ko árková, Tomáš Javo ík, Josef Kocourek, Ji í arský, Kristýna Neubergová	Z	2	0P+1C	L	ZP
622X31	Project 1	Z	2	0P+1C	L	ZP
617X31	Project 1	Z	2	0P+1C	L	ZP
616X31	Project 1	Z	2	0P+1C	L	ZP
617X32	Project 2	Z	2	0P+2C	Z	ZP
612X32	Project 2 Dagmar Ko árková, Tomáš Javo ík, Josef Kocourek, Ji í arský, Petr Kumpošt, David Hudec, Roman Dostál, Andreas Papadopulos, Zuzana arská,	Z	2	0P+2C	Z	ZP
622X32	Project 2	Z	2	0P+2C	Z	ZP
620X32	Project 2	Z	2	0P+2C	Z	ZP
615X32	Project 2	Z	2	0P+2C	Z	ZP
616X32	Project 2	Z	2	0P+2C	Z	ZP
616X33	Project 3	Z	2	0P+1C	L	ZP
620X33	Project 3	Z	2	0P+1C	L	ZP
615X33	Project 3	Z	2	0P+1C	L	ZP
612X33	Project 3 Dagmar Ko árková, Tomáš Javo ík, Josef Kocourek, Ji í arský, Kristýna Neubergová	Z	2	0P+1C	L	ZP
622X33	Project 3	Z	2	0P+1C	L	ZP
617X33	Project 3	Z	2	0P+1C	L	ZP

Characteristics of the courses of this group of Study Plan: Code=PROJ 17-18 Name=projekty 17-18 (4., 5., 6. sem.)

615X31	Project 1	Z	2
620X31	Project 1	Z	2
612X31	Project 1	Z	2
622X31	Project 1	Z	2
617X31	Project 1	Z	2
616X31	Project 1	Z	2
617X32	Project 2	Z	2
612X32	Project 2	Z	2
622X32	Project 2	Z	2
620X32	Project 2	Z	2
615X32	Project 2	Z	2
616X32	Project 2	Z	2
616X33	Project 3	Z	2
620X33	Project 3	Z	2
615X33	Project 3	Z	2
612X33	Project 3	Z	2
622X33	Project 3	Z	2
617X33	Project 3	Z	2

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: PVP PRE DOS 18-19

Name of the group: 4x PVP pro bak. PREZ od 18-19: DOS (2x PVP v 5.sem., 2x PVP v 6.sem.)

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
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
620Y1AE	Applied Electronics	KZ	2	2P+0C	Z	PV
614Y1BE	Barrierless Transport	KZ	2	2P+0C	L	PV
621Y1BC	Aviation safety and security	KZ	2	2P+0C	L	PV
615Y1BO	Work Safety and Health Protection in Transportation	KZ	2	2P+0C	L	PV
621Y1BS	Unmanned aircraft systems 1	KZ	2	2P+0C	L	PV
614Y1BM	Biometric Methods	KZ	2	2P+0C	Z	PV
623Y1DZ	Data and Their Processing for Engineering Fields Needs	KZ	2	2P+0C	Z	PV
615Y1DZ	History of Railway	KZ	2	2P+0C	L	PV
612Y1DS	Project Documentation in Practice	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
621Y1FN	Factors Affecting the Rate of Accidents in Aviation	KZ	2	2+0	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 Adam Orlický	KZ	2	2P+0C	L	PV
612Y1KN	Combined Transportation	KZ	2	2P+0C	Z	PV
623Y1KO	Quantum Physics and Optoelectronics	KZ	2	2P+0C	L	PV
621Y1LA	Aerobatics	KZ	2	2+0	L	PV
621Y1LR	Radio Technology in Aviation	KZ	2	2+0	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
621Y1MZ	Managerial Ethics	KZ	2	2+0	Z	PV
617Y1MD	Marketing in Transportation Alexandra Dvo á ková	KZ	2	2P+0C	Z	PV
611Y1MM	Mathematical Models in Economy	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
615Y1NE	German in the Economy and Society	KZ	2	2P+0C	Z	PV
623Y1OK	Protection of Critical Objects and Infrastructures	KZ	2	2P+0C	L	PV
620Y1OI	Fare Collection and Information Systems	KZ	2	2P+0C	L	PV
614Y1OP	Operating System	KZ	2	2P+0C	Z	PV
617Y1OF	Personal Finance Alexandra Dvo á ková	KZ	2	2P+0C	Z	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 Jan Mejst ik	KZ	2	2P+0C	Z	PV
612Y1PD	Assessment of Transport Kristýna Neubergová	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
612Y1PU	Organization Disposition of Railway Stations	KZ	2	2P+0C	L	PV
616Y1RE	Control and Electronic Vehicle Systems	KZ	2	2P+0C	Z	PV
621Y1RZ	Human Resources Management	KZ	2	2P+0C	L	PV
617Y1ST	Titan Simulation Alexandra Dvo á ková	KZ	2	2P+0C	L	PV
620Y1SC	Sensors and Actuators	KZ	2	2P+0C	L	PV
617Y1SL	Sociology of Human Resources Stanislava Holiková	KZ	2	2P+0C	Z	PV
611Y1SI	Transportation Software Engineering	KZ	2	2P+0C	Z	PV
622Y1SZ	Forensic Expertise	KZ	2	2+0	L	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
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
621Y1UT	Airports Maintenance	KZ	2	2+0	L	PV
614Y1UP	Editing of Theses in MS Word Jan Mejst ik	KZ	2	2P+0C	L	PV
618Y1UK	Introduction of Rail Vehicles	KZ	2	2P+0C	L	PV
612Y1VC	Waterways and Shipping	KZ	2	2P+0C	Z	PV
623Y1VS	Negotiation and Cooperation	KZ	2	2P+0C	Z	PV
614Y1VM	Development of Applications for Mobile Devices	KZ	2	2P+0C	Z	PV
616Y1VT	Development in Railroad Vehicles	KZ	2	2P+0C	L	PV
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
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=PVP PRE DOS 18-19 Name=4x PVP pro bak. PREZ od 18-19: DOS (2x PVP v 5.sem., 2x PVP v 6.sem.)

620Y1AF Alternative Forms of Transportation Project Financing

KZ 2

620Y1AF	Alternative Forms of Transportation Project Financing	KΖ	2
In will be specifed such	forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt pa	ayments come fro	m its budget but
the final debtor is not a	firect participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of	securities as an al	ternative source
of transportation and tel	ecomunication projects.		
618Y1AM	Anatomy, Mobility and Safety of Man	KZ	2
Survey of tissues. Anato	mical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circulat	ion and nervous s	ystem. Structure
and biomechanics of mu	ıscular-skeletal system. Injury of human organs and musculo-skeletal system during traffic accidents. Mobility of ill and injure	ed man and his tre	atment. Human
joint prostheses. Protect	ive means and traffic safety regulations.		
614Y1AV	Animation and Visualization	K7	2

Advanced modifications and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and Space Warp objects. Atmospheric and other effects, rendering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animation using Inverse Kinematics.

620Y1AE		1.77	_
	Applied Electronics	KZ	2
	nductor components, their principles, characteristics and typical connection diagrams. Semiconductor PN junction diodes, tra	· ·	-
	ates. Functions of basic electronic circuits and methods for their designs (rectifiers, voltage regulator with Zener diode, transi	istor as an amplific	er, operational
	and noninverting amplifier).	1/7	
614Y1BE	Barrierless Transport	KZ	2
	accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Stude Introads, railway stations, public transport stops, terminal buildings, vehicles, public transport, information and orientation syste	•	ŭ
	will be supplemented by practical examples.	erris ariu transporte	ation technology.
621Y1BC	Aviation safety and security	KZ	2
-	curity development in aviation. Modern tools for safety and security management. Research and development of safe and se	1 1	2
		KZ	2
615Y1BO	Work Safety and Health Protection in Transportation, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation	1	
•	e and foreign business trips, statistics, working practice.	i. i lealiii protectioi	i programmes,
621Y1BS	Unmanned aircraft systems 1	KZ	2
-	relopment. Aircraft design. Legislation in force in the Czech Republic. Planning and execution of the flight. Airspace division.	1 1	
procedures. Practical fli		Operational risks t	and operational
614Y1BM	Biometric Methods	KZ	2
	authentication methods, principles and performance measurement of biometric systems, overview of biometric technologies,		
	od, 2D and 3D face recognition, vein patterns on the wrist, ear biometrics, fingerprint recognition, skin spectroscopy, behavio		_
_	s, safety and risks of biometric technologies.		
623Y1DZ	Data and Their Processing for Engineering Fields Needs	KZ	2
	erms, data collection, data sets, data random uncertainty and data epistemic uncertainty, data processing, hazard, risk, value		_
	rd determination and risk determination, methods for variants' creation, decision support systems.	, ,	, . ,
615Y1DZ	History of Railway	KZ	2
	team railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Re	1 1	
	levelopment in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train conn	-	
	by junctions. Excursions and projections.	,	,
612Y1DS	Project Documentation in Practice	KZ	2
	creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process		
creation of some project		p	9
620Y1EK	Qualification in Electrical Engineering	KZ	2
	h measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock haza	1	· -
•	red currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legisl	=	-
-	safety and electrical engineering.	,	3
616Y1EN	Energy Requirements of Vehicles	KZ	2
	ng inertial of the vehicles. Types of energy - kinetic, static, heat, chemical and others. Ways of energy change into kinetic ene	1	ngine, electric
-	engine. Energy accumulation means, accumulator, flywheel, fuel cell. Energy recuperation. WTW analysis.	0,	,
620Y1EA	Environmental Aspects of Transport	KZ	2
State of the atmosphere	e, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabili	1	· -
•	e, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilints and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transp	istic forecasts, fore	ecast evaluation.
Air quality, main pollutar	nts and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transp	istic forecasts, fore	ecast evaluation. change.
Air quality, main pollutar	nts and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transp European Integration within Historical Context	istic forecasts, fore portation in climate	ecast evaluation. change.
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Personal finance (budget, financing of basic living needs), debt (loans and credits, payment instruments, interest and fees, debt trap), financing of housing (rent, mortgage, savings, consumer loans, refinancing), savings and investments (investment horizon, return, risk, investment strategy), insurance (insurance types, suitability and adequacy), securing the future (retirement savings and investments (investment horizon, return, risk, investment strategy), insurance (insurance types, suitability and adequacy), securing the future (retirement savings and investments). 611Y1PV Parametrical and Multicriterial Programming KZ 2 Solution to the problem of linear programming 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 Human sources, work group, man as personality, planning, choice, evaluation and education of human sources, work adaptation, teamwork, intercultural communication. 612Y1PC Pedestrian and Cycling Transport KZ 2 Routes for pedestrians. 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. Separation of cyclists from other transport modes. Cycle tracks and its design - one way streets, reserved traffic lanes, bus stops, crossings with other transport modes, crossroads. Traffic signs and road marking for cyclists. 614Y1PG Computer Graphics Basic formats of graphic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with editing programs (within the user level scope) using layers, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics cards. 614Y1P2 Computer Aid of Transportation Projecting 2 Overview of CAx application for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scrip			K7	2
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section). Dasks of טנ modelling.	· ·		sition curve, cross	-and longitudinal
	Section). Dasies of 3D Mo	uciiiiy.		

618Y1PS Computer Simulations in Mechanics	KZ	2
Principles and overview of programs for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model d	evelopment and ada	aptation of
geometry from other CAE systems. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary	y conditions and ap	plication of the
load. Basic tasks of structural and modal analysis. Introduction to complex nonlinear problems.		
614Y1PI Corporate Information System	KZ	2
Data-information-knowledge, components of information system, syntatic and semantic sense of data, structure of corporate information system, p	articular information	n system
(personalistic, production, storage, etc.), corporate information politic and information control, risks of information system operation, legal environment	ent of information sy	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, insertion of for		-
addressing, error detection. Working with large spreadsheets, filters, advanced filters, database functions. Pivot tables and charts, conditional formatt	ing, solution finding	, solver, macros,
data analysis. Examples and questions from various companies and training.	T= T	
612Y1PD Assessment of Transport	KZ	2
Assessment of transport structures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibility		
transport structures on the landscape. Rating fragmentation and landscape connectivity in the preparation of linear structures. Practical examples of the preparation of linear structures.	or assessment of tra	arric buildings on
the environment. COOMADIA Draduct Quality Management Processes	1/7	
620Y1PK Product Quality Management Processes Constal principles of arganization management Management systems and international standards; quality management systems. Quality products	KZ	2
General principles of organization management. Management systems and international standards; quality management systems. Quality products of standards for systems management, management principles. Principles of process management, monitoring and measurement systems management.		
for systems management. Process management principles. Metrology and testing. Product certification.	ent. Onlionn namew	OIK OI Stariuarus
	KZ	2
614Y1PJ C Programming Language C programming language. Preprocessor, basics of the C language (data types, syntax, commands), functions, pointes, dynamical memory allocation	1	· -
Implementations of abstract data types (FIFO, LIFO, list), programming techniques (sorting, searching, recursion), using bitwise operators.	, string, mes, structi	ares aria uriloris.
612Y1C1 Designing Roads in Civil 3D I	KZ	2
The course is devoted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through the design of roads as such, by the means of a 3D software.		
particular linear building, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation.	-	_
explanation of the traffic building design in the real-life profession.	The course also life	iddes a basic
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. Students go thro	1	· -
particular linear building, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation.	-	-
improved and developed. Students learn to design intersections.	mo promodely dogo	
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 creation, obj		-
connected with external database. Basic definition of work with lights, materials and reflexes. Models presentation.	,	
616Y1PV Operation, Construction and Maintenance of Vehicles	KZ	2
Methods of vehicle production. Vehicle maintenance. Vehicle diagnostics. Maintenance and repair plans. Engine maintenance and emission measu	1 1	
General principles of engine diagnostics.		
612Y1PU Organization Disposition of Railway Stations	KZ	2
Connecting station. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. 2		
Reserve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic railway		•
616Y1RE Control and Electronic Vehicle Systems	KZ	2
Elementary concepts of regulation. Tools for analytical solution, linear system description. Basic types of a regulator (PID), properties, advantages, dis	1	on. Conventional
and hybrid drive control. Electric drive. Vehicle communication bus (CAN, LIN, FlexRay, ISObus, KWP2000 protocole etc.). Vehicle electronic control	_	
comfort systems.		
621Y1RZ Human Resources Management	KZ	2
The position of human resources in the organization and related disciplines file. Substance, importance and challenges of human resources management		
environment of human resource management. Human resource planning. Search, recruitment and selection of employees. Motivation, evaluation are	d remuneration of s	taff. Positioning,
dismissal and redundancies of employees. Education of employees. Planning career management.		
617Y1ST Titan Simulation	KZ	2
Titan is a management game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same produce	duct. Students set a	price and
determine the quantity and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequence	ences of their decisi	ions by the form
of financial corporate reports and they use this information for other business decisions.		
620Y1SC Sensors and Actuators	KZ	2
Principles of sensors and actuators. Basics of measuring theory and actuating influence. The respective technologies and construction principles. Sens	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	olanning, culture
of the organization.		
611Y1SI Transportation Software Engineering	KZ	2
Basic concepts of software engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and impl	ementation using fo	rmal techniques
and practical usuage.		
622Y1SZ Forensic Expertise	KZ	2
Historical evolution of forensic engineering, forensic activity, current legislature in the Czech Republic, different disciplines, notion of forensic, foren	-	
expert role in the obtaining proofs, forensic methodology. Notion of the evidence, general principles of evidence obtaining, metrology, protocol, evidence, general principles of evidence, general principle	ences collection, si	te inspection,
forensic report, elements. Finding, expert testimony / report.		
616Y1KS Quality and Reliability of Vehicles	KZ	2
Quality and reliability theory in design, development, production and operation of vehicles. Definition and possible approach to quality and reliability	· -	·
Mode and Effects Analysis), QFD (Quality Function Deployment), DFx (Design for Assamly, Manufacturying, Quality, Services) and other method	ds used in industria	l applications.
Knowledge-based systems of quality and reliability, data collection.	, , , , , , , , , , , , , , , , , , , 	
612Y1SU Management and Maintenance of Roads	KZ	2
Getting familiar with ownership of roads in the Czech Republic and the administration of the road at the state and county level. It is presented deve	-	
medium and long-term strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and	epair methods are	discussed in the
classroom as well as investment activity in highway engineering.		

621Y1TH Aircraft Technical Handling	KZ	2
Aircraft towing and pushing tractors. GPU. Air conditioning and heating units. Aircraft fuel equipment. De-acing and ant	i-icing units. Loading and unloading units. Equ	uipment for
passangers onboarding and offboarding. Operational processes of aircraft technical handling and regulations. Moderni	zation and technical progress.	
611Y1TG Graph Theory	KZ	2
Basic concepts and terminology of graph theory, graph representation. Problems of graph theory, problem instance. Gr	·	
path problem, Eulerian path, bipartite graph matching, flow networks, circulations, critical path method, traveling salesma	-	- 1
for their solving. Computational complexity, dealing with NP-complete problems, heuris		-
614Y1TI Creating Interactive Internet Applications	KZ	2
Possibilities of scripting language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts ar	l	
in PHP language.		
621Y1UT Airports Maintenance	KZ	2
Summer airport maintenance. Summer maintenance equipment. Winter airport maintenance. Winter maintenance equipment.		I .
Operating procedures, limitations, practices.	,	,,
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	l l	1
figures, tables, graphs, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to		
so that they are able to concentrate mainly on writing a thesis.	property students for scarniess cutting dissert	ations and theses,
618Y1UK Introduction of Rail Vehicles	KZ	2
Basic characteristics and parameters rail transport systems - railway and urban transport. Basis driving mechanics rail		
track resistance. Total running resistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams		
and electric drive. Design concept rail vehicles and drive of wheel set.	and characteristics rail verticle - nydromecha	riic, riyaroayriariic
612Y1VC Waterways and Shipping	KZ	2
Basic modes of transport. The position of water transport in the transport system of the Czech Republic and the EU. Ac		-
of waterways in Europe, a network of waterways in the Czech Republic. Construction of the waterway and its equipmen in inland navigation, navigation rules of operation, navigation maps.	. Management of waterways and its operation	i. The legal regime
	1/7	
623Y1VS Negotiation and Cooperation	KZ	2
Code of conduct for negotiation. The influence of personality traits on the negotiations. Negotiation and commanding. T		
Principles of negotiation, the essence of negotiation, the differences in negotiation in business and in crisis situations, t	he principle of win both, specifications and i	blading, the role of
trust.	1/7	
614Y1VM Development of Applications for Mobile Devices	KZ	2
Object oriented programming, Java programming language, development environment, operating system Android, dev	elopment application - widgets, containers, th	reads, menu,
permissions, services, GUI.	1/7	
616Y1VT Development in Railroad Vehicles	KZ	2
Railroad vehicles traction. Railroad vehicle parametres regulation. Control and driving of railroad vehicles. Importance	n neavy duty and personal transportation. Cr	tical situation
assesment. New materials in design. International standardization.		
614Y1W1 Webdesign 1	KZ	2
Students will learn the basics of communication HTTP, URL and addressing, markup languages HTML and XHTML, HT		
and selectors, the issue of web browsers, creating one to three column layout pages, sites validation, conditional commenced and selectors, the issue of web browsers, creating one to three column layout pages, sites validation, conditional commenced and selectors.		
614Y1W2 Webdesign 2	KZ	2
Students will learn advanced techniques CSS, responsive webdesign, CSS frontends, content management systems,	JavaScript, jQuery, SEO, web server installati	on + configuration
directives. Topics will be practiced on practical examples.		
616Y1ZG Introduction into Applied Computer Graphics	KZ	2
Computer graphics, division and applications with emphasis on transport, including development and research. Colour		
and 3D generation, elementary algorithms for graphic data workout. Visualisation principles and tasks, technics, graph	cs and visualisation HW basics. Introduction	to 2D and 3D
graphics software.		
614Y1ZM Fundamentals of parametric and adaptive modeling	KZ	2
Basics of work at products and parts creation. Sketch drawing by help of geometric relations, parametric dimensions, c	reation of adaptive models from 2D sketches.	Import and export
from and to another systems. Fundamentals of assemblies creation.		
611Y1ZM Foundation of MATLAB Programming	KZ	2
To explain the principle of algorithmization, flow charts, description of MATLAB environment and its settings, MATLAB h	elp, mathematical operators, matrices and ele	ments operations,
control flow, inputs and outputs, graphics, optimization and program code debugging.		
612Y1ZU Principles of Urbanism	KZ	2
Survey on history of city and settlement building. Functional components and their mutual relations (working, living, rec	creation, transportation). Spacial arrangement	of settlements.
Types of towns or cities with a certain prevailing function, forms of their development. Brief overview of land-use planni	ng.	
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 in	I	1
in the end of 19th century and the beginning of the 20th century. Revolutions, the causes and consequences. Scientific		
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 arrang	l l	

Name of the block: Jazyky

Minimal number of credits of the block: 6

The role of the block: J

Code of the group: JZ 2 PRE (5.-6.SEM)

Name of the group: Jazyky bak. PRE pro 5. a 6. sem. (2.cizí jazyk) - pro B3710

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

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

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

Credits in the group: 6 Note on the group:

features. Practice of oral and written presentation.

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	Z	3	0P+4C+10E	Z	J
615JZ3I	Foreign Language - Italian 3	Z	3	0P+4C+10E	Z	J
615JZ3N	Foreign Language - German 3 René Skalický	Z	3	0P+4C+10E	3 Z	J
615JZ3R	Foreign Language - Russian 3 Vilma Gottwaldová	Z	3	0P+4C+10E	B Z	J
615JZ3S	Foreign Language - Spanish 3	Z	3	0P+4C+10E	Z	J
615JZ4F	Foreign Language - French 4	Z,ZK	3	0P+4C+10E	L L	J
615JZ4I	Foreign Language - Italian 4	Z,ZK	3	0P+4C+10E	L	J
615JZ4N	Foreign Language - German 4 René Skalický	Z,ZK	3	0P+4C+10E	L	J
615JZ4R	Foreign Language - Russian 4 Vilma Gottwaldová	Z,ZK	3	0P+4C+10E	B L	J
615JZ4S	Foreign Language - Spanish 4	Z,ZK	3	0P+4C+10E	B L	J

015JZ4N	René Skalický	Z,ZK	3	UP44C+1UB	L	J
615JZ4R	Foreign Language - Russian 4 Vilma Gottwaldová	Z,ZK	3	0P+4C+10B	L	J
615JZ4S	Foreign Language - Spanish 4	Z,ZK	3	0P+4C+10B	L	J
jazyk) - pro B3710	courses of this group of Study Plan: Code=JZ 2 PRE (56.	SEM) Name=Jaz	zyky ba			
	reign Language - French 3			1	Z	3
and perceptive and commun features. Practice of oral and	ction of conversation and professional topics based on the language level and stu- icative skills, vocabulary development. Basic stylistic forms. Presentation of own k written presentation.	•		•	•	•
615JZ3I Fo	eign Language - Italian 3				Z	3
Grammar and stylistics. Sele	ction of conversation and professional topics based on the language level and stu	udy focus at the Facult	y. Improve	ment of langua	ge structure	e knowledge
and perceptive and commun	icative skills, vocabulary development. Basic stylistic forms. Presentation of own k	knowledge in oral and	written for	m. Work with (p	rofessional)) text and its
features. Practice of oral and	written presentation.					
615JZ3N Fo	reign Language - German 3				Z	3
Grammar and stylistics. Sele	ction of conversation and professional topics based on the language level and stu	udy focus at the Facult	y. Improve	ment of langua	ge structure	e knowledge
and perceptive and commun	icative skills, vocabulary development. Basic stylistic forms. Presentation of own k	knowledge in oral and	written for	m. Work with (p	rofessional)) text and its
features. Practice of oral and	written presentation.					
615JZ3R Fo	reign Language - Russian 3				Z	3
Grammar and stylistics. Sele	ction of conversation and professional topics based on the language level and stu	udy focus at the Facult	y. Improve	ment of langua	ge structure	e knowledge
and perceptive and commun	icative skills, vocabulary development. Basic stylistic forms. Presentation of own k	knowledge in oral and	written for	m. Work with (p	rofessional)) text and its
features. Practice of oral and	written presentation.					
615JZ3S Fo	reign Language - Spanish 3				Z	3
Grammar and stylistics. Sele	ction of conversation and professional topics based on the language level and stu	udy focus at the Facult	y. Improve	ment of langua	ge structure	e knowledge
and perceptive and commun	icative skills, vocabulary development. Basic stylistic forms. Presentation of own k	knowledge in oral and	written for	m. Work with (p	rofessional)) text and its
features. Practice of oral and	written presentation.					
615JZ4F Fo	reign Language - French 4			Z,	ZK	3
Grammar and stylistics. Sele	ction of conversation and professional topics based on the language level and stu	udy focus at the Facult	y. Improve	ment of langua	ge structure	e knowledge
and perceptive and commun	icative skills, vocabulary development. Basic stylistic forms. Presentation of own k	knowledge in oral and	written for	m. Work with (p	rofessional)) text and its
features. Practice of oral and	written presentation.					
615JZ4I Fo	reign Language - Italian 4			Z,	ZK	3
Grammar and stylistics. Sele	ction of conversation and professional topics based on the language level and stu	udy focus at the Facult	y. Improve	ment of langua	ge structure	e knowledge
and perceptive and commun	icative skills, vocabulary development. Basic stylistic forms. Presentation of own k	knowledge in oral and	written for	m. Work with (p	rofessional)) text and its
features. Practice of oral and	written presentation.					
615JZ4N Fo	reign Language - German 4			Z,	ZK	3
Grammar and stylistics. Sele	ction of conversation and professional topics based on the language level and stu	udy focus at the Facult	y. Improve	ment of langua	ge structure	e knowledge
and perceptive and commun	icative skills, vocabulary development. Basic stylistic forms. Presentation of own k	knowledge in oral and	written for	m. Work with (p	rofessional)) text and its
features. Practice of oral and	written presentation.					
615JZ4R Fo	eign Language - Russian 4			Z,	ZK	3
and perceptive and commun	ction of conversation and professional topics based on the language level and stuicative skills, vocabulary development. Basic stylistic forms. Presentation of own k	•		_	-	_
features. Practice of oral and	· · · · · · · · · · · · · · · · · · ·					
	reign Language - Spanish 4			,	ZK	3
Grammar and stylistics. Sele	ction of conversation and professional topics based on the language level and stu	udy focus at the Facult	y. Improve	ment of langua	ge structure	₃ 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

List of courses of this pass:

Code	Name of the course	Completion	Credits
611CAL1	Calculus 1	Z,ZK	7
-	umbers and its limit. Basic properties of mappings. Function of one real variable, its limit and derivative. Geometric properties of n-dim an coordinate system. Geometric meaning of the differential of functions several real variables, differential calculus of functions of sev		=
611CAL2	Calculus 2	Z,ZK	5
	ewtonian integral, Riemannian integral of the function of one variable, improper Riemannian integral, Riemannian integral in Rn. Para		ū
k-dimensional su	rfaces in Rn, Riemannian integral over regular surfaces. Line and surface integrals of the second type, Stokes theorems, ordinary diff order, linear differential equations with constant coefficients and its systems.	erential equations	of the first
611FY1	Physics 1	Z,ZK	4
Kinem	natics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermodynamics, electric field, directed	d electric current.	'
611GIE	Geometry	KZ	3
0 1	oblique projections, linear perspective. Topographic surfaces and their orthogonal projection. Differential geometry of curves - param	,	,
	and curvature, Frenet's trihedron. Kinematics - a curve as a trajectory of the motion, the velocity and acceleration of a particle moving		
611LA	Linear Algebra	Z,ZK	3
ector spaces (line	ar combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and the their applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classifications.	-	minants and
CAAMDO			
611MDS	Collection and Processing of Traffic Data	KZ	2
•	siples of traffic detection and data collection, specific problems of the field of traffic data. Data preprocessing and analysis for use in a		
611MSP System and subsys	Modeling of Systems and Processes tem, external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of differe	Z,ZK	4
-	linear system, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer function		· -
200 00	Discretization of continuous systems. System interconnection.	Otability of Erro	,, 0.00.
6110PE	Optics and Electromagnetic Field	Z,ZK	4
	Electric field. Electric current. Magnetic field. Electromagnetic field. Optics. Basics of solid-state physics.	_,	'
611STAS	Statistics	Z,ZK	5
	i ility, random variable and its description, known distributions, random vector, function of random variable. Methods of point estimation. T	· '	hypothesis
Regression and co	rrelation, 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.		
611Y1MM	Mathematical Models in Economy	KZ	2
The goal of the co	urse is to teach selected methods of linear programming, with theoretical procedures applicable for individual tasks and their progran of the course is the ability to implement and solve basic tasks from the queue theory, graph theory and both free and constrained or	-	The outcom
611Y1PV	Parametrical and Multicriterial Programming John of linear programming with a parameter in objective function, on right sides and in the matrix of coeficients of linear constraints. Co	KZ	2 ent solution
611Y1SI	Transportation Software Engineering	KZ	2
	oftware engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and implemer and practical usuage.		1
611Y1TG	Graph Theory	KZ	2
•	d terminology of graph theory, graph representation. Problems of graph theory, problem instance. Graph search algorithms, trees, mir rian path, bipartite graph matching, flow networks, circulations, critical path method, traveling salesman problem. Problem of existence a for their solving. Computational complexity,dealing with NP-complete problems, heuris		
611Y1ZM	Foundation of MATLAB Programming	KZ	2
To explain the princ	tiple of algorithmization, flow charts, description of MATLAB environment and its settings, MATLAB help, mathematical operators, maticontrol flow, inputs and outputs, graphics, optimization and program code debugging.	rices and elements	operations
612APE	Applied Ecology	Z	3
Basic ecological pri	inciples. The atmosphere, air pollution from transport, smog, traffic share of greenhouse gas emissions. Transport within the different or cape protection, conflict of highway construction and protected areas NATURA 2000. The current ecological problems of the present. especially in the context of traffic on the roads and delay construction of transport.	mponents of the e	nvironment
=	Traffic Surveys and Simulations ow. Methods of monitoring - profile, spatially time. Automatic traffic counts. Security parameters - accidents, near-misses. Surveys in ion models. Getting to know the working environment applications. Explanation of movement of vehicles in the traffic system. Creating traffic model. Evaluation of the output characteristics. 4D visualization model.	•	
	Transport Models and Transport Excesses traffic flow and methods for their measurement. Models of the traffic flow, communications load, line and urban systems. Theory of quassessment. Statistical characteristics of transport. Transport excesses, their analysis, the causes, identify and minimize the consequence safety and fluency.	ences. Improving o	
stops and turn spac	City Rail Transport an rail transport. Tram lines layout and city roads. Tram track geometry parameters. Tram track superstructure. Turnouts and other con se. Underground and its basic characteristics. Underground nets in the world and undeground history in Prague. Underground track geon track superstructure and substructure. Underground stations. Suburban rail transport.	netry parameters. U	Inderground
612OMHD Project of public tr	Public Transport Operation ansport organisation, project of city public transport network, transportation survey, project of transport parametres, transport graph, transport priority, financing of public transport, quality of public transport.	Z,ZK route and stops of	4 line, public

040000444		7.71	
612PPMK	Urban Road Traffic and Design rban road, elements and routes for traffic, pedestrian and cycling transport, projection of intersections, roundabouts, calming of traffic	Z,ZK	4
Composition of the	& partially-sighted, induction of traffic, organization and regulation of transport.	, parking, precauti	OII IOI DIIIIU
612PPOK	Designing Roads, Highways and Motorways	KZ	3
	ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard	I	1
ange of vision for	r stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet intersections.	y device. Crossino	gs, junctions
612SDK	Highways, Motorways and Intersections	Z,ZK	4
	rays network, transport output. Types of direction curves. Hairpin bend. Stopping sight distance and overtaking sight distance. Levels of t		1
	d intersections. Crossroads. Roundabouts. Intersections. Special types of junctions. Capacity of crossroads and intersections. Structu		-
	motorways. Road engineering structures. Assessment of route alternatives.		
612VERD	Public Transport in Cities and Regions	Z	3
Public transport n	network design including determination of walking distances, characteristics of usable kind of transport, dimensioning transport capaci operational parametres of lines, objective way of quality evaluation of transport measures design.	ity of lines, formati	ion of lines,
612X31	Project 1	Z	2
612X32	Project 2	Z	2
612X33	Project 3	Z	2
612Y1C1	Designing Roads in Civil 3D I	KZ	2
	voted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through	I .	_
	building, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The		-
	explanation of the traffic building design in the real-life profession.		
612Y1C2	Designing Roads in Civil 3D II	KZ	2
	voted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through		
particular linear b	building, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The	previously acquire	ed 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 pricin	g. Practical
612Y1HD	creation of some project documentation parts. Traffic Noise	KZ	2
	ion, basic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regulation	I .	_
	s of urban acoustic, noise transmission, soundproofing. Types of noise sources in area. Determination of acoustic situation in the area		
	computing and measurement of transport noise. Acoustic studies, measuring protocol.		3,
612Y1KN	Combined Transportation	KZ	2
	port strategy and legislation. Load units. Means of transport in combined transport. Combined transport systems. Transshipping areas	I	I .
612Y1PC	Pedestrian and Cycling Transport	KZ	2
outes for pedestr	ians. 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	ration of cyclists from other transport modes. Cycle tracks and its design - one way streets, reserved traffic lanes, bus stops, crossings	s with other transp	ort modes,
	crossroads. Traffic signs and road marking for cyclists.		
612Y1PD	Assessment of Transport	KZ	2
	nsport structures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibilities of is on the landscape. Rating fragmentation and landscape connectivity in the preparation of linear structures. Practical examples of ass		
ansport structure	the environment.	essment of traffic	bullulings of
612Y1PU	Organization Disposition of Railway Stations	KZ	2
	on. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zon		l .
Rese	rve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic	railway network.	-
612Y1SU	Management and Maintenance of Roads	KZ	2
Getting familiar v	with ownership of roads in the Czech Republic and the administration of the road at the state and county level. It is presented develop	ment of road netw	ork, short,
nedium and long-t	term strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and repair	methods are disc	cussed in the
0.4.03.4.3.40	classroom as well as investment activity in highway engineering.	1.5-	
612Y1VC	Waterways and Shipping	KZ	2
	insport. The position of water transport in the transport system of the Czech Republic and the EU. Advantages and disadvantages of virope, a network of waterways in the Czech Republic. Construction of the waterway and its equipment. Management of waterways and	· ·	-
i waterways iii Eu	in inland navigation, navigation rules of operation, navigation maps.	no operation. The	iogai rogiirit
612Y1ZU	Principles of Urbanism	KZ	2
	of city and settlement building. Functional components and their mutual relations (working, living, recreation, transportation). Spacial	। I arrangement of s	I
040745	Types of towns or cities with a certain prevailing function, forms of their development. Brief overview of land-use planning.		
612ZAR Urbanism and	Introduction to Architectural Design d architecture of traffic systems. Bus and trolley-bus transport. Tramway and town tracks. Design of vehicles. Subway. Railway transport	Zrt. Railway stations	3 s. Local
6107515	communications. International airports.	7 71/	
612ZELP Legislation in rail	Railway Operation way transport. Railway vehicles. Railway signals and signal devices. Railway traffic organisation and operation. Simplified railway traffic	Z,ZK ic operation. Railw	4 ay vehicles
610770	brakes. Railway vehicles marking. Operation intervals. Theoretical graph of train running.	7 71/	
612ZTS	Railway Lines and Stations ailway track geometry parameters. Route layout of railway lines. Railway line construction - railway substructure and superstructure. S	Z,ZK	4 Iway lines
ran nansport. K	Railway track geometry parameters. Route layout or railway lines. Railway line construction - railway substructure and superstructure. S Railway control systems in relation to infrastructure. Operating and carriage points. Railway lines net and category. Traction in rail to	-	iway iiiies.
612ZYDI	Introduction to Transportation Engineering	Z,ZK	2
	ion in land-use planning. Basic terms in transportation engineering. Traffic survey and traffic prognosis. Introduction to topic of roads, p	. ,	1
,	impacts of transportation to environment and safety.	-1	3

	Algorithm and Data Structures	KZ	2
colutions to the s	iliarized with selected basic and derived data structures, algorithms, their properties and their design procedure. Students will analyze	1	1
Solutions to the S	et task and the resulting algorithm write by means of flowcharts, practice in reading algorithms recorded by means of the flowchart a	and use the basics	of Boolean
04447	algebra with forming the conditions for the algorithms.	1/7	
614AZ	Data Analysis and Processing course is learn students how to prepare raw data for following processing and analysis. Knowledge of algorithms for determining the	KZ	2
	image data or from the Internet.	-	
614DB	Database Systems	KZ	2
	ndamentals of relational and object database systems, database structure, relations modelling, relation algebra, dbf. tools, database	1	I
remote data acce	ss. Basic statement of SQL language. Expert systems and knowledge based applications, knowledge representation, methods of de interface for knowledge systems design, certainty and uncertainty in knowledge systems.	erivating and impl	ementating,
614KSP	Constructing with Computer Aid	KZ	2
	m determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic common wo	rk rules in graphic	applications
and CA systems.	Co-ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting possil profiles, drawings with raster foundaments).	bilites, AutoCAD e	environment
614PPD	Computer Aid of Transportation Projecting	KZ	2
	plication for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, da	1	
modification (attribu	tes, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transitic section). Basics of 3D modelling.	on curve, cross-an	d longitudina
614PRG	Programming	KZ	2
Algorithm develo	ment, methods of structured programming, high-level programming languages, basics of C programming languages (types, variable functions), programming techniques, complexity.	es, conditions, cyc	cles, arrays,
614Y1AV	Animation and Visualization	KZ	2
Advanced modifica	ions and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and Sp	ace Warp objects	. Atmospherio
	s, rendering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animation		
614Y1BE	Barrierless Transport	KZ	2
	ess accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students nment roads, railway stations, public transport stops, terminal buildings, vehicles, public transport, information and orientation systems	-	_
oi barrieriess eriviro	Theoretical knowledge will be supplemented by practical examples.	s and transportation	in technology
614Y1BM	Biometric Methods	KZ	2
	ms, authentication methods, principles and performance measurement of biometric systems, overview of biometric technologies, ha	l .	1
retina recognition r	ethod, 2D and 3D face recognition, vein patterns on the wrist, ear biometrics, fingerprint recognition, skin spectroscopy, behavioral	methods, the use	of biometrics
	in transport applications, safety and risks of biometric technologies.	1	_
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 arithmetic and logical units, I/O subsystem.	parts designing -	controllers,
614Y1MP	Modeling Complex Assemblies and Models in Parametric Modeller	KZ	2
	ramming - tools and methodology of working subassemblies and assemblies, sheet metal parts modelling, welded assemblies, pipe	elines, and distribu	I
	Photorealistic output rendering - physical and material properties, lighting sources. MKP - visual example.		
614Y1OP	Operating System	KZ	2
	callation GNU/Linux OS. X-window system. Rights management - users and groups, ACL rights. Filesystems and attributes. Program	•	
runieveis. Basic (onsole programs / commands. Config files. SW management, package systems. Programs in graphic shell - text, spreadsheet, grap communication. Services management. Safe and secure configuration of OS. Remote administration.	nic editors, sound	, video and
614Y1P2	Computer Aid of Transportation Projecting 2	KZ	2
	plication for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, da	1	1
Overview of CAx a	4		arioca biocita
-	tes, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transitic		
modification (attribu	section). Basics of 3D modelling.	on curve, cross-an	d longitudina
modification (attribution)	section). Basics of 3D modelling. 3D Modeling in AutoCAD	on curve, cross-an	d longitudina
modification (attribution)	section). Basics of 3D modelling. 3D Modeling in AutoCAD arametric modeller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup creation, object	on curve, cross-an	d longitudinal
modification (attribution) 614Y1PA Work in 3D non-p	section). Basics of 3D modelling. 3D Modeling in AutoCAD arametric modeller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup creation, object connected with external database. Basic definition of work with lights, materials and reflexes. Models presentation.	KZ data creation, wo	d longitudina 2 ork with data
614Y1PA Work in 3D non-p	section). Basics of 3D modelling. 3D Modeling in AutoCAD arametric modeller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup creation, object	KZ data creation, wo	d longitudina 2 ork with data
614Y1PA Work in 3D non-p	section). Basics of 3D modelling. 3D Modeling in AutoCAD arametric modeller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup creation, object connected with external database. Basic definition of work with lights, materials and reflexes. Models presentation. Computer Graphics	KZ data creation, wo	d longitudina 2 ork with data
614Y1PA Work in 3D non-p	section). Basics of 3D modelling. 3D Modeling in AutoCAD arametric modeller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup creation, object connected with external database. Basic definition of work with lights, materials and reflexes. Models presentation. Computer Graphics raphic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with edit	KZ data creation, wo	d longitudina 2 ork with data
614Y1PA Work in 3D non-p 614Y1PG Basic formats of 6 614Y1PI Data-information	section). Basics of 3D modelling. 3D Modeling in AutoCAD arametric modeller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup creation, object connected with external database. Basic definition of work with lights, materials and reflexes. Models presentation. Computer Graphics raphic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with edit level scope) using layers, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphic Corporate Information System n-knowledge, components of information system, syntatic and semantic sense of data, structure of corporate information system, pa	KZ t data creation, wo KZ ting programs (with case cards. KZ articular information	d longitudina 2 prk with data 2 hin the user 2 on system
614Y1PG Basic formats of g 614Y1PI Data-informatic (personalistic, prod	section). Basics of 3D modelling. 3D Modeling in AutoCAD arametric modeller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup creation, object connected with external database. Basic definition of work with lights, materials and reflexes. Models presentation. Computer Graphics raphic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with edit level scope) using layers, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphic Corporate Information System	KZ t data creation, wo KZ ting programs (with case cards. KZ articular information	d longitudina 2 prk with data 2 hin the user 2 on system
614Y1PA Work in 3D non-p 614Y1PG Basic formats of 6 614Y1PI Data-informatio (personalistic, prod	section). Basics of 3D modelling. 3D Modeling in AutoCAD arametric modeller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup creation, object connected with external database. Basic definition of work with lights, materials and reflexes. Models presentation. Computer Graphics raphic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with edit level scope) using layers, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphic Corporate Information System n-knowledge, components of information system, syntatic and semantic sense of data, structure of corporate information system, praction, storage, etc.), corporate information politic and information control, risks of information system operation, legal environment of state information system, information system security, data protection, safety politics. C Programming Language	KZ data creation, wo KZ ting programs (with the case cards. KZ articular information systems) KZ	d longitudina 2 prk with data 2 hin the user 2 on system em operation 2
614Y1PA Work in 3D non-p 614Y1PG Basic formats of 6 614Y1PI Data-informatio (personalistic, prod	section). Basics of 3D modelling. 3D Modeling in AutoCAD arametric modeller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup creation, object connected with external database. Basic definition of work with lights, materials and reflexes. Models presentation. Computer Graphics raphic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with edit level scope) using layers, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphic Corporate Information System n-knowledge, components of information system, syntatic and semantic sense of data, structure of corporate information system, praction, storage, etc.), corporate information politic and information control, risks of information system operation, legal environment of state information system, information system security, data protection, safety politics.	KZ ting programs (with the care action) KZ ting programs (with the care action) KZ articular information systems (KZ ing, files, structure	d longitudina 2 prk with data 2 hin the user 2 on system em operation 2
614Y1PA Work in 3D non-p 614Y1PG Basic formats of 6 614Y1PI Data-informatio (personalistic, prod	section). Basics of 3D modelling. 3D Modeling in AutoCAD arametric modeller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup creation, object connected with external database. Basic definition of work with lights, materials and reflexes. Models presentation. Computer Graphics raphic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with edit level scope) using layers, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphic Corporate Information System n-knowledge, components of information system, syntatic and semantic sense of data, structure of corporate information system, praction, storage, etc.), corporate information politic and information control, risks of information system operation, legal environment of state information system, information system security, data protection, safety politics. C Programming Language guage. Preprocessor, basics of the C language (data types, syntax, commands), functions, pointes, dynamical memory allocation, stri	KZ ting programs (with the care action) KZ ting programs (with the care action) KZ articular information systems (KZ ing, files, structure	d longitudina 2 prk with data 2 hin the user 2 on system em operation 2
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614Y1UP	Editing of Theses in MS Word	KZ	2
	introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, crea	1	1
	phs, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless ecos so that they are able to concentrate mainly on writing a thesis.		
614Y1VM	Development of Applications for Mobile Devices	KZ	2
	programming, Java programming language, development environment, operating system Android, development application - widgets permissions, services, GUI.	1	1
614Y1W1	Webdesign 1	KZ	2
tudents 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	ty and usability, CS	SS propert
614Y1W2	Webdesign 2	KZ	2
	advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, web ser directives. Topics will be practiced on practical examples.	1	1
614Y1ZM	Fundamentals of parametric and adaptive modeling	KZ	2
	oroducts and parts creation. Sketch drawing by help of geometric relations, parametric dimensions, creation of adaptive models from 2 from and to another systems. Fundamentals of assemblies creation.	2D sketches. Impo	rt and exp
615DPLG	Transportation Psychology	Z	2
	ogy and its basic concepts. Information intake, decision-making and behaviour. Performance. Engineering psychology and vehicle consi	truction. Psycholo	1
of trav	el route and traffic conditions, accidents and traffic incidents. Selection and training of the staff. Work and leisure. Age as a factor in tra	ansport operation	
615JZ1A	Foreign Language - English 1	Z	3
rammatical struc	tures and style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and co		. Elementa
	stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles		
615JZ2A	Foreign Language - English 2	Z,ZK	3
ammatical struc	tures and style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and co stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles		. Element
615JZ3F	Foreign Language - French 3	7	3
	Foreigh Language - Fierion 3 istics. 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		
ia porcopiivo ai	features. Practice of oral and written presentation.	with (protocolorial)	, toxt and
615JZ3I	Foreign Language - Italian 3	Z	3
	istics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of I	_	_
-	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work		
	features. Practice of oral and written presentation.		
615JZ3N	Foreign Language - German 3	Z	3
-	istics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of I d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work		
	features. Practice of oral and written presentation.		т —
615JZ3R	Foreign Language - Russian 3	Z	3
	istics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of I d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work features. Practice of oral and written presentation.		
615JZ3S	Foreign Language - Spanish 3	Z	3
Grammar and sty	istics. 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	language structure	knowled
	features. Practice of oral and written presentation.		
615JZ4F	Foreign Language - French 4	Z,ZK	3
=	istics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of I d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work		
	features. Practice of oral and written presentation.		_
615JZ4I	Foreign Language - Italian 4	Z,ZK	3
-	istics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of I		
nd perceptive ar	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work features. Practice of oral and written presentation.	with (professional)) text and
615JZ4N	Foreign Language - German 4	Z,ZK	3
	Foreign Language - German 4 istics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of I	1	-
-	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work features. Practice of oral and written presentation.		
615JZ4R	Foreign Language - Russian 4	Z,ZK	3
	istics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of I		1
nd perceptive ar	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work features. Practice of oral and written presentation.	with (professional)) text and
615JZ4S	Foreign Language - Spanish 4	Z,ZK	3
rammar and sty	istics. 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	language structure	knowled
	features. Practice of oral and written presentation.		
615X31	Project 1	Z	2
615X32	Project 2	Z	2
615X33	Project 3	Z	2
	•		2
615Y1BO	Work Safety and Health Protection in Transportation Slative, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation. Health insurance of home and foreign business trips, statistics, working practice.	KZ	rogran

615Y1DZ	History of Railway	KZ	2
	ways, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repu		
vvai ii raiiways, raii	way development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connecti railway accidents, railway junctions. Excursions and projections.	oris, railway iiries ci	oristruction,
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, communism. Li	•	
goals. Europe aft	er Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and it	ts consequences for	or Europe.
615Y1FD	New quality of French-German relationship - a driving power of starting European integration.	KZ	2
	French Area Studies and Transportation by and regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air traf	1	
	nch society and culture. Current political system. System of education, studying in France. Selected authors of French literature. French	-	
615Y1HD	History of City Mass Transport	KZ	2
	s transport in the world, development of tram, bus and trolley-bus systems. History of transport networks in the world, current trends a	-	of tariff and
	ance systems. History of city transport in Prague and Brno. History of tram, bus and trolley-bus operation systems in the Czech Reput		
615Y1HE Basic knowledge	Work Hygiene and Ergonomics in Traffic of occupational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of these	KZ factors on health of	2 f workers
_	tection of working conditions that do not damage public health. Mutual links man-machine-environment. Adaptation of technology to p		
	Practical examples from the field of transportation; relevant legislative.		
615Y1HL	(History of Civil Aviation)	KZ	2
	g, development of aircrafts lighter than air. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of a amous aviators. Helicopters. CSA airplanes. Development of aircrafts in Czechoslovakia between the years 1945-1989. Classic era o		
world airports. I	aviation. Modern era of civil aviation. Airline companies. Supersonic flying.	aviation. Coluen e	sia oi civii
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, evolution of the "West" and "East" from the 1500s. Focus on the history in the period between 1850 nad 1950. Milestones and continuing	KZ	2
	entury and the beginning of the 20th century. Revolutions, the causes and consequences. Scientific and technological progress, the	=	
	Economic and financial history. Social changes. Discussions on texts, sources.		
616DPY	Vehicle Technology	KZ	5
Technical nom	enclature in transportation technology. Vehicle in legislation. Design. Operation. Influence on environment. Vehicle and ecology. Traction	on engine characte	ristics -
616DV I	combustion engines, electric engines, change of energy principles. Powertrain construction. Power transmission.	7.71/	3
616DYJ Application of med	Vehicle Dynamics hanics. Wheel and axle suspension mechanism. Wheel to road positioning characteristics. Wheel - road contact. Skid and its characte	Z,ZK	_
	eceleration. Vertical dynamics, spring suspension, driving characteristics. Directional dynamics, gyroscopical characteristics. Driving sta	-	- 1
	forces. Driving and feedback. ABS, ESP.		
616PAV	Passive Safety	Z,ZK	4
Road accident eva	luation. Testing and legislation. Crash tests. Carbody properties. Injury mechanics. Restrain systems. Airbags. Road user safety. Mathe safety systems.	matic modelling. P	ost collision
616UDOP	Introduction into Vehicles	Z	2
	sportation systems. Functionality and setup. Movement and drive principles. Engines and their characteristics. Rail, road, air and wate	. – .	
	of transport. Lifting equipment and conveyors. Legislation.		
616X31	Project 1	Z	2
616X32	Project 2	Z	2
616X33	Project 3	Z	2
616Y1EN Dynamics and the	Energy Requirements of Vehicles ediving inertial of the vehicles. Types of energy - kinetic, static, heat, chemical and others. Ways of energy change into kinetic energy	KZ Combustion engin	2 ne electric
Dynamico and the	drive, steam engine, air engine. Energy accumulation means, accumulator, flywheel, fuel cell. Energy recuperation. WTW anal	•	10, 01001110
616Y1IS	Interactive simulators and simulations	KZ	2
	ry and application of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical me		nethods.
	lation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and intera		
616Y1KS	Quality and Reliability of Vehicles Dility theory in design, development, production and operation of vehicles. Definition and possible approach to quality and reliability. Kr	KZ KZ	2 A (Failure
	Analysis), QFD (Quality Function Deployment), DFx (Design for Assamly, Manufacturying, Quality, Services) and other methods u	· -	
	Knowledge-based systems of quality and reliability, data collection.		
616Y1PV	Operation, Construction and Maintenance of Vehicles	KZ	2
Methods of vehicle	e production. Vehicle maintenance. Vehicle diagnostics. Maintenence and repair plans. Engine maintenance and emission measureme	ent. Transmission m	nechanism.
616Y1RE	General principles of engine diagnostics. Control and Electronic Vehicle Systems	KZ	2
	ots of regulation. Tools for analytical solution, linear system description. Basic types of a regulator (PID), properties, advantages, disadva	1	
	e control. Electric drive. Vehicle communication bus (CAN, LIN, FlexRay, ISObus, KWP2000 protocole etc.). Vehicle electronic control,	_	
	comfort systems.		
616Y1VT	Development in Railroad Vehicles	KZ	2
Railload venicle	s traction. Railroad vehicle parametres regulation. Control and driving of railroad vehicles. Importance in heavy duty and personal trar assesment. New materials in design. International standardization.	isportation. Critical	รแนสแอก
616Y1ZG	Introduction into Applied Computer Graphics	KZ	2
	s, division and applications with emphasis on transport, including development and research. Colours, colour perception, colour sche	1 1	
and 3D generati	on, elementary algorithms for graphic data workout. Visualisation principles and tasks, technics, graphics and visualisation HW basics	s. Introduction to 20	D and 3D
	graphics software.		

	T		
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, l	buses, motorbikes,	, legislation
	in the EU and in the world, creation of technical legislation, testing methods, vehicle tests, accelerated tests, mathematical modelling	ງ in testing.	
617GEDS	Geography of Transport Systems	KZ	2
Regional differe	entiation of the transport system. Sociogeographic regionalization and its relation to transport. Transport and local and regional develo	pment. Spatial inte	raction -
_	thodological framework. Mobility research - travel behavior, mode choice and the influence onto "modal-split." Modal competition. Practica	-	
	analysis in transportation planning.	, ,	
617SFID	Public Administration and Financing in Transport	Z,ZK	4
	nsport and transport policy in the social context, environmental issues in transport, economical aspects of transport, public administration		
			2
617TEDL	Transport Technology and Logistics	KZ	3
	resport technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and freight transport technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and their articular steps of the planning in pasanger and the planning in pasanger and their articular steps of the planning in pasanger and the planning in pasanger a		
	nodus, technologic factors of the side of operator and client, organisation of city transport, logistic technologies and their aplication usi		
617TGA	Graph Theory and its Applications in Transport	Z,ZK	4
Basic terms of	f graph theory, paths in graphs, flows in networks, location problems, design problems on graphs, optimum routing, use of graphs in o	ther scientific disc	iplines.
617X31	Project 1	Z	2
617X32	Project 2	Z	2
617X33	Project 3	Z	2
617Y1LL	Logistics of Passenger and Freight Air Transport	KZ	2
		1	
Logistics attitle pa	ssenger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial trans	sport process pass	engers and
	air cargo. Information systems in air transport. Global distribution systems.	1	_
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	sing (rent, mortgag	e, savings,
consumer loans, re	financing), savings and investments (investment horizon, return, risk, investment strategy), insurance (insurance types, suitability and a	adequacy), securir	ng the future
	(retirement savings and insurance).		
617Y1PM	Personnel Management	KZ	2
	ces, work group, man as personality, planning, choice, evaluation and education of human sources, work adaptation, teamwork, inter	1	
617Y1SL	Sociology of Human Resources	KZ	2
	and their importance, work group as a special kind of social group, communication, personal management, modern management, hum		
Tidillali lesources a	of the organization.	an resources plant	iiig, cuiture
047)/4 OT		1/7	0
617Y1ST	Titan Simulation	KZ	. 2
	gement game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same produce	-	
determine the quar	ntity and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequences	s of their decisions	by the form
	of financial corporate reports and they use this information for other business decisions.		_
618DKS	Dynamics of Structures and Systems	Z,ZK	4
	ms with multiple degrees of freedom. Natural modes and natural frequencies. Method of stiffness constants, method of elastic constants		
Systems with contin	nuously distributed mass. Matrix form of equations of vibration. Finite element method in dynamics of structures. Solving vibrations by s	uperposition of nat	ural modes.
	Subspace iteration methods. Introduction to nonlinear vibrations.		
618KAD	Kinematics and Dynamics	Z,ZK	4
Motion along a line	, motion along a curve. Kinematics of rigid plane, kinematics of rigid body. Point mass kinematics, system of point masses. Point mass	dynamics and sys	tem of point
masses, equation	on of motion. Method of Newton. Princle of D'Alembert. Free and forced vibration with one degree of freedom. Viscous damping. Impac	ct theory. Introducti	ion to the
	solution of vibration with multiple degrees of freedom.		
618MTY	Materials Science and Engineering	Z,ZK	3
Basic course of ma	aterials science and engineering explains mechanical properties of structural materials based on their bonding forces and microstructu		ain attention
	s the most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and com		
	to degradation processes in materials, to defectoscopy and to main mechanical tests.		-
618NMM	Numerical Methods in Mechanics	Z	3
	st used numerical methods in structural mechanics. Central difference method, finite element method, finite volume method, boundar	1	
	on schemes. Finite element method: derivation of the basic equations. Stiffness matrix, mass matrix, damping matrix for element and	•	
Spatial discretization	systems of algebraic equations. Numerical integration. Programming the FEM.	Structure. Metrious	o for solving
610001		V7	2
618POM	Advanced Materials	KZ	2
	ined in primary materials course is further developed. In greater physical detail it explains dynamics of strcture defects, phase diagram		
concepts. Special p	processes of structure control are discussed. The gained knowledge is utilized on description of contemporary technologies of materia	ai production for Ke	ey industriai
	applications.		
618PZP	Elasticity and Strength	Z,ZK	3
	ression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam. Design of riveted, bolted	=	
· · · · · · · · · · · · · · · · · · ·	ection curve of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Beam on elastic for	undation. Strength	analysis.
618SAT	Structural Analysis	Z,ZK	4
	of forces in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determinate	-	-
Principle of virtual v	work. 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.		
618TED	Technical Documentation	KZ	2
	ards, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional	al and geometrical	accuracy,
	arrangement of drawing sheets.		
618TK	Theory of Structures	KZ	2
	ne, principle of virtual work. Force (flexibility) method. Aplication of force method to frame analysis. Displacement (stiffness) method. S	1 1	
· ·	ical foundations of elasticity. Static analysis of complex statically indeterminate structure. Energy methods for beam analysis. Lagrang	· ·	
	model of elastic foundation. Pasternak model of elastic foundation.		-

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	m. Structure
and biomechanics	of muscular-skeletal system. Injury of human organs and musculo-skeletal system during traffic accidents. Mobility of ill and injured r	nan and his treatme	ent. Human
040\/45\4	joint prostheses. Protective means and traffic safety regulations.	1/7	0
618Y1EM	Experimental Methods in Mechanics ole of experimental mechanics. Sensors for mechanical testing. Overview of experimental methods. Destructive and non-destructive	KZ	2 Design of
	ole of experimental mechanics. Sensors for mechanical testing. Overview of experimental methods, bestructive and non-destructive cedures and sample preparation. Tensile and bending tests, Electrical resistance strain gages. Optical based strain measurement. Fa	-	
onportitional pro-	Instrumented hardness testing. Introduction to electron microscopy. Errors in measurement.	gue aaee p	
618Y1MT	Engineering Materials	KZ	2
Systematic overvie	ew of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers and	l composites, atten	ition is paid
	ogical materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's	selection charts.	
618Y1PS	Computer Simulations in Mechanics	KZ	2
•	verview of programs for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model developed on CAE systems. Assignment of metarial proportion. The types of elements and their use. Dispersization of callid model. Boundary on		
geometry nom our	er CAE systems. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary colload. Basic tasks of structural and modal analysis. Introduction to complex nonlinear problems.	iditions and applica	alion of the
618Y1UK	Introduction of Rail Vehicles	KZ	2
	ics and parameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion tra	l .	
track resistance. To	tal running resistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehicle -	nydromechanic, hy	drodynamic
	and electric drive. Design concept rail vehicles and drive of wheel set.		
620SYSA	Systems Analysis	Z,ZK	5
•	em sciences, system viewpoint, terminology, typical system analysis tasks, system identification, system interface and interface tasks strong functions and processes, genetic code, system identity, system architecture. Tools for system analysis - Petri nets, decision tal		
and its analysis,	tasks. Soft and hard systems, methods for soft system analysis.	iles, algoritimis ioi	Siluciulai
620UITS	Introduction to Intelligent Transport Systems	Z,ZK	7
	gislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamentals of infor		
systems for ITS. Pr	inciples and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real examples	of possible applica	ations of the
	principles of ITS.		
620X31	Project 1	Z	2
620X32	Project 2	Z	2
620X33	Project 3	Z	2
620Y1AE	Applied Electronics	KZ	2
	semiconductor components, their principles, characteristics and typical connection diagrams. Semiconductor PN junction diodes, trar ogic gates. Functions of basic electronic circuits and methods for their designs (rectifiers, voltage regulator with Zener diode, transisto		
ampliners, basic id	amplifier as an inverting and noninverting amplifier).	n as an ampliller, c	pperational
620Y1AF	Alternative Forms of Transportation Project Financing	KZ	2
	such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt paym		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
	phere, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilistic In pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transp		
620Y1EK	Qualification in Electrical Engineering	KZ	2
	e with measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock hazard,		
voltage, maximum	allowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legislation	on, standards and	regulations
	in relation to health and safety and electrical engineering.		
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 examples of road networks, localization on the network. Routing algorithms, their properties and implementation.	mples of datasets t	for finding
620Y1OI	transport connections, routing algorithms, their properties and implementation. Fare Collection and Information Systems	KZ	2
	rate Conection and information Systems restems in public transport and their components (on-board units, validators, turnstiles,). Information systems and their components		
•	nels) and operators (cycles, location or current delay of vehicles,). The issue of tariff systems. Other examples of clearance systems	•	, -1-,
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	niform framework o	of standards
6207/466	for systems management. Process management principles. Metrology and testing. Product certification.	1/7	
620Y1SC	Sensors and Actuators s and actuators. Basics of measuring theory and actuating influence. The respective technologies and construction principles. Sensors o	KZ	2 ro-magnetic
i ililoipies di serisdi	state (temperature, humidity), chemical and particle flow values. Electrical, pneumatic and hydraulic actuators and solid phase electrical state (temperature) in the solid phase electrical state (temperature).		o-magnetic,
621Y1BC	Aviation safety and security	KZ	2
	f safety and security development in aviation. Modern tools for safety and security management. Research and development of safe		
621Y1BS	Unmanned aircraft systems 1	KZ	2
Unmanned Aviatio	n Development. Aircraft design. Legislation in force in the Czech Republic. Planning and execution of the flight. Airspace division. Open	erational risks and	operational
	procedures. Practical flights.		_
621Y1FN	Factors Affecting the Rate of Accidents in Aviation	KZ	2
Introduction. The so	Factors Affecting the Rate of Accidents in Aviation cope of international and national organizations in civil aviation. The scope of the investigation organizations within the state and inte	rnational committee	es. Analysis
Introduction. The so	Factors Affecting the Rate of Accidents in Aviation cope of international and national organizations in civil aviation. The scope of the investigation organizations within the state and inte n of ICAO Annexes 13 and 19. Analysis and interpretation of the Regulation (EC), Regulation (EU). Human factor. Utilization of inform	rnational committee	es. Analysis
Introduction. The so and interpretation	Factors Affecting the Rate of Accidents in Aviation cope of international and national organizations in civil aviation. The scope of the investigation organisations within the state and inte n of ICAO Annexes 13 and 19. Analysis and interpretation of the Regulation (EC), Regulation (EU). Human factor. Utilization of inform reports.	rnational committeenation from the inve	es. Analysis estigation
Introduction. The so and interpretatio 621Y1LA	Factors Affecting the Rate of Accidents in Aviation cope of international and national organizations in civil aviation. The scope of the investigation organizations within the state and inte n of ICAO Annexes 13 and 19. Analysis and interpretation of the Regulation (EC), Regulation (EU). Human factor. Utilization of inform	rnational committee nation from the inve	es. Analysis estigation
Introduction. The scand interpretation 621Y1LA Methodology of flying	Factors Affecting the Rate of Accidents in Aviation cope of international and national organizations in civil aviation. The scope of the investigation organisations within the state and inte n of ICAO Annexes 13 and 19. Analysis and interpretation of the Regulation (EC), Regulation (EU). Human factor. Utilization of inform reports. Aerobatics	rnational committee nation from the inve KZ eating an aerobatio	es. Analysis estigation 2 c sequence.

621Y1LR	Radio Technology in Aviation	KZ	2
Electric signals ar	d the wave spectrum. Analog and digital modulations. Noises. Filters. Resonance circuits. Electromagnetic field. Electromagnetic wa	ve propagation. Wa	ave ranges
	in aviation, radiation and reception of electromagnetic field. Antennas in aviation, receivers and transmitters.	т	1
621Y1MP	Matlab for project-oriented study	KZ	2
	bus is focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exercises		-
	les, based on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improvement	KZ	2
621Y1MZ	Managerial Ethics ogy of managerial ethics. Basics of etiquette and rules of social contact. Social events. Etiquette of working contacts. The art of present	1	1
The basic terminoic	image. Diplomatic protocol. Managerial ethics. Business ethics.	ation and negotiation	on. Fersonai
621Y1RZ	Human Resources Management	KZ	2
	numan resources in the organization and related disciplines file. Substance, importance and challenges of human resources manage		
	nan resource management. Human resource planning. Search, recruitment and selection of employees. Motivation, evaluation and rer		
	dismissal and redundancies of employees. Education of employees. Planning career management.		
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 unk	oading units. Equip	ment for
	ssangers onboarding and offboarding. Operational processes of aircraft technical handling and regulations. Modernization and techn		
621Y1UT	Airports Maintenance	KZ	2
Summer airport ma	intenance. Summer maintenance equipment. Winter airport maintenance. Winter maintenance equipment. De-icing / anti-icing of airc	craft. De-icing / anti-	i-icing liquid.
	Operating procedures, limitations, practices.	т	
621ZALD	Basics of Air Transport	KZ	, 2
•	terminology, basic rules. VFR/IFR. Basics of aerodynamics. Propulsion of aircraft. Aircraft design. Basics of navigation, radio navigation.	•	
Flight planning, opt	imization of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic management, ground Airlines and economics. Space technologies.	ind nandling, secur	illy. All crew.
622MEMT	Measurement Methods and Technology in Transportation	KZ	4
-	thods in transport, their meaning and use;Geodetic basics in the Czech Republic; Angular, length and height measurements;Principl	1	
	tic measurements;Surveying and setting out;Challenges of localization, navigation and Global Navigation Satellite Systems;Laser so		-
J	UAV); Technical photography and photogrammetry; Dynamic measurements of vehicles; High-speed cameras;	,	,
622PRES	Road Traffic Accidents Prevention	KZ	4
Basic relation cau	ses - prevention, collision diagrams, causes of not giving way, initial speed and breaking influence on speed of impact, downhill grad	le, load transport a	nd fixation,
collisions with ped	estrians, cyclists and motorcyclists, construction of vehicle breaks, winter conditions, inconvenient road parameters, visibility, anti-sli	de properties of roa	ad surface,
	solid barriers, assist systems, technical fault of vehicles.		
622UAN	Road Traffic Accidents Analysis Introduction	KZ	2
	ters of road infrastructure, typical vehicle dimensions, distance-time diagram, response time components, backward projection of acceptance influence on processors wides desumentation problem who was the driver desumentation marks and wife limits of a	=	·=
post-crasn deform	ation, impact influence on passengers, video documentation, problem who was the driver, documentation, marks analysis, limits of a critical maneuvring, technical view hindrances, visibility and discriminability, nightfall.	accidental analysis,	, cornering,
622X31	Project 1	Z	2
622X32	Project 2	Z	2
622X33	<u> </u>	Z	
	Project 3		2
622Y1SZ	Forensic Expertise of forensic engineering, forensic activity, current legislature in the Czech Republic, different disciplines, notion of forensic, forensic legislature in the Czech Republic, different disciplines, notion of forensic, forensic legislature in the Czech Republic, different disciplines, notion of forensic, forensic legislature in the Czech Republic, different disciplines, notion of forensic, forensic legislature in the Czech Republic, different disciplines, notion of forensic, forensic legislature in the Czech Republic, different disciplines, notion of forensic, forensic legislature in the Czech Republic, different disciplines, notion of forensic, forensic legislature in the Czech Republic, different disciplines, notion of forensic legislature in the Czech Republic, different disciplines, notion of forensic legislature in the Czech Republic, different disciplines, notion of forensic legislature in the Czech Republic, different disciplines, notion of forensic legislature in the Czech Republic, different disciplines, notion of forensic legislature in the Czech Republic, different disciplines, notion of forensic legislature in the Czech Republic, different disciplines are disciplined at the Czech Republic legislature in the Czech Re	KZ	2
	obtaining proofs, forensic methodology. Notion of the evidence, general principles of evidence obtaining, metrology, protocol, evidence	-	
expert fole in the	forensic report, elements. Finding, expert testimony / report.	ses concentori, site i	mopconon,
623BDIS	Safety Technologies of Transportation and Information Systems	KZ	3
	ortation means - principles, testing, evaluation. Safety of infrastructures, critical structures, crisis scenarios. Safety of information sys	1	
623Y1DZ	Data and Their Processing for Engineering Fields Needs	KZ	2
	sic terms, data collection, data sets, data random uncertainty and data epistemic uncertainty, data processing, hazard, risk, value so	1	1
	heuristic methods, hazard determination and risk determination, methods for variants' creation, decision support systems	-	•
623Y1KO	Quantum Physics and Optoelectronics	KZ	2
'	Ground of quantum physics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics compor		·
623Y1OK	Protection of Critical Objects and Infrastructures	KZ	2
	cal systems, critical item, risks and their courses, criticality, vulnerability, connectivity, dependability, resilience, failure, protection, safe	1	s and critical
	infrastructures.		
623Y1VS	Negotiation and Cooperation	KZ	2
	r negotiation. The influence of personality traits on the negotiations. Negotiation and commanding. Teamwork. Variants teams. Inform		
Principles of negoti	ation, the essence of negotiation, the differences in negotiation in business and in crisis situations, the principle of "win both", specifi	cations and bidding	g, the role of
	trust.		
TV-1	Physical Education	Z	1
TV-2	Physical Education	Z	1

For updated information see http://bilakniha.cvut.cz/en/FF.html Generated: day 13. 08. 2022, time 21:11.