Study plan

Name of study plan: LED bak.prez.18/19

Faculty/Institute/Others:

Department:

Branch of study guaranteed by the department: Air Transport Garantor of the study branch: doc. Ing. Peter Vittek, Ph.D.

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

The role of the block: ZP

Code of the group: XB 4,5,6 13/14

Name of the group: Projekty bak. 4.5.6.sem. 13/14

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)	Completion	Credits	Scope	Semester	Role
17X31	Tutors, authors and guarantors (gar.) Project 1 Rudolf Vávra, Petr Fridrišek, Dominik Mazel, Stanislav Metelka, Václav Baroch, Dušan Teichmann, Edvard Březina, Michal Drábek, Tomáš Horák,	Z	2	0P+1C	L	ZP
12X31	Project 1 Zuzana Čarská, Dagmar Kočárková, Karolína Moudrá, Kristýna Neubergová, Martin Jacura, Vojtěch Novotný, Ondřej Trešl, David Vodák, Tomáš Javořík,	Z	2	0P+1C	L	ZP
16X31	Project 1 Petr Bouchner, Přemysl Toman, Josef Mík	Z	2	0P+1C	L	ZP
18X31	Project 1 Daniel Kytýř, Tomáš Doktor, Jan Šleichrt	Z	2	0P+1C	L	ZP
11X31	Project 1	Z	2	0P+1C	L	ZP
22X31	Project 1 Michal Frydrýn, Luboš Nouzovský, Zdeněk Svatý, Karel Kocián	Z	2	0P+1C	L	ZP
14X31	Project 1 Jana Kaliková, Jan Krčál, Tomáš Zelinka, Martin Šrotýř, Zdeněk Lokaj, Tomáš Brandejský, Vít Fábera, Jan Zelenka, Ota Hajzler	Z	2	0P+1C	L	ZP
23X31	Project 1 Milena Macková	Z	2	0P+1C	L	ZP
20X31	Project 1 Patrik Horažďovský	Z	2	0P+1C	L	ZP
15X31	Project 1 Eva Rezlerová	Z	2	0P+1C	L	ZP
21X31	Project 1 Lenka Hanáková, Tereza Topková, Vladimír Socha, Helena Bínová, Jakub Hospodka, Šárka Hulinská, Iveta Kameníková, Jakub Kraus, Andrej Lališ,	Z	2	0P+1C	L	ZP
16X32	Project 2 Josef Mik, Petr Bouchner	Z	2	0P+2C	Z	ZP
15X32	Project 2 Eva Rezlerová	Z	2	0P+2C	Z	ZP
14X32	Project 2 Jana Kaliková, Jan Krčál, Tomáš Zelinka, Martin Šrotýř, Zdeněk Lokaj, Ota Hajzler, Eva Fantová, Filip Müller	Z	2	0P+2C	Z	ZP
12X32	Project 2 Zuzana Čarská, Dagmar Kočárková, Karolína Moudrá, Kristýna Neubergová, Martin Jacura, Vojtěch Novotný, Ondřej Trešl, David Vodák, Tomáš Javořík,	Z	2	0P+2C	Z	ZP

11X32	Durit of 0	7	2	0P+2C	Z	7P
11/32	Project 2			UFTZC		ZP
23X32	Project 2 Milena Macková, Václav Jirovský	Z	2	0P+2C	Z	ZP
22X32	Project 2 Michal Frydrýn, Luboš Nouzovský, Zdeněk Svatý, Karel Kocián, Tomáš Mičunek	Z	2	0P+2C	Z	ZP
21X32	Project 2	Z	2	0P+2C	Z	ZP
20X32	Project 2 Patrik Horažďovský, Jiří Růžička, Pavel Hrubeš, Martin Leso, Petr Bureš, Martin Langr	Z	2	0P+2C	Z	ZP
18X32	Project 2	Z	2	0P+2C	Z	ZP
17X32	Project 2 Václav Baroch, Dušan Teichmann, Edvard Březina, Michal Drábek, Tomáš Horák, Vít Janoš, Milan Kříž, Olga Mertlová, Zdeněk Michl,	Z	2	0P+2C	Z	ZP
23X33	Project 3	Z	2	0P+1C	L	ZP
20X33	Project 3	Z	2	0P+1C	L	ZP
12X33	Project 3 Zuzana Čarská, Dagmar Kočárková, Karolína Moudrá, Kristýna Neubergová, Martin Jacura, Vojtěch Novotný, Ondřej Trešl, David Vodák, Tomáš Javořík,	Z	2	0P+1C	L	ZP
22X33	Project 3 Michal Frydrýn, Luboš Nouzovský, Zdeněk Svatý, Karel Kocián	Z	2	0P+1C	L	ZP
14X33	Project 3 Tomáš Zelinka, Martin Šrotýř, Zdeněk Lokaj, Ota Hajzler	Z	2	0P+1C	L	ZP
16X33	Project 3 Petr Bouchner, Přemysl Toman, Josef Mík, Adam Orlický, Jaroslav Machan	Z	2	0P+1C	L	ZP
11X33	Project 3	Z	2	0P+1C	L	ZP
15X33	Project 3 Eva Rezlerová	Z	2	0P+1C	L	ZP
17X33	Project 3 Václav Baroch, Dušan Teichmann, Edvard Březina, Michal Drábek, Tomáš Horák, Vít Janoš, Milan Křiž, Olga Mertlová, Zdeněk Michl,	Z	2	0P+1C	L	ZP
21X33	Project 3 Lenka Hanáková, Vladimír Socha, Helena Bínová, Jakub Hospodka, Šárka Hulínská, Iveta Kameníková, Jakub Kraus, Andrej Lališ, Roman Matyáš,	Z	2	0P+1C	L	ZP
18X33	Project 3	Z	2	0P+1C	L	ZP

Characteristics of the courses of this group of Study Plan: Code=XB 4,5,6 13/14 Name=Projekty bak. 4.5.6.sem. 13/14

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

 18X33
 Project 3
 Z
 2

Name of the block: Compulsory courses Minimal number of credits of the block: 162

The role of the block: Z

Code of the group: 1.S.BP 17/18

Name of the group: 1.sem.bak.prez. od 17/18

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

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

Credits in the group: 30

note on the group	J.					
Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11CAL1	Calculus 1 Magdalena Hykšová, Ondřej Navrátil, Bohumil Kovář, Pavel Provinský, Tomáš Třasák, Olga Vraštilová	Z,ZK	7	2P+4C	Z	Z
11LA	Linear Algebra Pavel Provinský, Martina Bečvářová, Lucie Kárná, Jan Přikryl	Z,ZK	3	2P+1C	Z	Z
12ZYDI	Introduction to Transportation Engineering Zuzana Čarská, Dagmar Kočárková	Z,ZK	2	1P+1C	Z	Z
18MTY	Materials Science and Engineering Jan Šleichrt, Vit Malinovský, Jaroslav Valach, Jan Šleichrt, Marcel Adorna, Jan Falta, Jan Falta, Václav Rada, Václav Rada, Jaroslav Valach (Gar.)	Z,ZK	3	2P+1C	Z	Z
11GIE	Geometry Pavel Provinský, Oldřich Hykš, Šárka Voráčová	KZ	3	2P+2C	Z	Z
14ASD	Algorithm and Data Structures Zdeněk Lokaj, Vít Fábera, Jan Zelenka, Michal Jeřábek, Petr Hnyk	KZ	3	0P+2C	Z	Z
14KSP	Constructing with Computer Aid Filip Müller, Martin Brumovský, Lukáš Kozel, Radek Kratochvíl, Drahomír Schmidt, Lukáš Svoboda, Monika Stambolidis	KZ	2	0P+2C	Z	Z
18TED	Technical Documentation Vít Malinovský, Tomáš Fíla, Jitka Řezníčková	KZ	2	1P+1C	Z	Z
15DPLG	Transportation Psychology Jan Feit, Jana Štikarová	Z	2	2P+0C	Z	Z
16UDOP	Introduction into Vehicles Petr Bouchner, Přemysl Toman, Josef Mík, Zuzana Radová Petr Bouchner (Gar.)	Z	2	2P+0C	Z	Z
TV-1	Physical Education	Z	1		Z	Z

Characteristics	of the courses of this group of Study Plan: Code=1.S.BP 17/18 Name=1.sem.bak.prez. od 17	/18	
11CAL1	Calculus 1	Z,ZK	7
Sequence of real nur	mbers and its limit. Basic properties of mappings. Function of one real variable, its limit and derivative. Geometric properties of n	-dimensional Eukli	idean space and
Cartesian coordinate	system. Geometric meaning of the differential of functions several real variables, differential calculus of functions of several re	al variables.	
11LA	Linear Algebra	Z,ZK	3
Vector spaces (linear	r combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and	their solvability. D	eterminants and
their applications. So	calar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classification.		
12ZYDI	Introduction to Transportation Engineering	Z,ZK	2
Role of transportation	n in land-use planning. Basic terms in transportation engineering. Traffic survey and traffic prognosis. Introduction to topic of roac	ls, public mass tra	nsport. Negative
impacts of transporta	ation to environment and safety.		
18MTY	Materials Science and Engineering	Z,ZK	3
Basic course of mate	erials science and engineering explains mechanical properties of structural materials based on their bonding forces and microstru	icture. However th	e main attention
is paid to metals as t	he most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and	composites. Atten	ition is also paid
to degradation proce	sses in materials, to defectoscopy and to main mechanical tests.		
11GIE	Geometry	KZ	3
Orthographic and ob	lique projections, linear perspective. Topographic surfaces and their orthogonal projection. Differential geometry of curves - par	ameterization, arc	of the curve,
torsion and curvature	Frenct's tribedron. Kinematics - a curve as a trajectory of the motion, the velocity and acceleration of a particle moving on a c	nurved nath	

torsion and curvature, Frenet's trihedron. Kinematics - a curve as a trajectory of the motion, the velocity and acceleration of a particle moving on a curved path.

14ASD Algorithm and Data Structures

Students will be familiarized with selected basic and derived data structures, algorithms, their properties and their design procedure. Students will analyze problems, propose theoretical students will be 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 Replace.

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.

14KSP Constructing with Computer Aid

"CAD systems" term determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic common work rules in graphic applications and CA systems. Co-ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting possibilities, AutoCAD environment profiles, drawings with raster foundaments).

18TED Technical Documentation KZ 2
Technical standards, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional and geometrical accuracy, arrangement of drawing sheets.

15DPLG	Transportation Psychology	Z 2				
Subject of psychology and its basic concepts. Information intake, decision-making and behaviour. Performance. Engineering psychology and vehicle construction. Psychological 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 transport operation.						
16UDOP Introduction into Vehicles Z 2						
Vehicles and transporta	tion systems. Functionality and setup. Movement and drive principles. Engines and their characteristics. Rail, road, air and v	vater transport. Al	ternative means			
of transport. Lifting equipment and conveyors. Legislation.						
TV-1	Physical Education	Z	1			

Code of the group: 2.S.BP 17/18

Name of the group: 2.sem.bak.prez. od 17/18

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

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

Credits in the group: 30 Note on the group:

21ZALD

Airlines and economics. Space technologies.

Basics of Air Transport

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their	Completion	Credite	Scope	Semester	Role
	members) Tutors, authors and guarantors (gar.)	Completion	Oreans	Осоре	Ocinic Ster	Noic
11CAL2	Calculus 2 Magdalena Hykšová, Ondřej Navrátil, Tomáš Třasák, Olga Vraštilová, Martina Bečvářová, Oldřich Hykš Magdalena Hykšová Ondřej Navrátil (Gar.)	Z,ZK	5	2P+3C+20B	L	Z
11STAT	Statistics Pavel Provinský, Šárka Voráčová, Ivan Nagy, Pavla Pecherková, Evženie Uglickich, Šárka Jozová Ivan Nagy	Z,ZK	4	2P+2C+12B	L	Z
12ZTS	Railway Lines and Stations Martin Jacura, Vojtěch Novotný, Ondřej Trešl, Tomáš Javořík, Lukáš Týfa, Martin Vaněk	Z,ZK	4	2P+2C+10B	L	Z
18SAT	Structural Analysis Daniel Kytýř, Tomáš Doktor, Jan Šleichrt, Marcel Adorna, Jan Falta, Václav Rada, Václav Rada, Jitka Řezníčková, Jan Vyčichl,	Z,ZK	4	2P+2C+14B	L	Z
20SYSA	Systems Analysis Jiří Růžička, Petr Bureš, Zuzana Bělinová	Z,ZK	5	2P+2C+14B	L	Z
14PRG	Programming Jana Kaliková, Martin Šrotýř, Zdeněk Lokaj, Vít Fábera, Jan Zelenka, Michal Jeřábek, Lukáš Svoboda, Radek Holý, Marek Kalika Jana Kaliková (Gar.)	KZ	2	0P+2C+8B	L	Z
17TEDL	Transport Technology and Logistics Michal Drábek, Vít Janoš, Milan Kříž, Zdeněk Michl, Jiří Pospíšil	KZ	3	2P+1C	L	Z
21ZALD	Basics of Air Transport Tereza Topková, Michaela Šerlová, Sébastien Lán, Sarah Van Den Bergh, Adam Kleczatský	KZ	2	0P+2C+8B	L	Z
TV-2	Physical Education	Z	1		L	Z

	the courses of this group of Study Plan: Code=2.S.BP 17/18 Name=2.sem.bak.prez. od 17/		
11CAL2	Calculus 2	Z,ZK	5
Antiderivative, Newtoni	n integral, Riemannian integral of the function of one variable, improper Riemannian integral, Riemannian integral in Rn. Pa	ametric description	on of regular
k-dimensional surfaces	in Rn, Riemannian integral over regular surfaces. Line and surface integrals of the second type, Stokes theorems, ordinary d	ifferential equation	ons of the first
order, linear differential	equations with constant coefficients and its systems.		
11STAT	Statistics	Z,ZK	4
Definition of probability,	random variable and its description, known distributions, random vector, function of random variable. Methods of point estimatio	n. Testing of statis	stical hypothesis.
Regression and correla	tion, linear regression, correlation coefficient, coefficient of determination, the general linear model, statistical inference in linea	r regression, anal	lysis of variance,
multiple regression, the	use of matrices in regression.		
12ZTS	Railway Lines and Stations	Z,ZK	4
Rail transport. Railway	track geometry parameters. Route layout of railway lines. Railway line construction - railway substructure and superstructure.	Spatial layout of	railway lines.
Railway control system	s in relation to infrastructure. Operating and carriage points. Railway lines net and category. Traction in rail transport.		
18SAT	Structural Analysis	Z,ZK	4
General system of forc	s in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determina	ite beams and sir	mple girders.
Principle of virtual work	Kinematic method for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction	ns. Cross-section	al characteristics
of planar shapes. Fiber	polygons and chains.		a. oa. ao.ooo.
0001/04			ar criaractorious
20SYSA	Systems Analysis	Z,ZK	5
	Systems Analysis ciences, system viewpoint, terminology, typical system analysis tasks, system identification, system interface and interface tas	,	5
Introduction to system	, , , , , , , , , , , , , , , , , , ,	sks, processes, s	5 ystem behaviour
Introduction to system and its analysis, strong	ciences, system viewpoint, terminology, typical system analysis tasks, system identification, system interface and interface tasks.	sks, processes, s	5 ystem behaviour
Introduction to system and its analysis, strong	ciences, system viewpoint, terminology, typical system analysis tasks, system identification, system interface and interface tas functions and processes, genetic code, system identity, system architecture. Tools for system analysis - Petri nets, decision t	sks, processes, s	5 ystem behaviour
Introduction to system and its analysis, strong tasks. Soft and hard sy	ciences, system viewpoint, terminology, typical system analysis tasks, system identification, system interface and interface tas functions and processes, genetic code, system identity, system architecture. Tools for system analysis - Petri nets, decision t stems, methods for soft system analysis.	sks, processes, sables, algorithms	5 ystem behaviour for structural
Introduction to system and its analysis, strong tasks. Soft and hard sy 14PRG Algorithm development	ciences, system viewpoint, terminology, typical system analysis tasks, system identification, system interface and interface tast functions and processes, genetic code, system identity, system architecture. Tools for system analysis - Petri nets, decision to stems, methods for soft system analysis. Programming	sks, processes, sables, algorithms	5 ystem behaviour for structural
Introduction to system and its analysis, strong tasks. Soft and hard sy 14PRG Algorithm development	ciences, system viewpoint, terminology, typical system analysis tasks, system identification, system interface and interface tast functions and processes, genetic code, system identity, system architecture. Tools for system analysis - Petri nets, decision to stems, methods for soft system analysis. Programming	sks, processes, sables, algorithms	5 ystem behaviour for structural
Introduction to system and its analysis, strong tasks. Soft and hard sy 14PRG Algorithm development functions), programmir 17TEDL	ciences, system viewpoint, terminology, typical system analysis tasks, system identification, system interface and interface tast functions and processes, genetic code, system identity, system architecture. Tools for system analysis - Petri nets, decision to stems, methods for soft system analysis. Programming methods of structured programming, high-level programming languages, basics of C programming languages (types, variable g techniques, complexity.	sks, processes, stables, algorithms KZ les, conditions, ct	5 ystem behaviour for structural 2 ycles, arrays,

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. **Physical Education**

Code of the group: 3.S.BP 18/19

Name of the group: 3.sem.bak.prez. od 18/19

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

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

Credits in the group: 30 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11FYZ	Physics Zuzana Malá, Tomáš Vítů, Antonio Cammarata, Kosta Simonovic, Paolo Nicolini, Marek Honců Zuzana Malá (Gar.)	Z,ZK	5	2P+2C	Z	Z
12MDE	Transport Models and Transport Excesses Josef Kocourek, Milan Dont	Z,ZK	3	2P+1C	Z	Z
17TGA	Graph Theory and its Applications in Transport Dušan Teichmann, Denisa Mocková, Alena Rybičková Alena Rybičková (Gar.)	Z,ZK	4	2P+2C	Z	Z
18PZP	Elasticity and Strength Daniel Kytýř, Tomáš Doktor, Jan Šleichrt, Jan Šleichrt, Marcel Adorna, Jan Falta, Jan Falta, Jitka Řezníčková, Jan Vyčichl, Ondřej Jiroušek (Gar.)	Z,ZK	3	2P+1C	Z	Z
20UITS	Introduction to Intelligent Transport Systems Tomáš Zelinka, Patrik Horažďovský, Jiří Růžička, Pavel Hrubeš, Martin Langr, Zuzana Purkrábková, Vladimír Faltus Vladimír Faltus (Gar.)	Z,ZK	7	3P+2C	Z	Z
12PPOK	Designing Roads, Highways and Motorways Jiří Čarský, Tomáš Padělek, Jan Gallia, Petr Kumpošt, Petr Šatra	KZ	3	1P+2C	Z	Z
14DATS	Database Systems Jana Kaliková, Jan Krčál, Martin Šrotýř Jana Kaliková (Gar.)	KZ	2	1P+1C	Z	Z
15JZ1A	Foreign Language - English 1 Eva Rezlerová, Jan Feit, Klára Lancová, Lenka Monková, Marie Michlová, Jitka Heřmanová, Dana Boušová, Barbora Horáčková, Marek Tomeček, Jitka Heřmanová (Gar.)	Z	3	0P+4C	Z	Z

11FYZ	Physics	Z,ZK	5
Kinematics, particle	dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermodynamics.	' '	
12MDE	Transport Models and Transport Excesses	Z,ZK	3
Parameters of the t	affic flow and methods for their measurement. Models of the traffic flow, communications load, line and urban systems. Theory	of queues, shock w	aves. Quality
ransport and its as	sessment. Statistical characteristics of transport. Transport excesses, their analysis, the causes, identify and minimize the cons	sequences. Improvir	ng of transport
safety and fluency.			
17TGA	Graph Theory and its Applications in Transport	Z,ZK	4
3asic terms of grap	n theory, paths in graphs, flows in networks, location problems, design problems on graphs, optimum routing, use of graphs in	other scientific disci	plines.
18PZP	Elasticity and Strength	Z,ZK	3
Tension and compr	ssion. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam. Design of riveted,	bolted and welded j	oint of structure
Analysis of deflection	n curve of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Beam on elastic	foundation. Strengt	h analysis.
20UITS	Introduction to Intelligent Transport Systems	Z,ZK	7
Terminology and leg	islative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamentals o	f information and tel	ecommunicatio
systems for ITS. Pr	nciples and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real exar	nalog of accepble or	
•		libies of bossible at	plications of th
principles of ITS.		Tiples of possible ap	plications of th
•	Designing Roads, Highways and Motorways	KZ	plications of th
12PPOK	Designing Roads, Highways and Motorways reship, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and star	KZ	3
12PPOK Definition, types, or		KZ	3 in rural areas.
12PPOK Definition, types, or Range of vision for	mership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and star	KZ	3 in rural areas.
12PPOK Definition, types, or Range of vision for intersections.	mership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and star	KZ	3 in rural areas.
12PPOK Definition, types, or Range of vision for intersections. 14DATS	rnership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and star stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads.	KZ dard speed. Route Safety device. Cros	3 in rural areas. sings, junctions
12PPOK Definition, types, or Range of vision for ntersections. 14DATS Basic concepts of d	rnership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and star stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Database Systems	KZ dard speed. Route Safety device. Cros	3 in rural areas. sings, junction:
12PPOK Definition, types, or Range of vision for intersections. 14DATS Basic concepts of d relational algebra, \$1	rnership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and star stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Database Systems tabase systems, conceptual model, relational data model, the principles of normal forms, relational database design, security and	KZ dard speed. Route Safety device. Cros	3 in rural areas. sings, junction
12PPOK Definition, types, or Range of vision for intersections. 14DATS Basic concepts of d relational algebra, 3 15JZ1A	nership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and star stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Database Systems Itabase systems, conceptual model, relational data model, the principles of normal forms, relational database design, security and QL language, client / server, multilayer architectures, distributed database systems. Access to data via the WWW.	KZ dard speed. Route Safety device. Cros KZ d integrity of data, da	3 in rural areas. sings, junction 2 atabase querie

Code of the group: 4.S.BLED 16/17

Name of the group: 4.sem.LED bak.prez. (od) 16/17

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

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

Credits in the group: 26 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11MSP	Modeling of Systems and Processes Bohumil Kovář, Lucie Kárná, Jan Přikryl, Marek Honců, Elena Alexeeva Bohumil Kovář Bohumil Kovář (Gar.)	Z,ZK	4	2P+2C+12E	B L	Z
21LTN	Air Navigation Radoslav Zozulák, Ladislav Keller	Z,ZK	2	2P+1C+12E	B L	Z
21LTTE	Aerodromes Roman Vokáč, Ladislav Capoušek, Petr Líkař Ladislav Capoušek Roman Vokáč (Gar.)	Z,ZK	4	2P+1C+12E	B L	Z
21ZYL1	Principles of Flight 1 Roman Matyáš, Přemysl Vávra, Lukáš Matějka, Václav Brož, Stanislav Kušmírek, Stanislav Absolon, Michala Poštová, Tatiana Tsykina	Z,ZK	5	2P+2C+16E	B L	Z
21LL1	Aircraft 1 Roman Matyáš, Vladimír Plos, Ladislav Keller, Anna Kačeriaková Ladislav Keller	KZ	3	2P+1C+10E	B L	Z
21MRG	Meteorology Iveta Kameniková	KZ	3	1P+1C+10E	B L	Z
21ULCT	Aircraft Maintenance Roman Matyáš, Kateřina Kunčíková	Z	2	2P+0C+8E	B L	Z
15JZ2A	Foreign Language - English 2 Eva Rezlerová, Jan Feit, Lenka Monková, Marie Michlová, Jitka Heřmanová, Dana Boušová, Barbora Horáčková, Marek Tomeček, Peter Morpuss,	Z,ZK	3	0P+4C+10E	L	Z

Characteristics of the courses of this group of Study Plan: Code=4.S.BLED 16/17 Name=4.sem.LED bak.prez. (od) 16/17

11MSP	Modeling of Systems and Processes	Z,ZK	4	l		
Mathematical methods	and algorithms as a basis for system analysis. Methods for modelling and evaluating the systems in continuous and discrete	time domain. Lap	olace transform,	ı		
z-transform, and the recursive algorithms in solution of differential and difference equations, as an instrument for system description. Practical use of technical computing environment						
(MATLAB).				ı		

21LTN Air Navigation Z,ZK 2 Earth - its shape, parameters and properties. Aeronautical charts and their use. Measuring time. Dead reckoning. Radionavigation aids. Global navigation satellite systems. Air traffic

services routes and their design.

21LTTE Aerodrome reference point and temperature, TORA, TODA, ASDA, LDA. Taxiway and apron. Clearway. Stopway. Obstacle limitation surfaces. Runway marking. Runway zone lights. Environmental conditions. Public traffic

21ZYL1 Principles of Flight 1 Z.ZK

Aerodynamic drag, relation between drag and speed, streamline, boundary layer, formula of continuity, formula of Bernoulli, lift and drag, air flow and pressures around wing, angle of attack, reactions of wing in air flow, lift and drag of a wing and an aircraft, coefficient of lift and drag, critical angle of attack, wing with final span, induced drag, interference, devices for lift and drag increase.

21LL1 Aircraft 1 ΚZ

Aircraft structural and conceptual design types - definitions and basic knowledge of the problem. Development of requirements, aircraft definitions and categorisation. Aircraft loadings Systems of primary and secondary airframe structure. Airframe and propulsion unit. Lectures are devoted to aeroplane topics.

21MRG

ΚZ 3 Meteorology

Structure of atmosphere. Vertical stratification. Pressures QNH, QFE, QFF, QME. Instability. Atmospherical fronts. Atmospherical rainfall, origin fission. Turbulence. Powers causing wind. Cyclone and anticyclone. Gradient wind. Geostrofical and geocyklostrofical wind. Visibilities in air transport. Dangerous meteorological aspects. Meteorological maps. Climatology. Circulation. Intertropical front. Meteorological informations

21ULCT Aircraft Maintenance Ζ 2

3

Aircraft operations and technical operations. Maintenance and work processes. Defects search methods, status check diagnostic tools. Selection and qualification of aviation personnel. Basic documentation for maintenance. Optimization of time maintenance intervals. Regulation no. 1321/2014 Part 145. Human factors of aircraft maintenance. Regulation of director EASA for aircraft maintenance. Seminars will be focused on practical application.

15JZ2A Foreign Language - English 2 Z.ZK

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: 5.S.BLED 19/20

Name of the group: 5.sem.LED bak.prez. (od) 19/20

Requirement credits in the group: In this group you have to gain 23 credits

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

Credits in the group: 23 Note on the group:

Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their Code Completion Credits Scope Semester Role members) Tutors, authors and guarantors (gar.) **Aircraft Engines** 21LCM Roman Matyáš, Kateřina Kunčíková, František Straka, Daniel Hanus, Pavel Valenta Daniel Hanus (Gar.) 3 2P+1C Ζ Z,ZK Ζ Legislation and Operational Regulations Ζ 21LGP Z,ZK 5 2P+2C Z Peter Vittek, Tomáš Pustina, Adéla Zmeškalová Peter Vittek (Gar.)

21LTA2	Aircraft 2 Roman Matyáš, Ladislav Keller, Tomasz Balcerzak, Anna Kačeriaková Anna Kačeriaková (Gar.)	Z,ZK	2	2P+1C	Z	Z
21ZT	ATM Systems Tereza Topková, Stanislav Pleninger	ZK	2	2P+0C	Z	Z
21ZYL2	Principles of Flight 2 Lenka Hanáková, Jakub Hospodka, Roman Matyáš, Přemysl Vávra, Lukáš Matějka, Václav Brož, Stanislav Absolon Václav Brož (Gar.)	Z,ZK	5	2P+2C	Z	Z
21LAG1	English for Aviation 1 Andrej Lališ, Slobodan Stojić, Sarah Van Den Bergh, Václav Brož Andrej Lališ (Gar.)	KZ	3	0P+2C	Z	Z
21PDLE	Airport Design and Operation Petr Likař	KZ	3	1P+1C	Z	Z

Characteristics of the courses of this group of Study Plan: Code=5.S.BLED 19/20 Name=5.sem.LED bak.prez. (od) 19/20

21LCM	Aircraft Engines	Z,ZK	3
Aircraft piston engi	ne, theoretical background, operational characteristics and construction schemes. Propellers, operational characterictics. Turbir	e engine, theoretic	al background,
thermal cycles, con	nstruction schemes, operational characteristics. Turbojet and turbofan engines, basic construction modules, and their operationa	I characteristics. Er	ngine control.
21LGP	Legislation and Operational Regulations	Z,ZK	5
Introduction into av	iation regulations. The scope of international and national organizations in civil aviation. Analysis and interpretation of the ICAO	Annexes 1-19, ICA	O Docs. 4444
7030, 8168. Introdu	uction to the European Parliament and Council Regulation (EC), Commission Regulation (EU) and the Decisions of the Executiv	e Director of EASA	-
21LTA2	Aircraft 2	Z,ZK	2
Manufacturers resp	onsibility, responsibilities of operator and professional supervising. Legislation in area of airworthiness. International and nationa	l standards. Static s	olidity of aircra
structures. Aeroela	sticity. Inherent and operational reliability of aircraft structure. Fatique strength. Aircraft structure lifetime presumption.		
21ZT	ATM Systems	ZK	2
21ZT			2 as far as
21ZT The course introdu	ATM Systems		2 as far as
21ZT The course introdu communication, na	ATM Systems ces classical and modern facilities, systems and technologies designated for ATS. Student obtains knowledge of technical prince		2 as far as
21ZT The course introdu communication, na 21ZYL2	ATM Systems ces classical and modern facilities, systems and technologies designated for ATS. Student obtains knowledge of technical princ vigation and surveillance aviation systems are concerned.	iples and solutions	5
21ZT The course introducommunication, na 21ZYL2 Ways of producing	ATM Systems ces classical and modern facilities, systems and technologies designated for ATS. Student obtains knowledge of technical principation and surveillance aviation systems are concerned. Principles of Flight 2	Z,ZK	5 nodes, propelle
21ZT The course introducommunication, na 21ZYL2 Ways of producing airstream effect, gy	ATM Systems ces classical and modern facilities, systems and technologies designated for ATS. Student obtains knowledge of technical principles of Flight 2 thrust, propeller, jet propulsion, thrust and momentum, propulsion efficiency, aerodynamics of fixed and variable pitch propeller, proscopic effect, balance of forces in horizontal flight, glide and landing, performances, take off an climb, acceleration, positive locations.	Z,ZK	5 nodes, propelle
21ZT The course introducommunication, na 21ZYL2 Ways of producing airstream effect, gycontrollability, trans	ATM Systems ces classical and modern facilities, systems and technologies designated for ATS. Student obtains knowledge of technical principles of Flight 2 thrust, propeller, jet propulsion, thrust and momentum, propulsion efficiency, aerodynamics of fixed and variable pitch propeller, proscopic effect, balance of forces in horizontal flight, glide and landing, performances, take off an climb, acceleration, positive locations.	Z,ZK	5 nodes, propelle
21ZT The course introducommunication, na 21ZYL2 Ways of producing airstream effect, gycontrollability, trans 21LAG1	ATM Systems ces classical and modern facilities, systems and technologies designated for ATS. Student obtains knowledge of technical principles of Flight 2 thrust, propeller, jet propulsion, thrust and momentum, propulsion efficiency, aerodynamics of fixed and variable pitch propeller, proscopic effect, balance of forces in horizontal flight, glide and landing, performances, take off an climb, acceleration, positive lossonic speeds.	Z,ZK propeller operation nad, manoevures, st	5 nodes, propelle
21ZT The course introducommunication, na 21ZYL2 Ways of producing airstream effect, gycontrollability, trans 21LAG1 Familiarity with the	ATM Systems ces classical and modern facilities, systems and technologies designated for ATS. Student obtains knowledge of technical principles of Flight 2 thrust, propeller, jet propulsion, thrust and momentum, propulsion efficiency, aerodynamics of fixed and variable pitch propeller, proscopic effect, balance of forces in horizontal flight, glide and landing, performances, take off an climb, acceleration, positive lossonic speeds. English for Aviation 1	Z,ZK propeller operation nad, manoevures, st	5 nodes, propelle
21ZT The course introdu communication, na 21ZYL2 Ways of producing airstream effect, gy controllability, trans 21LAG1 Familiarity with the 21PDLE	ATM Systems ces classical and modern facilities, systems and technologies designated for ATS. Student obtains knowledge of technical principles of Flight 2 thrust, propeller, jet propulsion, thrust and momentum, propulsion efficiency, aerodynamics of fixed and variable pitch propeller, proscopic effect, balance of forces in horizontal flight, glide and landing, performances, take off an climb, acceleration, positive lossonic speeds. English for Aviation 1 terminology used in civil aviation in the general context and emphasizing the ability to receive information only in English.	Z,ZK propeller operation nad, manoevures, st	5 nodes, propelle ability and 3

Code of the group: 6.S.BLED 19/20

Name of the group: 6.sem.LED bak.prez. 19/20

Requirement credits in the group: In this group you have to gain 23 credits

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

Credits in the group: 23 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
21ELED	Air Transport Economy Peter Vittek, Radoslav Zozuľák	Z,ZK	4	2P+2C+14E	B L	Z
21LIVO	Human Performance and Limitations Lenka Hanáková, Vladimír Socha, Roman Matyáš, Ľubomír Háčik	Z,ZK	5	2P+2C+14E	B L	Z
210BP	Airline Business and Operations Ladislav Capoušek, Tatiana Tsykina	Z,ZK	3	2P+1C+12E	B L	Z
21PAP	Flight Planning and Performance Ota Hajzler, Roman Matyáš	Z,ZK	4	2P+2C+14E	B L	Z
21LAG2	English in Aviation 2 Andrej Lališ, Slobodan Stojić, Sarah Van Den Bergh Andrej Lališ (Gar.)	KZ	3	0P+2C+10E	B L	Z
21PJE	Aircraft Instruments Pavel Hovorka	KZ	2	2P+0C+8E	B L	Z
21RILP	Air Traffic Control Miloš Strouhal	Z	2	0P+2C+8E	B L	Z

Characteristics of the courses of this group of Study Plan: Code=6.S.BLED 19/20 Name=6.sem.LED bak.prez. 19/20

21ELED Air Transport Economy
Economic benefits of air transport. Costs of airline. Revenue management. Fuel management. Currencies development. Demand and supply. Rates in air transport. Aircraft selection. Fleet asignment. Aging of aircraft. Airlines bankrupcty. Crew planning. Marketing in Air Transport. Cargo tariff and rates. Air network configuration.

21LIVO Human Performance and Limitations

Z,ZK

5

Human performace & amp; limitations, aptibility & amp; competence, accident statistics, flight safety, basics of flight physiology, man & amp; environment, breathing & amp; circulation, sensory system, health & amp; hygiene, health preservation, intoxication, incapacitation, basics of flight psychology, human information processing, memory & amp; learning, theory & amp; model of human error, body rhythms & amp; sleep, stress, fatigue, working methods.

210BP	Airline Business and Operations	Z,ZK	3
Airline business and	operation abbreviations and terminology. Civil aviation structure in the Czech republic. Act No. 49/1997 Coll., on civil aviation. A	Air transport regula	tions ICAO, EU
	JAA, EUROCONTROL. Air operators. Air transport distribution. Global distribution and reservation systems. Agreements among assenger and cargo air transport.	g air operators. Ai	r traffic manuals
21PAP	Flight Planning and Performance	Z,ZK	4
Mass and balance. L	oad of aircraft. Determination of centre of gravity - loadsheet, trimsheet. Aircraft weighing. Overloading of aircraft. Basic characterist	tic speeds. Runwa	y characteristics.
Take off and landing	performance. Drift down. ETOPS. MEL. Flight planning and monitoring. Routing. FL and speeds selection. Charts. ICAO ATC FP	L. Aerodrom oper	ation minimums.
Fuel plan. Operation	nal flight plan.		
21LAG2	English in Aviation 2	KZ	3
Terminology in the s	phere of aircraft construction, principles of flight, aircraft engines, instruments and systems.		
21PJE	Aircraft Instruments	KZ	2
Overview of aircraft	instrumentation and its principles and construction, aircraft electrical systems, engine measuring and monitoring systems, air da	ata computer, icing	monitoring
systems, gyroscopio	indicators, inertial and radio navigation means, communication means, data recorders, complex flight and navigation data proc	essing systems.	
21RILP	Air Traffic Control	Z	2
Air traffic services a	nd their distribution. Organization of air traffic, flow and capacity management. Airspace management. System support for aircra	ft flying through sp	ace. Flight plan,
the form, content. S	eparation of aircraft. Reports of air traffic services, the form, content. Harmonization and integration of ATC. CFMU and its subst	ystems. Flexible u	se of airspace -
FIIA RVSM RNP I	New trends in the area of ATC		

Name of the block: Compulsory elective courses

Minimal number of credits of the block: 6

The role of the block: PV

Code of the group: Y1-BLED 18/19

Name of the group: PVP bak.prez.LED 18/19

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

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

Credits in the group: 6 Note on the group:

	Name of the course / Name of the group of courses					
Code	(in case of groups of courses the list of codes of their members)	Completion	Credits	Scope	Semester	Role
	Tutors, authors and guarantors (gar.)					
20Y1AF	Alternative Forms of Transportation Project Financing Mária Jánešová	KZ	2	2P+0C	Z	PV
18Y1AM	Anatomy, Mobility and Safety of Man	KZ	2	2P+0C	Z	PV
14Y1AV	Animation and Visualization	KZ	2	2P+0C	L	PV
20Y1AE	Applied Electronics Tomáš Musil	KZ	2	2P+0C	Z	PV
14Y1BE	Barrierless Transport Jan Krčál	KZ	2	2P+0C	L	PV
21Y1BC	Aviation safety and security Andrej Lališ, Slobodan Stojić, Roman Vokáč, Markéta Šedivá Kafková	KZ	2	2P+0C	L	PV
15Y1BO	Work Safety and Health Protection in Transportation Eva Rezlerová, Jan Feit, Petr Musil	KZ	2	2P+0C	L	PV
21Y1BS	Unmanned aircraft systems 1 Šárka Hulínská, Adam Kleczatský, Ladislav Keller, Stanislav Kušmírek	KZ	2	2P+0C	L	PV
14Y1BM	Biometric Methods	KZ	2	2+0	Z	PV
23Y1DZ	Data and Their Processing for Engineering Fields Needs	KZ	2	2+0	Z	PV
12Y1DS	Project Documentation in Practice	KZ	2	2+0	Z	PV
15Y1DZ	History of Railway Martin Jacura, Eva Rezlerová, Jan Feit	KZ	2	2P+0C	L	PV
20Y1EK	Qualification in Electrical Engineering Jindřich Sadil	KZ	2	2P+0C	L	PV
16Y1EN	Energy Requirements of Vehicles Jaroslav Opava	KZ	2	2P+0C	L	PV
20Y1EA	Environmental Aspects of Transport	KZ	2	2+0	Z	PV
15Y1EH	European Integration within Historical Context Eva Rezlerová, Jan Feit	KZ	2	2P+0C	Z	PV
18Y1EM	Experimental Methods in Mechanics Daniel Kytýř, Stanislav Hračov	KZ	2	2P+0C	Z	PV
21Y1FN	Factors Affecting the Rate of Accidents in Aviation	KZ	2	2+0	Z	PV
15Y1FD	French Area Studies and Transportation Irena Veselková	KZ	2	2P+0C	L	PV
14Y1HW	Computer Hardware Vit Fábera	KZ	2	2P+0C	L	PV
15Y1HL	History of Air Transport Eva Rezlerová, Jakub Kraus, Vladimír Plos, Jan Feit	KZ	2	2P+0C	L	PV

15Y1HD	History of City Mass Transport	KZ	2	2+0	Z	PV
12Y1HD	Traffic Noise Libor Ládyš	KZ	2	2P+0C	L	PV
15Y1HE	Work Hygiene and Ergonomics in Traffic	KZ	2	2P+0C	Z	PV
16Y1IS	Eva Rezlerová, Jan Feit, Petr Musil Interactive Systems and Simulations	KZ	2	2P+0C	L	PV
12Y1KN	Combined Transportation	KZ	2	2+0	Z	PV
23Y1KO	Quantum Physics and Optoelectronics	KZ	2	2P+0C	L	PV
21Y1LA	Aerobatics	KZ	2	2+0	L	PV
21Y1LR	Radio Technology in Aviation	KZ	2	2+0	L	PV
17Y1LL	Logistics of Passenger and Freight Air Transport Petra Skolilová	KZ	2	2P+0C	L	PV
20Y1LN	Location and Navigation Petr Bureš	KZ	2	2P+0C	L	PV
21Y1MZ	Managerial Ethics	KZ	2	2+0	Z	PV
17Y1MD	Marketing in Transportation Petra Skolilová	KZ	2	2P+0C	Z	PV
11Y1MM	Mathematical Models in Economy	KZ	2	2P+0C	Z	PV
18Y1MT	Engineering Materials Jaroslav Valach	KZ	2	2P+0C	L	PV
21Y1MP	Matlab for project-oriented study Lenka Hanáková, Vladimír Socha	KZ	2	2P+0C	Z	PV
14Y1MP	Modeling Complex Assemblies and Models in Parametric Modeller	KZ	2	2+0	Z	PV
15Y1MK	Modern History in Context: Every Day Life and Transport Eva Rezlerová, Jan Feit, Marie Michlová	KZ	2	2P+0C	L	PV
15Y1NE	German in the Economy and Society	KZ	2	2+0	Z	PV
23Y1OK	Protection of Critical Objects and Infrastructures	KZ	2	2P+0C	L	PV
20Y1OI	Fare Collection and Information Systems Milan Sliacky	KZ	2	2P+0C	L	PV
14Y1OP	Operating System	KZ	2	2+0	Z	PV
17Y10F	Personal Finance	KZ	2	2+0	Z	PV
11Y1PV	Parametrical and Multicriterial Programming	KZ	2	2+0	Z	PV
17Y1PM	Personnel Management	KZ	2	2P+0C	L	PV
14Y1PI	Corporate Information System	KZ	2	2+0	Z	PV
14Y1PZ	Advanced Data Processing in Spreadsheets	KZ	2	2P+0C	Z	PV
12Y1PD	Assessment of Transport Structures Kristýna Neubergová	KZ	2	2P+0C	Z	PV
14Y1PG	Computer Graphics	KZ	2	2P+0C	L	PV
14Y1P2	Computer Aid of Transportation Projecting 2	KZ	2	2P+0C	Z	PV
18Y1PS	Computer Simulations in Mechanics Petr Zlámal	KZ	2	2P+0C	L	PV
20Y1PK	Product Quality Management Processes Martin Leso	KZ	2	2P+0C	Z	PV
14Y1PJ	C Programming Language	KZ	2	2P+0C	Z	PV
12Y1C1	Designing Roads in Civil 3D I Tomáš Honc	KZ	2	2P+0C	L	PV
12Y1C2	Designing Roads in Civil 3D II Tomáš Honc	KZ	2	2P+0C	Z	PV
14Y1PA	3D Modeling in AutoCAD	KZ	2	2+0	Z	PV
16Y1PV	Operation, Construction and Maintenance of Vehicles	KZ	2	2P+0C	L	PV
12Y1PU	Organization Disposition of Railway Stations Martin Jacura	KZ	2	2P+0C	L	PV
12Y1PC	Pedestrian and Cycling Transport	KZ	2	2P+0C	L	PV
17Y1ST	Titan Simulation	KZ	2	2P+0C	L	PV
20Y1SC	Sensors and Actuators Pavel Hrubes	KZ	2	2P+0C	L	PV
17Y1SL	Sociology of Human Resources	KZ	2	2+0	Z	PV
11Y1SI	Transportation Software Engineering	KZ	2	2+0	Z	PV
22Y1SZ	Forensic Expertise	KZ	2	2P+0C	L	PV
16Y1KS	Quality and Reliability of Vehicles Jaroslav Machan	KZ	2	2P+0C	Z	PV
12Y1SU	Road Management and Maintenance Martin Höfler, Otakar Vacin	KZ	2	2P+0C	L	PV

21Y1TH	Aircraft Technical Handling Anna Polánecká	KZ	2	2P+0C	Z	PV
11Y1TG	Graph Theory	KZ	2	2P+0C	L	PV
14Y1TI	Creating Interactive Internet Applications	KZ	2	2P+0C	L	PV
12Y1VC	Waterways and Shipping	KZ	2	2+0	Z	PV
23Y1VS	Negotiation and Cooperation	KZ	2	2+0	Z	PV
14Y1VM	Development of Applications for Mobile Devices	KZ	2	2+0	Z	PV
16Y1VT	Development in Railroad Vehicles Jaroslav Opava	KZ	2	2P+0C	L	PV
14Y1W1	Webdesign 1	KZ	2	2+0	Z	PV
14Y1W2	Webdesign 2	KZ	2	2P+0C	L	PV
16Y1ZL	Vehicle Testing, Legislation and Construction Josef Mik	KZ	2	2P+0C	Z	PV
16Y1ZG	Introduction into Applied Computer Graphics Adam Orlický, Stanislav Novotný	KZ	2	2P+0C	L	PV
14Y1ZM	Fundamentals of Parametric and Adaptive Programming	KZ	2	2P+0C	L	PV
11Y1ZM	Foundation of MATLAB Programming	KZ	2	2P+0C	L	PV
12Y1ZU	Principles of Urbanism Karel Hájek	KZ	2	2P+0C	Z	PV
15Y1ZV	East-West dichotomy: Prelude to the Cold War Eva Rezlerová, Jan Feit, Marie Michlová	KZ	2	2P+0C	Z	PV
21Y1UT	Airports Maintenance	KZ	2	2+0	L	PV
14Y1UP	Editing of Theses in MS Word	KZ	2	2P+0C	L	PV
18Y1UK	Introduction of Rail Vehicles Josef Kolář	KZ	2	2P+0C	L	PV
16Y1RE	Control and Electronic Vehicle Systems Josef Mik, Jiří First	KZ	2	2P+0C	Z	PV
21Y1RZ	Human Resources Management Šárka Hulínská	KZ	2	2P+0C	L	PV

	Human Resources Management Šárka Hulínská	KZ	2	2P+0C	L	PV
`havaatariatiaa af		ED 49/40 Name=DVD ha	le near I I	ED 49/40		
	the courses of this group of Study Plan: Code=Y1-BL Alternative Forms of Transportation Project Financing	ED 18/19 Name=PVP Da	ık.prez.Li		(Z	2
	orms of financing in transportation and telecomunications, where the public	ic sector body perform the final o	lehtor i e d	l l		_
	rect participant of the transaction and it is not the counterparty of the finar					
of transportation and tele		iciai iristitute writch provides the	iuliulilig. 155	ue or securitie	s as an and	illative sou
<u> </u>				<u> </u>	/7	
	Anatomy, Mobility and Safety of Man		. 5		KZ	2
•	nical structure and growth of bones. Articular joint. Remodelling of bone tiss					
	scular-skeletal system. Injury of human organs and musculo-skeletal systems	em during traπic accidents. Mob	ility of III and	injured man a	and his trea	itment. Hur
	ve means and traffic safety regulations.					
	Animation and Visualization			1 .	<z td="" <=""><td>2</td></z>	2
•	primitives and their basic modifications and transformations. Creating 3D					
	bodies as non-primitives. Using of surfaces. Working with materials and m	naterial editors. Lightnings. Settir	ng of light and	d material para	ameters. So	ene capturi
Camera settings, moving	in the scene. Rendering and making animation.					
20Y1AE	Applied Electronics			h	<z td="" <=""><td>2</td></z>	2
Basic electronic semicon	ductor components, their principles, characteristics and typical connection	n diagrams. Semiconductor PN j	unction diod	es, transistors	s, thyristor,	operational
amplifiers, basic logic ga	tes. Functions of basic electronic circuits and methods for their designs (re	ectifiers, voltage regulator with 2	ener diode,	transistor as a	an amplifier	, operationa
amplifier as an inverting	and noninverting amplifier).					
14Y1BE	Barrierless Transport			ŀ	۲Z	2
The issue of barrierless a	ccessible public transportation in terms of architectural barriers and also for	or transportation toobpological p	oint of viow	Studonto will a	ain thaarati	
		or transportation-technological po	JIIIL OI VIEW.	students will g	am meoren	icai knowied
	t roads, railway stations, public transport stops, terminal buildings, vehicles					
of barrierless environmer	·					
of barrierless environmer Theoretical knowledge w	t roads, railway stations, public transport stops, terminal buildings, vehicles ill be supplemented by practical examples.			systems and		
of barrierless environmer Theoretical knowledge w 21Y1BC	t roads, railway stations, public transport stops, terminal buildings, vehicles	s, public transport, information an	d orientation	systems and	transportati	ion technolo
of barrierless environmer Theoretical knowledge w 21Y1BC History of safety and sec	t roads, railway stations, public transport stops, terminal buildings, vehicles ill be supplemented by practical examples. Aviation safety and security urity development in aviation. Modern tools for safety and security manag	s, public transport, information an	d orientation	systems and	transportati KZ stems.	ion technolo
of barrierless environmer Theoretical knowledge w 21Y1BC History of safety and sec 15Y1BO	t roads, railway stations, public transport stops, terminal buildings, vehicles ill be supplemented by practical examples. Aviation safety and security urity development in aviation. Modern tools for safety and security manage. Work Safety and Health Protection in Transportation	s, public transport, information an	d orientation	systems and hand secure systems	transportati KZ stems.	2
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15Y1DZ History of Railway	KZ	2
Horse-drawn railways, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First F War II railways, railway development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train con	-	
railway accidents, railway junctions. Excursions and projections.	nections, railway iii	nes construction,
20Y1EK Qualification in Electrical Engineering	KZ	2
Practical experience with measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock haz	ard, symbols and I	abeling, nominal
voltage, maximum allowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legis	slation, standards	and regulations
in relation to health and safety and electrical engineering. 16Y1EN Energy Requirements of Vehicles	KZ	2
16Y1EN Energy Requirements of Vehicles Dynamics and the driving inertial of the vehicles. Types of energy - kinetic, static, heat, chemical and others. Ways of energy change into kinetic en	1	engine electric
drive, steam engine, air engine. Energy accumulation means, accumulator, flywheel, fuel cell. Energy recuperation. WTW analysis.	orgy. Combuction	origino, olootilo
20Y1EA Environmental Aspects of Transport	KZ	2
State of the atmosphere, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilities of the atmosphere, weather observation network, weather in transportation, road meteorology.		
Air quality, main pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and trans	1	
15Y1EH European Integration within Historical Context Versailles system, formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communis	KZ	te principles and
goals. Europe after Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war a		
New quality of French-German relationship - a driving power of starting European integration.		·
18Y1EM Experimental Methods in Mechanics	KZ	2
The purpose and role of experimental mechanics. Sensors for mechanical testing. Overview of experimental methods. Destructive and non-destructive		
experimental procedures and sample preparation. Tensile and bending tests. Electrical resistance strain gages. Optical based strain measurement. Instrumented hardness testing. Introduction to electron microscopy. Errors in measurement.	Fatigue and lifeting	me prediction.
21Y1FN Factors Affecting the Rate of Accidents in Aviation	KZ	2
Introduction. The scope of international and national organizations in civil aviation. The scope of the investigation organisations within the state and	1	_
and interpretation of ICAO Annexes 13 and 19. Analysis and interpretation of the Regulation (EC), Regulation (EU). Human factor. Utilization of info		-
reports.		
15Y1FD French Area Studies and Transportation	KZ	2
France - geography and regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air French society and culture. Current political system. System of education, studying in France. Selected authors of French literature. French gastror		terminology.
14Y1HW Computer Hardware	KZ	2
Design combinational and sequential logical circuits and their implementation on FPGA, VHDL language. Computer architecture, structures of comp	1	_
memories, I/O subsystem, typical interfaces and buses (PCI Express, I2C, SPI, USB).		
15Y1HL History of Air Transport	KZ	2
Aeronautics. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of airports in the Czech Republic. World airports		orld. Helicopters.
CSA airplanes. Famous aviators. Classic era of aviation. Golden era of civil aviation. Supersonic flying. Modern era of civil aviation. Flying in the word 15Y1HD History of City Mass Transport	KZ	2
History of city mass transport in the world, development of tram, bus and trolley-bus systems. History of transport networks in the world, current tree		
clearance systems. History of city transport in Prague and Brno. History of tram, bus and trolley-bus operation systems in the Czech Republic and	•	
12Y1HD Traffic Noise	KZ	2
Acoustic introduction, basic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regular		
area, principles of urban acoustic, noise transmission, soundproofing. Types of noise sources in area. Determination of acoustic situation in the area of	interest. Methodol	ogy of computing
and measurement of transport noise. Acoustic studies, measuring protocol. 15Y1HE Work Hygiene and Ergonomics in Traffic	KZ	2
Basic knowledge of occupational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of the	ı	I
Creation and protection of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technology		
Practical examples from the field of transportation; relevant legislature.		
16Y1IS Interactive Systems and Simulations	KZ	2
Principles of vehicle movement. Forces in moving vehicle, origin, classification, assessment. Adhesion. Traction output. Drives, source systems, class energetic singularity. Sources of energy. Calculations to assess output quantities and energetic intensity. Auxiliary systems energy consumption.	sification, structure	, operational and
12Y1KN Combined Transportation	KZ	2
Combined transport strategy and legislation. Load units. Means of transport in combined transport. Combined transport systems. Transshipping are	1	I
23Y1KO Quantum Physics and Optoelectronics	KZ	2
Ground of quantum physics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics components.	'	'
21Y1LA Aerobatics	KZ	2
Methodology of flying aerobatic figures. Aerodynamics and flight mechanics of aerobatic figures. Aerobatic training syllabi and aerobatic competition		=
Safety in aerobatics, accidents related to aerobatics. Physiological aspects of flying aerobatics. Aircraft structure loads and construction fatigue street recovery training (UPRT) for commercial pilots and related accidents.	angth of aerobatic	aircraft. Upset
21Y1LR Radio Technology in Aviation	KZ	2
Electric signals and the wave spectrum. Analog and digital modulations. Noises. Filters. Resonance circuits. Electromagnetic field. Electromagnetic	1	1
in aviation, radiation and reception of electromagnetic field. Antennas in aviation, receivers and transmitters.		
17Y1LL Logistics of Passenger and Freight Air Transport	KZ	2
Logistics airline passenger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial air cargo. Information systems in air transport. Global distribution systems.	transport process	passengers and
20Y1LN Location and Navigation	KZ	2
Description and examples of road networks, localization on the network. Routing algorithms, their properties and implementation. Description and	1	I
transport connections, routing algorithms, their properties and implementation.		
21Y1MZ Managerial Ethics	KZ	2
The basic terminology of managerial ethics. Basics of etiquette and rules of social contact. Social events. Etiquette of working contacts. The art of presidents and the property of the prope	sentation and nego	otiation. Personal
image. Diplomatic protocol. Managerial ethics. Business ethics. 17Y1MD Marketing in Transportation	KZ	2
17Y1MD Marketing in Transportation General principles of marketing applied to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transport	1	I
the application of marketing.		

11Y1MM Mathematical Models in Economy	KZ	2
The goal of the course is to teach selected methods of linear programming, with theoretical procedures applicable for individual tasks and their programming.		on. The outcom
of the course is the ability to implement and solve basic tasks from the queue theory, graph theory and both free and constrained optimization.		
18Y1MT Engineering Materials	KZ	2
Systematic overview of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers	and composites,	attention is paid
to biological materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's selection	ı charts.	
21Y1MP Matlab for project-oriented study	KZ	2
The subject's syllabus is focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exerci-		_
particular examples, based on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improvem	nent of students' N	Matlab skills.
14Y1MP Modeling Complex Assemblies and Models in Parametric Modeller	KZ	2
Assemblies programming - tools and methodology of working subassemblies and assemblies, sheet metal parts modelling, welded assemblies, pipe	lines, and distribu	ution lines.
Photorealistic output rendering - physical and material properties, lighting sources. MKP - visual example.		
15Y1MK Modern History in Context: Every Day Life and Transport	KZ	2
Historical overview of modern history of every day life, science, technology and transport in a wider context.		
15Y1NE German in the Economy and Society	KZ	2
Recent economic and social issues of German speaking countries and of the EU. Reading and listening of texts. Lexical, grammatical and semantic	analysis of texts.	Discussion on
selected topics.		
23Y1OK Protection of Critical Objects and Infrastructures	KZ	2
Types of technological systems, critical item, risks and their courses, criticality, vulnerability, connectivity, dependability, resilience, failure, protection, s	afety of critical ob	jects and critical
infrastructures.		
20Y1OI Fare Collection and Information Systems	KZ	2
Fare collection systems in public transport and their components (on-board units, validators, turnstiles,). Information systems and their component	•	ables, maps,
panels) and operators (cycles, location or current delay of vehicles,). The issue of tariff systems. Other examples of clearance systems (parking		
14Y1OP Operating System	KZ	2
Distributions. Installation GNU/Linux OS. X-window system. Rights management - users and groups, ACL rights. Filesystems and attributes. Program	ms and processes	ss. OS boot,
runlevels. Basic console programs / commands. Config files. SW management, package systems. Programs in graphic shell - text, spreadsheet, gra	phic editors, sour	nd, video and
communication. Services management. Safe and secure configuration of OS. Remote administration.		
17Y10F 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 he	ousing (rent, mort	gage, savings,
consumer loans, refinancing), savings and investments (investment horizon, return, risk, investment strategy), insurance (insurance types, suitability a	ind adequacy), se	curing the future
(retirement savings and insurance).		
11Y1PV 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 e	efficient solution.
17Y1PM Personnel Management	KZ	2
Human sources, work group, man as personality, planning, choice, evaluation and education of human sources, work adaptation, teamwork, intercul	tural communicat	ion.
14Y1PI Corporate Information System	KZ	2
Data-information-knowledge, components of information system, syntatic and semantic sense of data, structure of corporate information system, particles and semantic sense of data, structure of corporate information system, particles and semantic sense of data, structure of corporate information system, particles and semantic sense of data, structure of corporate information system, particles and semantic sense of data, structure of corporate information system, particles and semantic sense of data, structure of corporate information system, particles and semantic sense of data, structure of corporate information system, particles and semantic sense of data, structure of corporate information system, particles and semantic sense of data, structure of corporate information system, particles and semantic sense of data, structure of corporate information system, particles and semantic sense of data, structure of corporate information system, particles and semantic sense of data, structure of corporate information system, particles and semantic semantic semantic sense of data, structure of corporate information system, particles and semantic	rticular information	n system
(personalistic, production, storage, etc.), corporate information politic and information control, risks of information system operation, legal environment	it of information sy	ystem operation,
state information system, information system security, data protection, safety politics.		
14Y1PZ Advanced Data Processing in Spreadsheets	KZ	2
Students will be familiar with principles of working in a spreadsheet. Graphic layout of the table appearance, formatting of numbers, insertion of form	ulas and function	s, including
addressing, error detection. Working with large spreadsheets, filters, advanced filters, database functions. Pivot tables and charts, conditional formattin	g, solution finding	, solver, macros,
data analysis. Examples and questions from various companies and training.		
12Y1PD Assessment of Transport Structures	KZ	2
Assessment of transport structures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibilitie	s of its protection	and assessment
transport structures on the landscape. Rating fragmentation and landscape connectivity in the preparation of linear structures. Practical examples of	assessment of tra	affic buildings on
the environment.		
14Y1PG Computer Graphics	KZ	2
Basic formats of graphic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with editing and mutual conversion.	liting programs (w	vithin the user
level scope) using layers, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics cards.		
14Y1P2 Computer Aid of Transportation Projecting 2	KZ	2
Overview of CAx application for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting,	data exchange). A	Advanced blocks
modification (attributes, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic trans	ition curve, cross	and longitudinal
section). Basics of 3D modelling.		
18Y1PS 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 dev	velopment and ad	laptation of
geometry from other CAE systems. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary	conditions and ap	plication of the
load. Basic tasks of structural and modal analysis. Introduction to complex nonlinear problems.		
20Y1PK Product Quality Management Processes	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	it. Uniform framew	ork of standards
for systems management. Process management principles. Metrology and testing. Product certification.		_
14Y1PJ C Programming Language	KZ	2
C programming language. Preprocessor, basics of the C language (data types, syntax, commands), functions, pointes, dynamical memory allocation,	string, files, struct	ures and unions.
Implementations of abstract data types (FIFO, LIFO, list), programming techniques (sorting, searching, recursion), using bitwise oprerators.		
12Y1C1 Designing Roads in Civil 3D I	KZ	2
The course is devoted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go throu		
particular linear building, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The	ie course also inc	ludes a basic
explanation of the traffic building design in the real-life profession.		

		,
12Y1C2 Designing Roads in Civil 3D II	KZ	2
The course is devoted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go to		
particular linear building, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation	n. The previously acq	uired skills are
improved and developed. Students learn to design intersections.	1/7	
14Y1PA 3D Modeling in AutoCAD Work in 3D non-parametric modeller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup creation,	KZ	vork with data
connected with external database. Basic definition of work with lights, materials and reflexes. Models presentation.	object data creation, t	WOIK WILLI GALA
16Y1PV Operation, Construction and Maintenance of Vehicles	KZ	2
Methods of vehicle production. Vehicle maintenance. Vehicle diagnostics. Maintenance and repair plans. Engine maintenance and emission me	l l	I
General principles of engine diagnostics.		0.0
12Y1PU Organization Disposition of Railway Stations	KZ	2
Connecting station. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company area	l l	mation yards.
Reserve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic rail	way network.	
12Y1PC 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 cy	cle route layout and de	esign parameters
for cyclists. Separation of cyclists from other transport modes. Cycle tracks and its design - one way streets, reserved traffic lanes, bus stops, compared tracks are considered to the contraction of cyclists.	ossings with other tra	insport modes,
crossroads. Traffic signs and road marking for cyclists.		,
17Y1ST 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 and compete in the same produ		-
determine the quantity and capacity of production, plan budgets for marketing, research and development. They become familiar with the conse	quences of their decis	sions by the form
of financial corporate reports and they use this information for other business decisions.	1/7	
20Y1SC Sensors and Actuators Principles of conserve and actuators. Project of measuring theory and actuating influence. The respective technologies and construction principles. Se	KZ	2
Principles of sensors and actuators. Basics of measuring theory and actuating influence. The respective technologies and construction principles. Se state (temperature, humidity), chemical and particle flow values. Electrical, pneumatic and hydraulic actuators and solid phase elements.	ensors of mechanical, e	electro-magnetic,
17Y1SL Sociology of Human Resources	KZ	2
Human resources and their importance, work group as a special kind of social group, communication, personal management, modern management	1	1
of the organization.	int, numan resources	planning, culture
11Y1SI Transportation Software Engineering	KZ	2
Basic concepts of software engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and in	ı	1
and practical usuage.		
22Y1SZ Forensic Expertise	KZ	2
Historical evolution of forensic engineering, forensic activity, current legislature in the Czech Republic, different disciplines, notion of forensic, fo	ı	_
expert role in the obtaining proofs, forensic methodology. Notion of the evidence, general principles of evidence obtaining, metrology, protocol,	-	
forensic report, elements. Finding, expert testimony / report.		
16Y1KS Quality and Reliability of Vehicles	KZ	2
Quality and reliability theory in design, development, production and operation of vehicles. Definition and possible approach to quality and reliable	ility. Key legislation. F	MEA (Failure
Mode and Effects Analysis), QFD (Quality Function Deployment), DFx (Design for Assamly, Manufacturying, Quality, Services) and other med	hods used in industria	al applications.
Knowledge-based systems of quality and reliability, data collection.		1
12Y1SU Road Management and Maintenance	KZ	2
Getting familiar with ownership of roads in the Czech Republic and the administration of the road at the state and county level. It is presented do	•	
medium and long-term strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities at classroom as well as investment activity in highway engineering.	id repair methods are	discussed in the
21Y1TH 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		
passangers onboarding and offboarding. Operational processes of aircraft technical handling and regulations. Modernization and technical prog		iipinent ioi
11Y1TG Graph Theory	KZ	2
Directed and undirected graphs, weighted graphs, matrices descripting graphs, minimal spanning tree, minimal path, Eulerian paths, graph trav	ı	1
flow networks. Algorithms for problems of existence and optimization. Solving of NP-hard problems, heuristic approach.		,
14Y1TI Creating Interactive Internet Applications	KZ	2
Possibilities of scripting language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solution	ı	l .
in PHP language.		
12Y1VC 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. Advantages and disadvanta	1	rt. Basic systems
of waterways in Europe, a network of waterways in the Czech Republic. Construction of the waterway and its equipment. Management of waterway	ays and its operation.	The legal regime
in inland navigation, navigation rules of operation, navigation maps.		
23Y1VS Negotiation and Cooperation	KZ	2
Code of conduct for negotiation. The influence of personality traits on the negotiations. Negotiation and commanding. Teamwork. Variants teams	s. Informal and formal	role in the team.
Principles of negotiation, the essence of negotiation, the differences in negotiation in business and in crisis situations, the principle of "win both"	specifications and bi	dding, the role of
trust.		T -
14Y1VM Development of Applications for Mobile Devices	KZ	2
Object oriented programming, Java programming language, development environment, operating system Android, development application - will application - will be application of the complex	dgets, containers, thre	eads, menu,
permissions, services, GUI.	1/7	
16Y1VT Development in Railroad Vehicles Railroad vehicles traction Railroad vehicles parameters regulation Control and driving of railroad vehicles. Importance in beauty duty and person	KZ	2
Railroad vehicles traction. Railroad vehicle parametres regulation. Control and driving of railroad vehicles. Importance in heavy duty and persor assessment. New materials in design. International standardization.	เลเ แสทรษบเเสนอก. ปีกัน	เบลเ อแน่สแบก
	KZ	2
14Y1W1 Webdesign 1 Students will learn the basics of communication HTTP, URL and addressing, markup languages HTML and XHTML, HTML tags, rules of web acc	I	I
and selectors, the issue of web browsers, creating one to three column layout pages, sites validation, conditional comments. Topics will be pract		
14Y1W2 Webdesign 2	KZ	2
	1 11/	
Students will learn advanced techniques C55, responsive wendesign. C55 trontends, content management systems, Javascrint, Ichery Sect.	I	n + configuration
Students will learn advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, directives. Topics will be practiced on practical examples.	I	n + configuration

16Y1ZL Vehicle Testing, Legislation and Construction Vehicle, bus and motorbike costruction, aggregate computing, driving resistance, build and parameters of traction, constructional arrangement of personal cars, trucks, buses, motorbikes, legislation in the EU and in the world, technical legislation creation, testing methods, vehicle tests, accelerated tests, mathematical modelling in testing. Introduction into Applied Computer Graphics 16Y1ZG ΚZ Computer graphics, division and applications with emphasis on transport, including development and research. Colours, colour perception, colour schemes, models, principles of 2D and 3D generation, elementary algorithms for graphic data workout. Visualisation principles and tasks, technics, graphics and visualisation HW basics. Introduction to 2D and 3D graphics software 14Y1ZM Fundamentals of Parametric and Adaptive Programming ΚZ 2 Basics of work at products and parts creation. Sketch drawing by help of geometric relations, parametric dimensions, creation of adaptive models from 2D sketches. Import and export from and to another systems. Fundamentals of assemblies creation Foundation of MATLAB Programming ΚZ 2 To explain the principle of algorithmization, flow charts, description of MATLAB environment and its settings, MATLAB help, mathematical operators, matrices and elements operations, control flow, inputs and outputs, graphics, optimization and program code debugging. 12Y1ZU Principles of Urbanism Survey on history of city and settlement building. Functional components and their mutual relations (working, living, recreation, transportation). Spacial arrangement of settlements Types of towns or cities with a certain prevailing function, forms of their development. Brief overview of land-use planning. East-West dichotomy: Prelude to the Cold War 15Y17V ΚZ 2 Historical prologue, evolution of the "West" and "East" from the 1500s. Focus on the history in the period between 1850 nad 1950. Milestones and continuity of the international relations in the end of 19th century and the beginning of the 20th century. Revolutions, the causes and consequences. Scientific and technological progress, the causes and consequences. Economic and financial history. Social changes. Discussions on texts, sources. 21Y1UT Airports Maintenance ΚZ Summer airport maintenance. Summer maintenance equipment. Winter airport maintenance. Winter maintenance equipment. De-icing / anti-icing of aircraft. De-icing / anti-icing liquid. Operating procedures, limitations, practices Editing of Theses in MS Word Students will be introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, create tables of contents, lists of figures, tables, graphs, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editing dissertations and theses, so that they are able to concentrate mainly on writing a thesis Introduction of Rail Vehicles Basic characteristics and parameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion train and unit trains. Rolling and track resistance. Total running resistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehicle - hydromechanic, hydrodynamic and electric drive. Design concept rail vehicles and drive of wheel set. 16Y1RF Control and Electronic Vehicle Systems Elementary concepts of regulation, Tools for analytical solution, linear system description, Basic types of a regulator (PID), properties, advantages, disadvantages, function, Conventional and hybrid drive control. Electric drive. Vehicle communication bus (CAN, LIN, FlexRay, ISObus, KWP2000 protocole etc.). Vehicle electronic control, safety, communication and comfort systems. 21Y1RZ **Human Resources Management** ΚZ 2 The position of human resources in the organization and related disciplines file. Substance, importance and challenges of human resources management. Internal and external environment of human resource management. Human resource planning. Search, recruitment and selection of employees. Motivation, evaluation and remuneration of staff. Positioning,

Name of the block: Jazyky

Minimal number of credits of the block: 6

The role of the block: J

Code of the group: JZ-B-3,4 16/17

Name of the group: Jazyk bak. 5., 6.sem. od 16/17

dismissal and redundancies of employees. Education of employees. Planning career management.

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:

Note on the (group.					
Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
15JZ3F	Foreign Language - French 3 Eva Rezlerová, Jan Feit, Irena Veselková	Z	3	0P+4C	Z	J
15JZ3I	Foreign Language - Italian 3	Z	3	0P+4C	Z	J
15JZ3N	Foreign Language - German 3 Eva Rezlerová, Jan Feit, Jana Štikarová, Alexej Kusák, Petra Mračková Vavroušová Eva Rezlerová (Gar.)	Z	3	0P+4C	Z	J
15JZ3R	Foreign Language - Russian 3 Eva Rezlerová, Jan Feit, Marie Michlová	Z	3	0P+4C	Z	J
15JZ3S	Foreign Language - Spanish 3 Eva Rezlerová, Jan Feit, Petra Mračková Vavroušová, Nina Hricsina Puškinová Petra Mračková Vavroušová (Gar.)	Z	3	0P+4C	Z	J
15JZ4F	Foreign Language - French 4 Eva Rezlerová, Jan Feit, Irena Veselková	Z,ZK	3	0P+4C+10E	B L	J
15JZ4I	Foreign Language - Italian 4	Z,ZK	3	0P+4C+10E	B L	J

15JZ4N	Foreign Language - German 4 Eva Rezlerová, Jan Feit, Jana Štikarová	Z,ZK	3	0P+4C+10B	L	J
15JZ4R	Foreign Language - Russian 4 Eva Rezlerová, Jan Feit, Marie Michlová	Z,ZK	3	0P+4C+10B	L	J
15JZ4S	Foreign Language - Spanish 4 Eva Rezlerová, Jan Feit, Nina Hricsina Puškinová Nina Hricsina Puškinová (Gar.)	Z,ZK	3	0P+4C+10B	L	J

Characteristics of the courses of this group of Study Plan: Code=JZ-B-3,4 16/17 Name=Jazyk bak. 5., 6.sem. od 16/17

15JZ3F Foreign Language - French 3 Z 3
Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation.

15JZ3I Foreign Language - Italian 3 Z

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

15JZ3N Foreign Language - German 3 Z 3

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

15JZ3R Foreign Language - Russian 3 Z 3

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

15JZ3S Foreign Language - Spanish 3 Z 3

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

15JZ4F Foreign Language - French 4 Z,ZK 3

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

15JZ4I Foreign Language - Italian 4 Z,ZK 3

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

15JZ4N Foreign Language - German 4 Z,ZK 3

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

15JZ4R Foreign Language - Russian 4 Z,ZK 3

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

15JZ4S | Foreign Language - Spanish 4 | Z,ZK | 3

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

List of courses of this pass:

Name of the course

Code

Completion Credits

			1			
11CAL1	Calculus 1	Z,ZK	7			
Sequence of real n	umbers and its limit. Basic properties of mappings. Function of one real variable, its limit and derivative. Geometric properties of n-dim	ensional Euklidea	n space and			
Cartesia	an coordinate system. Geometric meaning of the differential of functions several real variables, differential calculus of functions of sev	veral real variables				
11CAL2	Calculus 2	Z,ZK	5			
Antiderivative, Ne	ewtonian integral, Riemannian integral of the function of one variable, improper Riemannian integral, Riemannian integral in Rn. Para	metric description	of regular			
k-dimensional sur	rfaces in Rn, Riemannian integral over regular surfaces. Line and surface integrals of the second type, Stokes theorems, ordinary diff	erential equations	of the first			
	order, linear differential equations with constant coefficients and its systems.					
11FYZ	Physics	Z,ZK	5			
	Kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermodynamics.					
11GIE	Geometry	KZ	3			
Orthographic and	Orthographic and oblique projections, linear perspective. Topographic surfaces and their orthogonal projection. Differential geometry of curves - parameterization, arc of the curve,					
torsion a	torsion and curvature, Frenet's trihedron. Kinematics - a curve as a trajectory of the motion, the velocity and acceleration of a particle moving on a curved path.					

11LA	Linear Algebra ar combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and thei	Z,ZK	3
vector spaces (iiiie	their applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classificat	-	illillants and
11MSP	Modeling of Systems and Processes	Z,ZK	4
	nods and algorithms as a basis for system analysis. Methods for modelling and evaluating the systems in continuous and discrete time		
z-transform, and th	e recursive algorithms in solution of differential and difference equations, as an instrument for system description. Practical use of tec	hnical computing	environment
	(MATLAB).		
11STAT	Statistics	Z,ZK	4
	ility, random variable and its description, known distributions, random vector, function of random variable. Methods of point estimation. T	•	
Regression and cor	rrelation, linear regression, correlation coefficient, coefficient of determination, the general linear model, statistical inference in linear re	gression, analysis	of variance,
111101	multiple regression, the use of matrices in regression.		
11X31	Project 1	Z	2
11X32	Project 2	Z	2
11X33	Project 3	Z	2
11Y1MM	Mathematical Models in Economy	KZ	2
The goal of the cou	urse is to teach selected methods of linear programming, with theoretical procedures applicable for individual tasks and their program	n implementation.	The outcom
	of the course is the ability to implement and solve basic tasks from the queue theory, graph theory and both free and constrained op	timization.	
11Y1PV	Parametrical and Multicriterial Programming	KZ	2
Solution to the prob	olem of linear programming with a parameter in objective function, on right sides and in the matrix of coeficients of linear constraints. Co	mputation of effici	ent solution.
11Y1SI	Transportation Software Engineering	KZ	2
Basic concepts of s	oftware engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and implemer	ntation using forma	l techniques
	and practical usuage.		
11Y1TG	Graph Theory	KZ	2
Directed and undi	rected graphs, weighted graphs, matrices descripting graphs, minimal spanning tree, minimal path, Eulerian paths, graph traversing,	matching in bipar	tite graphs,
	flow networks. Algorithms for problems of existence and optimization. Solving of NP-hard problems, heuristic approach.		
11Y1ZM	Foundation of MATLAB Programming	KZ	2
To explain the princ	riple of algorithmization, flow charts, description of MATLAB environment and its settings, MATLAB help, mathematical operators, mat	rices and elements	operations,
	control flow, inputs and outputs, graphics, optimization and program code debugging.		
12MDE	Transport Models and Transport Excesses	Z,ZK	3
Parameters of the t	raffic flow and methods for their measurement. Models of the traffic flow, communications load, line and urban systems. Theory of qu	ieues, shock wave	s. Quality of
transport and its a	ssessment. Statistical characteristics of transport. Transport excesses, their analysis, the causes, identify and minimize the consequ	ences. Improving	of transport
	safety and fluency.		
12PPOK	Designing Roads, Highways and Motorways	KZ	3
	ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard		
Range of vision for	stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet	y device. Crossing	s, junctions,
	intersections.		ı
12X31	Project 1	Z	2
12X32	Project 2	Z	2
12X33	Project 3	Z	2
12Y1C1	Designing Roads in Civil 3D I	KZ	2
	voted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through	h the complete de:	sign of this
particular linear b	uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The	course also includ	des a basic
	explanation of the traffic building design in the real-life profession.		
12Y1C2	Designing Roads in Civil 3D II	KZ	2
	voted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through		
particular linear bu	uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The	previously acquire	d skills are
	improved and developed. Students learn to design intersections.		
12Y1DS	Project Documentation in Practice	KZ	2
Project documenta	ation creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process.	Budget and pricin	g. Practical
	creation of some project documentation parts.		
12Y1HD	Traffic Noise	KZ	2
Acoustic introduction	on, basic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regulation	s. Creation acoust	ic climate in
area, principles of u	rban acoustic, noise transmission, soundproofing. Types of noise sources in area. Determination of acoustic situation in the area of inter	est. Methodology	of computing
	and measurement of transport noise. Acoustic studies, measuring protocol.		
12Y1KN	Combined Transportation	KZ	2
·	ort strategy and legislation. Load units. Means of transport in combined transport. Combined transport systems. Transshipping areas		1
12Y1PC	Pedestrian and Cycling Transport	KZ	2
	ans. Pedestrian crossings. Modifications for blind, dim-sighted and disabled people. Design of cycle routes network. Ways of cycle route		
for cyclists. Separ	ation of cyclists from other transport modes. Cycle tracks and its design - one way streets, reserved traffic lanes, bus stops, crossing	s with other transp	ort modes,
401/155	crossroads. Traffic signs and road marking for cyclists.	17-	_
12Y1PD	Assessment of Transport Structures	KZ	2
	sport structures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibilities o	-	
uansport structures	s on the landscape. Rating fragmentation and landscape connectivity in the preparation of linear structures. Practical examples of ass the environment.	essment of traffic	pullulings on
10/4011		KZ	2
12Y1PU	Organization Disposition of Railway Stations n. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zor	I	
	ve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic		uon yarus.
1	The second of th		

12Y1SU	Road Management and Maintenance	KZ	2
Getting familiar w	th 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,
medium and long-te	rm strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and repair	methods are disc	cussed in the
	classroom as well as investment activity in highway engineering.		
12Y1VC	Waterways and Shipping	KZ	2
Basic modes of tran	sport. The position of water transport in the transport system of the Czech Republic and the EU. Advantages and disadvantages of v	vater transport. Ba	asic systems
of waterways in Eur	ope, a network of waterways in the Czech Republic. Construction of the waterway and its equipment. Management of waterways and	its operation. The	legal regime
	in inland navigation, navigation rules of operation, navigation maps.		
12Y1ZU	Principles of Urbanism	KZ	2
l .	of city and settlement building. Functional components and their mutual relations (working, living, recreation, transportation). Spacial		
	Types of towns or cities with a certain prevailing function, forms of their development. Brief overview of land-use planning.	· ·	
12ZTS	Railway Lines and Stations	Z,ZK	4
	lway track geometry parameters. Route layout of 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	•	.,
12ZYDI	Introduction to Transportation Engineering	Z,ZK	2
	on in land-use planning. Basic terms in transportation engineering. Traffic survey and traffic prognosis. Introduction to topic of roads, pr		1
	impacts of transportation to environment and safety.	abiio 111aoo ii ai 10p	o
14ASD	Algorithm and Data Structures	KZ	3
	iliarized with selected basic and derived data structures, algorithms, their properties and their design procedure. Students will analyze		-
	et task and the resulting algorithm write by means of flowcharts, practice in reading algorithms recorded by means of the flowchart ar		
	algebra with forming the conditions for the algorithms.	ia add the backet	or Booloan
14DATS	Database Systems	KZ	2
	ا atabase systems, conceptual model, relational data model, the principles of normal forms, relational database design, security and integ		1
basic concepts of u	relational algebra, SQL language, client / server, multilayer architectures, distributed database systems. Access to data via the V		ase queries,
14KCD			2
14KSP	Constructing with Computer Aid	KZ	2
-	n determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic common wor		
and CA systems.	Co-ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting possib	ilites, Autocad er	ivironment
4.488.0	profiles, drawings with raster foundaments).	1/7	
14PRG	Programming	KZ	2
Algorithm develop	ment, methods of structured programming, high-level programming languages, basics of C programming languages (types, variable	s, conditions, cycl	es, arrays,
	functions), programming techniques, complexity.		
14X31	Project 1	Z	2
14X32	Project 2	Z	2
14X33	Project 3	Z	2
14Y1AV	Animation and Visualization		
	AUIIIIaIIOII aug visualizalion	K/	2
	· · · · · · · · · · · · · · · · · · ·	KZ	2 mbination of
Introducing and bas	ic 3D primitives and their basic modifications and transformations. Creating 3D scenes. Transformations of 3D primitives, connection	n / interaction / co	mbination of
Introducing and bas	ic 3D primitives and their basic modifications and transformations. Creating 3D scenes. Transformations of 3D primitives, connection ng 3D bodies as non-primitives. Using of surfaces. Working with materials and material editors. Lightnings. Setting of light and material	n / interaction / co	mbination of
Introducing and bas 3D primitives, creati	bic 3D primitives and their basic modifications and transformations. Creating 3D scenes. Transformations of 3D primitives, connection ng 3D bodies as non-primitives. Using of surfaces. Working with materials and material editors. Lightnings. Setting of light and material Camera settings, moving in the scene. Rendering and making animation.	n / interaction / co parameters. Scer	mbination of ne capturing.
Introducing and bas 3D primitives, creati	bic 3D primitives and their basic modifications and transformations. Creating 3D scenes. Transformations of 3D primitives, connection ng 3D bodies as non-primitives. Using of surfaces. Working with materials and material editors. Lightnings. Setting of light and material Camera settings, moving in the scene. Rendering and making animation. Barrierless Transport	n / interaction / co parameters. Scer KZ	mbination of ne capturing.
Introducing and bas 3D primitives, creati 14Y1BE The issue of barrier	sic 3D primitives and their basic modifications and transformations. Creating 3D scenes. Transformations of 3D primitives, connection of 3D bodies as non-primitives. Using of surfaces. Working with materials and material editors. Lightnings. Setting of light and material Camera settings, moving in the scene. Rendering and making animation. Barrierless Transport ess accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students of the state of the s	n / interaction / co parameters. Scer KZ will gain theoretica	mbination of the capturing. 2 al knowledge
Introducing and bas 3D primitives, creati 14Y1BE The issue of barrier	sic 3D primitives and their basic modifications and transformations. Creating 3D scenes. Transformations of 3D primitives, connection graph bodies as non-primitives. Using of surfaces. Working with materials and material editors. Lightnings. Setting of light and material camera settings, moving in the scene. Rendering and making animation. Barrierless Transport ess accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students of the	n / interaction / co parameters. Scer KZ will gain theoretica	mbination of the capturing. 2 al knowledge
Introducing and bas 3D primitives, creati 14Y1BE The issue of barrierl of barrierless enviro	sic 3D primitives and their basic modifications and transformations. Creating 3D scenes. Transformations of 3D primitives, connection g 3D bodies as non-primitives. Using of surfaces. Working with materials and material editors. Lightnings. Setting of light and material Camera settings, moving in the scene. Rendering and making animation. Barrierless Transport ess accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students and the state of the state of transport stops, terminal buildings, vehicles, public transport, information and orientation systems. Theoretical knowledge will be supplemented by practical examples.	n / interaction / co parameters. Scer KZ will gain theoretica and transportation	mbination of ne capturing. 2 al knowledge nechnology.
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Introducing and bases 3D primitives, creation 14Y1BE The issue of barrier of barrierless environ 14Y1BM Basic biometric ter	sic 3D primitives and their basic modifications and transformations. Creating 3D scenes. Transformations of 3D primitives, connection g 3D bodies as non-primitives. Using of surfaces. Working with materials and material editors. Lightnings. Setting of light and material Camera settings, moving in the scene. Rendering and making animation. Barrierless Transport ess accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students an animal material public transport, information and orientation systems and also for transport transport, information and orientation systems. Theoretical knowledge will be supplemented by practical examples. Biometric Methods ms, authentication methods, principles and performance measurement of biometric systems, overview of biometric technologies, ha	KZ will gain theoretica and transportation KZ nd geometry, iris r	mbination of the capturing. 2 al knowledge the technology. 2 recognition,
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14Y1PJ	C Programming Language	KZ es. structures	2 and union
programming lar	Implementations of abstract data types (FIFO, LIFO, list), programming techniques (sorting, searching, recursion), using bitwise operat		ana amoi
14Y1PZ	Advanced Data Processing in Spreadsheets	KZ	2
Students will be	familiar with principles of working in a spreadsheet. Graphic layout of the table appearance, formatting of numbers, insertion of formulas a	nd functions,	including
ddressing, error d	etection. Working with large spreadsheets, filters, advanced filters, database functions. Pivot tables and charts, conditional formatting, solutic	on finding, solv	ver, macro
	data analysis. Examples and questions from various companies and training.		
14Y1TI	Creating Interactive Internet Applications	KZ	2
ossibilities of scri	oting language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions. Your own	application p	rogramm
	in PHP language.		
14Y1UP	Editing of Theses in MS Word	KZ	2
tudents will be int	roduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, create tables o	f contents, list	ts of figure
bles, graphs, etc	. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editing disserta	ations and the	eses, so tl
	they are able to concentrate mainly on writing a thesis.		
14Y1VM	Development of Applications for Mobile Devices	ΚZ	2
Object oriented	orogramming, Java programming language, development environment, operating system Android, development application - widgets, cont	tainers, thread	ds, menu
	permissions, services, GUI.		
14Y1W1	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 and	usability, CS	S properti
and selectors	, the issue of web browsers, creating one to three column layout pages, sites validation, conditional comments. Topics will be practiced on	practical exa	mples.
14Y1W2	Webdesign 2	KZ	2
tudents will learn	advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, web server in	nstallation + c	onfigurati
	directives. Topics will be practiced on practical examples.		
14Y1ZM	Fundamentals of Parametric and Adaptive Programming	KZ	2
asics of work at p	roducts and parts creation. Sketch drawing by help of geometric relations, parametric dimensions, creation of adaptive models from 2D ske	etches. Impor	t and exp
	from and to another systems. Fundamentals of assemblies creation.		
15DPLG	Transportation Psychology	Z	2
ubject of psycholo	yy and its basic concepts. Information intake, decision-making and behaviour. Performance. Engineering psychology and vehicle construction	n. Psycholog	ical aspe
of trave	el route and traffic conditions, accidents and traffic incidents. Selection and training of the staff. Work and leisure. Age as a factor in transp	ort operation.	
15JZ1A	Foreign Language - English 1	Z	3
rammatical struct	ures and style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and commun	nicative skills.	Element
	stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles of rhe	toric.	
15JZ2A	Foreign Language - English 2	Z,ZK	3
rammatical struct	ures and style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and commun	nicative skills.	Elementa
	stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles of rhe	toric.	
15JZ3F	Foreign Language - French 3	Z	3
Grammar and styl	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language	age structure	knowled
nd perceptive an	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional)	text and
	features. Practice of oral and written presentation.		
15JZ3I	Foreign Language - Italian 3	Z	3
Grammar and styl	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of langu	age structure	knowled
nd perceptive and	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional)	text and
	features. Practice of oral and written presentation.		
15JZ3N	Foreign Language - German 3	Z	3
3rammar and styl	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of langu	age structure	knowled
nd perceptive an	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional)	text and
	features. Practice of oral and written presentation.		
15JZ3R	Foreign Language - Russian 3	Z	3
Grammar and styl	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of langu	age structure	knowled
nd perceptive an	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional)	text and
	features. Practice of oral and written presentation.		
15JZ3S	Foreign Language - Spanish 3	Ζ	3
Grammar and styl	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of langu	age structure	knowled
nd perceptive an	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional)	text and
	features. Practice of oral and written presentation.		
15JZ4F	Foreign Language - French 4	Z,ZK	3
Grammar and styl	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of langu	age structure	knowled
nd perceptive an	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional)	text and
	features. Practice of oral and written presentation.		
15JZ4I	Foreign Language - Italian 4	Z,ZK	3
Frammar and styl	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of langu	age structure	knowled
nd perceptive an	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional)	text and
	features. Practice of oral and written presentation.		
15JZ4N	Foreign Language - German 4	Z,ZK	3
	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of langu		knowled
and perceptive and	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional)	text and
	features. Practice of oral and written presentation.		
		7 71/	3
15JZ4R	Foreign Language - Russian 4	Z,ZK	_
Grammar and styl	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of langu	age structure	knowled
Grammar and styl		age structure	knowled

15JZ4S	Foreign Language - Spanish 4	Z,ZK	3
	stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of		_
and perceptive and	I communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work	with (professional)	text and its
45)(0.4	features. Practice of oral and written presentation.		
15X31	Project 1	Z	2
15X32	Project 2	Z	2
15X33	Project 3	Z	2
15Y1BO	Work Safety and Health Protection in Transportation	KZ	2
Fundamental legis	lative, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation. H	ealth protection pro	ogrammes,
	health insurance of home and foreign business trips, statistics, working practice.		
15Y1DZ	History of Railway	KZ	2
	rays, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Rep		
vvar II railways, railv	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.	ons, railway lines c	onstruction,
15Y1EH		KZ	2
	European Integration within Historical Context formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism. L		
	er Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and i		
godio: Ediopo dito	New quality of French-German relationship - a driving power of starting European integration.		oa.opo.
15Y1FD	French Area Studies and Transportation	KZ	2
	hy and regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air tra		
	ch society and culture. Current political system. System of education, studying in France. Selected authors of French literature. Fren	•	0,
15Y1HD	History of City Mass Transport	KZ	2
History of city mass	s transport in the world, development of tram, bus and trolley-bus systems. History of transport networks in the world, current trends	and developments	of tariff and
cleara	nce systems. History of city transport in Prague and Brno. History of tram, bus and trolley-bus operation systems in the Czech Repul	olic and Slovakia.	
15Y1HE	Work Hygiene and Ergonomics in Traffic	KZ	2
	of occupational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of these		
Creation and prote	ction of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technology to provide the conditions are considered to the conditions and the conditions are conditions and the conditions are conditions as a condition of the conditions are conditionally as a condition of the condition of	ossibilities and skill	ls of a man.
. =	Practical examples from the field of transportation; relevant legislature.		
15Y1HL	History of Air Transport	KZ	2
_	nings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of airports in the Czech Republic. World airports. Air		Helicopters.
	A airplanes. Famous aviators. Classic era of aviation. Golden era of civil aviation. Supersonic flying. Modern era of civil aviation. Flying		
15Y1MK	Modern History in Context: Every Day Life and Transport	KZ	2
457411	Historical overview of modern history of every day life, science, technology and transport in a wider context.	1/7	
15Y1NE	German in the Economy and Society and sociaty and social issues of German speaking countries and of the EU. Reading and listening of texts. Lexical, grammatical and semantic ar	KZ	2
Recent economic	selected topics.	lalysis of texts. Dis	Cussion on
15Y1ZV	East-West dichotomy: Prelude to the Cold War	KZ	2
	evolution of the "West" and "East" from the 1500s. Focus on the history in the period between 1850 nad 1950. Milestones and continu	l	
	century and the beginning of the 20th century. Revolutions, the causes and consequences. Scientific and technological progress, the	-	
	Economic and financial history. Social changes. Discussions on texts, sources.		•
16UDOP	Introduction into Vehicles	Z	2
	portation systems. Functionality and setup. Movement and drive principles. Engines and their characteristics. Rail, road, air and wate	r transport. Alterna	ative means
	of transport. Lifting equipment and conveyors. Legislation.		
16X31	Project 1	Z	2
16X32	Project 2	Z	2
16X33	Project 3	Z	2
16Y1EN	Energy Requirements of Vehicles	KZ	2
	driving inertial of the vehicles. Types of energy - kinetic, static, heat, chemical and others. Ways of energy change into kinetic energy		
	drive, steam engine, air engine. Energy accumulation means, accumulator, flywheel, fuel cell. Energy recuperation. WTW ana	lysis.	
16Y1IS	Interactive Systems and Simulations	KZ	2
Principles of vehicle	e movement. Forces in moving vehicle, origin, classification, assesment. Adhesion. Traction output. Drives, source systems, classifica	tion, structure, ope	rational and
•	energetic singularity. Sources of energy. Calculations to assess output quantities and energetic intensity. Auxiliary systems energy co	nsumption.	
16Y1KS	Quality and Reliability of Vehicles	KZ	2
-	ility theory in design, development, production and operation of vehicles. Definition and possible approach to quality and reliability. K		-
Mode and Effects	Analysis), QFD (Quality Function Deployment), DFx (Design for Assamly, Manufacturying, Quality, Services) and other methods u	sed in industrial ap	plications.
(2)((5)(Knowledge-based systems of quality and reliability, data collection.		
16Y1PV	Operation, Construction and Maintenance of Vehicles	KZ	. 2
Methods of Venicle	production. Vehicle maintenance. Vehicle diagnostics. Maintenence and repair plans. Engine maintenance and emission measurem	ent. Transmission r	necnanism.
46V4DE	General principles of engine diagnostics.	KZ	2
16Y1RE	Control and Electronic Vehicle Systems ts of regulation. Tools for analytical solution, linear system description. Basic types of a regulator (PID), properties, advantages, disadva		
	ntrol. Electric drive. Vehicle communication bus (CAN, LIN, FlexRay, ISObus, KWP2000 protocole etc.). Vehicle electronic control, safe	-	
and riyond drive cor	systems.	ty, communication	and connort
16Y1VT	Development in Railroad Vehicles	KZ	2
	traction. Railroad vehicle parametres regulation. Control and driving of railroad vehicles. Importance in heavy duty and personal trai		
555 70110100	assesment. New materials in design. International standardization.		
16Y1ZG	Introduction into Applied Computer Graphics	KZ	2
	s, division and applications with emphasis on transport, including development and research. Colours, colour perception, colour sche	l	
	on, elementary algorithms for graphic data workout. Visualisation principles and tasks, technics, graphics and visualisation HW basic		-
	graphics software.		

16Y1ZL	Vehicle Testing, Legislation and Construction	KZ	2
	otorbike costruction, aggregate computing, driving resistance, build and parameters of traction, constructional arrangement of personal c slation in the EU and in the world, technical legislation creation, testing methods, vehicle tests, accelerated tests, mathematical mode		motorbikes,
17TEDL	Transport Technology and Logistics	KZ	3
	sport technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and freight tran		
each transport m	odus, technologic factors of the side of operator and client, organisation of city transport, logistic technologies and their aplication usi	Ing various transpo	ort modus.
	Graph Theory and its Applications in Transport graph theory, paths in graphs, flows in networks, location problems, design problems on graphs, optimum routing, use of graphs in c		
17X31	Project 1	Z	2
17X32	Project 2	Z	2
17X33	Project 3	Z	2
17Y1LL	Logistics of Passenger and Freight Air Transport	KZ	2
Logistics airline pas	ssenger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial trans air cargo. Information systems in air transport. Global distribution systems.	sport process pass	sengers and
17Y1MD	Marketing in Transportation	KZ	2
General principles	of marketing applied to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transport a the application of marketing.	nd the resulting dif	ferences in
17Y10F	Personal Finance	KZ	2
	budget, financing of basic living needs), debt (loans and credits, payment instruments, interest and fees, debt trap), financing of house		
consumer loans, re	financing), savings and investments (investment horizon, return, risk, investment strategy), insurance (insurance types, suitability and (retirement savings and insurance).	adequacy), securir	ig the future
17Y1PM	Personnel Management	KZ	2
	ces, work group, man as personality, planning, choice, evaluation and education of human sources, work adaptation, teamwork, inter		
17Y1SL	Sociology of Human Resources	KZ .	2
Human resources a	and their importance, work group as a special kind of social group, communication, personal management, modern management, hum of the organization.	an resources plani	ning, culture
17Y1ST	Titan Simulation	KZ	2
Titan is a manag	pement game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same produ		
determine the quar	titiy and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequences	s of their decisions	by the form
18MTY	of financial corporate reports and they use this information for other business decisions. Materials Science and Engineering	Z,ZK	3
	Materials Science and Engineering terials science and engineering explains mechanical properties of structural materials based on their bonding forces and microstructur		
	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.		
18PZP	Elasticity and Strength ession. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam. Design of riveted, bolte	Z,ZK	3 of structure
	ession. Bending of beam. Shear stress during bending of beam. Design and analysis of closs section of beam. Design of modes, botte ction curve of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Beam on elastic for	-	
18SAT	Structural Analysis	Z,ZK	4
	of forces in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determinate		•
Principle of virtual w	vork. Kinematic method for calculation of reactions of statically determinate systems. Determination of axial forces in truss constructions. of planar shapes. Fiber polygons and chains.	Cross-sectional cn	aracteristics
18TED	Technical Documentation	KZ	2
	rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional		
	arrangement of drawing sheets.		
18X31	Project 1	Z	2
18X32	Project 2	Z	2
18X33 18Y1AM	Project 3 Anatomy, Mobility and Safety of Man	Z KZ	2
	Anatomical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circulation	1	
<u> </u>	of muscular-skeletal system. Injury of human organs and musculo-skeletal system during traffic accidents. Mobility of ill and injured n	=	
40)/4514	joint prostheses. Protective means and traffic safety regulations.	1/7	
18Y1EM	Experimental Methods in Mechanics ole of experimental mechanics. Sensors for mechanical testing. Overview of experimental methods. Destructive and non-destructive	KZ	2 Design of
	bedures and sample preparation. Tensile and bending tests. Electrical resistance strain gages. Optical based strain measurement. Fa	•	•
	Instrumented hardness testing. Introduction to electron microscopy. Errors in measurement.		
18Y1MT	Engineering Materials	KZ	2
-	w of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers and ogical materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's	-	ntion is paid
18Y1PS	Computer Simulations in Mechanics	KZ	2
	verview of programs for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model dev	1	
geometry from oth	er CAE systems. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary con	nditions and applic	ation of the
10\/41.11/	load. Basic tasks of structural and modal analysis. Introduction to complex nonlinear problems.	1/7	2
18Y1UK Basic characteristi	Introduction of Rail Vehicles cs and parameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion tra	KZ ain and unit trains.	2 Rolling and
	tal running resistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehicle - I		_
	and electric drive. Design concept rail vehicles and drive of wheel set.		
20SYSA	Systems Analysis	Z,ZK	5
· · · · · · · · · · · · · · · · · · ·	em sciences, system viewpoint, terminology, typical system analysis tasks, system identification, system interface and interface tasks strong functions and processes, genetic code, system identity, system architecture. Tools for system analysis - Petri nets, decision tal	-	
unu no analysis, s	tacks. Soft and bard evertees methods for soft evertee analysis.	Jioo, aiguittiilis 101	Judiuiai

20UITS	Introduction to Intelligent Transport Systems	Z,ZK	7
erminology and le	gislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamentals of information of informatics are the systems and their operation.	nation and teleco	mmunicati
stems for ITS. Pi	rinciples and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real examples principles of ITS.	of possible applic	cations of
20X31	Project 1	Z	2
20X32	Project 2	Z	2
20X33	Project 3	Z	2
20Y1AE	Applied Electronics	KZ	2
	semiconductor components, their principles, characteristics and typical connection diagrams. Semiconductor PN junction diodes, trans	-	
mplifiers, basic l	ogic gates. Functions of basic electronic circuits and methods for their designs (rectifiers, voltage regulator with Zener diode, transisto	r as an amplifier,	operation
	amplifier as an inverting and noninverting amplifier).		1 -
20Y1AF	Alternative Forms of Transportation Project Financing	KZ	2
	such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt paym not a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of secu		
e iiilai debloi is ii	of transportation and telecomunication projects.	illies as all alteri	ialive sol
20Y1EA	Environmental Aspects of Transport	KZ	2
	phere, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilistic		
	n pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transp		
20Y1EK	Qualification in Electrical Engineering	KZ	2
	ce with measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock hazard, s		ling, nom
oltage, maximum	n allowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legislation	n, standards and	l regulation
	in relation to health and safety and electrical engineering.		
20Y1LN	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.	mples of datasets	for findi
	transport connections, routing algorithms, their properties and implementation.		
20Y1OI	Fare Collection and Information Systems	KZ	2
-	ystems in public transport and their components (on-board units, validators, turnstiles,). Information systems and their components		oles, map
	nels) and operators (cycles, location or current delay of vehicles,). The issue of tariff systems. Other examples of clearance systems		
20Y1PK	Product Quality Management Processes of organization management. Management systems and international standards; quality management systems. Quality products, product	KZ	2 ∧ framou
	of organization management. Management systems and international standards, quality management systems. Quality products, process management, monitoring and measurement systems management. U		
Staridards for Sys	for systems management. Process management principles. Metrology and testing. Product certification.	mormiamework	or stariot
20Y1SC	Sensors and Actuators	KZ	2
	rs and actuators. Basics of measuring theory and actuating influence. The respective technologies and construction principles. Sensors of		_
·	state (temperature, humidity), chemical and particle flow values. Electrical, pneumatic and hydraulic actuators and solid phase ele		
21ELED	Air Transport Economy	Z,ZK	4
conomic benefits	of air transport. Costs of airline. Revenue management. Fuel management. Currencies development. Demand and supply. Rates in a	ir transport. Aircr	aft select
	Fleet asignment. Aging of aircraft. Airlines bankrupcty. Crew planning. Marketing in Air Transport. Cargo tariff and rates. Air network of	onfiguration.	
21LAG1	English for Aviation 1	KZ	3
	Familiarity with the terminology used in civil aviation in the general context and emphasizing the ability to receive information only in		_
21LAG2	English in Aviation 2	KZ	3
	Terminology in the sphere of aircraft construction, principles of flight, aircraft engines, instruments and systems.		
21LCM	Aircraft Engines	Z,ZK	3
	gine, theoretical background, operational characteristics and construction schemes. Propellers, operational characterictics. Turbine en	=	_
<u>-</u>	onstruction schemes, operational characteristics. Turbojet and turbofan engines, basic construction modules, and their operational ch		_
21LGP	Legislation and Operational Regulations viation regulations. The scope of international and national organizations in civil aviation. Analysis and interpretation of the ICAO Ann	Z,ZK	5
	B. Introduction to the European Parliament and Council Regulation (EC), Commission Regulation (EU) and the Decisions of the Execu		
21LIVO	Human Performance and Limitations	Z,ZK	5
	e & limitations, aptibility & competence, accident statistics, flight safety, basics of flight physiology, man & environment		
-	health & hygiene, health preservation, intoxication, incapacitation, basics of flight psychology, human information processing, me		
, , ,	& amp; model of human error, body rhythms & amp; sleep, stress, fatigue, working methods.	, , ,	O,
21LL1	Aircraft 1	KZ	3
rcraft structural a	and conceptual design types - definitions and basic knowledge of the problem. Development of requirements, aircraft definitions and ca	tegorisation. Airc	raft loadir
	Systems of primary and secondary airframe structure. Airframe and propulsion unit. Lectures are devoted to aeroplane topic	s.	
21LTA2	Aircraft 2	Z,ZK	2
anufacturers resp	ponsibility, responsibilities of operator and professional supervising. Legislation in area of airworthiness. International and national stan	dards. Static solic	dity of airc
	structures. Aeroelasticity. Inherent and operational reliability of aircraft structure. Fatigue strength. Aircraft structure lifetime presu	· ·	
21LTN	Air Navigation	Z,ZK	2
arth - its shane i	parameters and properties. Aeronautical charts and their use. Measuring time. Dead reckoning. Radionavigation aids. Global navigation	on satellite syster	ns. Air tra
artir ito oriapo, p	services routes and their design.		1
	, , , , , , , , , , , , , , , , , , ,		
21LTTE	Aerodromes	Z,ZK	4
21LTTE	nce point and temperature, TORA, TODA, ASDA, LDA. Taxiway and apron. Clearway. Stopway. Obstacle limitation surfaces. Runway	•	1
21LTTE erodrome referer	nce point and temperature, TORA, TODA, ASDA, LDA. Taxiway and apron. Clearway. Stopway. Obstacle limitation surfaces. Runway Environmental conditions. Public traffic.	marking. Runway	y zone lig
21LTTE erodrome referer	nce point and temperature, TORA, TODA, ASDA, LDA. Taxiway and apron. Clearway. Stopway. Obstacle limitation surfaces. Runway Environmental conditions. Public traffic. Meteorology	marking. Runway	zone lig
21LTTE erodrome referer 21MRG structure of atmos	nce point and temperature, TORA, TODA, ASDA, LDA. Taxiway and apron. Clearway. Stopway. Obstacle limitation surfaces. Runway Environmental conditions. Public traffic.	marking. Runway KZ Turbulence. Pow	zone lig

Circulation. Intertropical front. Meteorological informations.

	Airline Business and Operations	Z,ZK	3
IATA, ICAO, ECAC	d operation abbreviations and terminology. Civil aviation structure in the Czech republic. Act No. 49/1997 Coll., on civil aviation. Air tr		
	, JAA, EUROCONTROL. Air operators. Air transport distribution. Global distribution and reservation systems. Agreements among ai and publications. Passenger and cargo air transport.	r operators. Air tra	ffic manuals
21PAP	Flight Planning and Performance	Z,ZK	4
Mass and balance.	Load of aircraft. Determination of centre of gravity - loadsheet, trimsheet. Aircraft weighing. Overloading of aircraft. Basic characteristic s		aracteristics.
Take off and landin	g performance. Drift down. ETOPS. MEL. Flight planning and monitoring. Routing. FL and speeds selection. Charts. ICAO ATC FPL. A	erodrom operation	n minimums.
24DDL E	Fuel plan. Operational flight plan.	1/7	
21PDLE	Airport Design and Operation	KZ	3
Methods for the nev	v airports design. Existing airports development. A closer look at the development of the airports operational areas. Certification of the object preparation, regulatory basis.	peraung areas and	procedures
21PJE	Aircraft Instruments	KZ	2
-	All Claft Instruments: aft instrumentation and its principles and construction, aircraft electrical systems, engine measuring and monitoring systems, air dat	l	1
	gyroscopic indicators, inertial and radio navigation means, communication means, data recorders, complex flight and navigation data		
21RILP	Air Traffic Control	7	2
	and their distribution. Organization of air traffic, flow and capacity management. Airspace management. System support for aircraft fly	ing through space	
	Separation of aircraft. Reports of air traffic services, the form, content. Harmonization and integration of ATC. CFMU and its subsystem FUA. RVSM, RNP. New trends in the area of ATC.		
21ULCT	Aircraft Maintenance	7	2
	and technical operations. Maintenance and work processes. Defects search methods, status check diagnostic tools. Selection and qua	ı — — ılification of aviatio	1
•	on for maintenance. Optimization of time maintenance intervals. Regulation no. 1321/2014 Part 145. Human factors of aircraft maint		
	EASA for aircraft maintenance. Seminars will be focused on practical application.		
21X31	Project 1	Z	2
21X32	Project 2	Z	2
21X33	Project 3	Z	2
21Y1BC	Aviation safety and security	KZ	2
	safety and security development in aviation. Modern tools for safety and security management. Research and development of safe		I I
21Y1BS	Unmanned aircraft systems 1	KZ	2
_	n Development. Aircraft design. Legislation in force in the Czech Republic. Planning and execution of the flight. Airspace division. Op	1	1
	procedures. Practical flights.		
21Y1FN	Factors Affecting the Rate of Accidents in Aviation	KZ	2
Introduction. The s	cope of international and national organizations in civil aviation. The scope of the investigation organisations within the state and inte	rnational committe	es. Analysis
and interpretation	n of ICAO Annexes 13 and 19. Analysis and interpretation of the Regulation (EC), Regulation (EU). Human factor. Utilization of inform	nation from the inv	restigation
	reports.		
21Y1LA	Aerobatics	KZ	2
	ng aerobatic figures. Aerodynamics and flight mechanics of aerobatic figures. Aerobatic training syllabi and aerobatic competitions. Cucs, accidents related to aerobatics. Physiological aspects of flying aerobatics. Aircraft structure loads and construction fatigue streng	-	c sequence.
	recovery training (UPRT) for commercial pilots and related accidents.	an or acrobatio and	craft. Upset
21Y1LR			
	Radio Technology in Aviation	KZ	2
	d the wave spectrum. Analog and digital modulations. Noises. Filters. Resonance circuits. Electromagnetic field. Electromagnetic wa	KZ	2
Electric signals an	d the wave spectrum. Analog and digital modulations. Noises. Filters. Resonance circuits. Electromagnetic field. Electromagnetic wa in aviation, radiation and reception of electromagnetic field. Antennas in aviation, receivers and transmitters.	KZ ve propagation. W	2 /ave ranges
Electric signals an 21Y1MP	d the wave spectrum. Analog and digital modulations. Noises. Filters. Resonance circuits. Electromagnetic field. Electromagnetic wa in aviation, radiation and reception of electromagnetic field. Antennas in aviation, receivers and transmitters. Matlab for project-oriented study	KZ ve propagation. W	2 /ave ranges
21Y1MP The subject's sylla	d the wave spectrum. Analog and digital modulations. Noises. Filters. Resonance circuits. Electromagnetic field. Electromagnetic was in aviation, radiation and reception of electromagnetic field. Antennas in aviation, receivers and transmitters. Matlab for project-oriented study bus is focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exercises	KZ ve propagation. W KZ s will be prepared a	2 /ave ranges 2 according to
21Y1MP The subject's sylla particular examp	d the wave spectrum. Analog and digital modulations. Noises. Filters. Resonance circuits. Electromagnetic field. Electromagnetic was in aviation, radiation and reception of electromagnetic field. Antennas in aviation, receivers and transmitters. Matlab for project-oriented study bus is focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exercises les, based on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improvement	KZ ve propagation. W KZ s will be prepared a	2 vave ranges 2 according to that skills.
21Y1MP The subject's sylla particular examp 21Y1MZ	d the wave spectrum. Analog and digital modulations. Noises. Filters. Resonance circuits. Electromagnetic field. Electromagnetic was in aviation, radiation and reception of electromagnetic field. Antennas in aviation, receivers and transmitters. Matlab for project-oriented study bus is focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exercises les, based on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improvement of the problem of the pro	KZ ve propagation. W KZ s will be prepared a ent of students' Ma	2 /ave ranges 2 according to attab skills.
21Y1MP The subject's sylla particular examp 21Y1MZ	d the wave spectrum. Analog and digital modulations. Noises. Filters. Resonance circuits. Electromagnetic field. Electromagnetic was in aviation, radiation and reception of electromagnetic field. Antennas in aviation, receivers and transmitters. Matlab for project-oriented study bus is focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exercises les, based on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improvement Managerial Ethics but of the wave spectrum. Analog and digital modulations. Noises. Filters. Resonance circuits. Electromagnetic field. Electromagnetic was in aviation, receivers and transmitters.	KZ ve propagation. W KZ s will be prepared a ent of students' Ma	2 /ave ranges 2 according to attab skills.
21Y1MP The subject's sylla particular examp 21Y1MZ The basic terminology	d the wave spectrum. Analog and digital modulations. Noises. Filters. Resonance circuits. Electromagnetic field. Electromagnetic was in aviation, radiation and reception of electromagnetic field. Antennas in aviation, receivers and transmitters. Matlab for project-oriented study bus is focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exercises les, based on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improvement Managerial Ethics busy of managerial ethics. Basics of etiquette and rules of social contact. Social events. Etiquette of working contacts. The art of presents image. Diplomatic protocol. Managerial ethics. Business ethics.	KZ ve propagation. W KZ s will be prepared a ent of students' Ma KZ ation and negotiation	2 /ave ranges 2 according to htlab skills. 2 on. Personal
21Y1MP The subject's sylla particular examp 21Y1MZ The basic terminology	d the wave spectrum. Analog and digital modulations. Noises. Filters. Resonance circuits. Electromagnetic field. Electromagnetic was in aviation, radiation and reception of electromagnetic field. Antennas in aviation, receivers and transmitters. Matlab for project-oriented study bus is focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exercises les, based on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improvement Managerial Ethics Business ethics. Basics of etiquette and rules of social contact. Social events. Etiquette of working contacts. The art of presents image. Diplomatic protocol. Managerial ethics. Business ethics. Human Resources Management	KZ ve propagation. W KZ s will be prepared a ent of students' Ma KZ ation and negotiatio	2 ave ranges 2 according to outlab skills. 2 on. Personal
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21Y1MP The subject's sylla particular examp 21Y1MZ The basic terminole 21Y1RZ The position of	d the wave spectrum. Analog and digital modulations. Noises. Filters. Resonance circuits. Electromagnetic field. Electromagnetic was in aviation, radiation and reception of electromagnetic field. Antennas in aviation, receivers and transmitters. Matlab for project-oriented study bus is focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exercises les, based on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improvement Managerial Ethics Business ethics. Basics of etiquette and rules of social contact. Social events. Etiquette of working contacts. The art of presents image. Diplomatic protocol. Managerial ethics. Business ethics. Human Resources Management The project-oriented study The subject will have a flexible form, which is expected to bring an improvement image. Diplomatic protocol. Managerial ethics. Business ethics. Human Resources Management The project-oriented study The subject will have a flexible form, which is expected to bring an improvement in the organization and related disciplines file. Substance, importance and challenges of human resources management in the organization and related disciplines file. Substance, importance and challenges of human resources management in the organization and related disciplines file.	KZ ve propagation. W KZ s will be prepared a ent of students' Ma KZ ation and negotiation KZ ement. Internal and	2 according to outlab skills. 2 on. Personal 2 d external
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21Y1MP The subject's sylla particular examp 21Y1MZ The basic terminole 21Y1RZ The position of lenvironment of hun 21Y1TH	d the wave spectrum. Analog and digital modulations. Noises. Filters. Resonance circuits. Electromagnetic field. Electromagnetic was in aviation, radiation and reception of electromagnetic field. Antennas in aviation, receivers and transmitters. Matlab for project-oriented study bus is focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exercises les, based on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improvement Managerial Ethics. Managerial Ethics. Managerial ethics. Basics of etiquette and rules of social contact. Social events. Etiquette of working contacts. The art of presents image. Diplomatic protocol. Managerial ethics. Business ethics. Human Resources Management numan resources in the organization and related disciplines file. Substance, importance and challenges of human resources 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.	KZ ve propagation. W KZ s will be prepared a ent of students' Ma KZ ation and negotiation KZ ement. Internal and nuneration of staff.	2 according to that skills. 2 on. Personal 2 external Positioning,
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21ZYL2	Principles of Flight 2	Z,ZK	5
Ways of producing	thrust, propeller, jet propulsion, thrust and momentum, propulsion efficiency, aerodynamics of fixed and variable pitch propeller, prope	ller operation mod	es, propeller
airstream effect,	gyroscopic effect, balance of forces in horizontal flight, glide and landing, performances, take off an climb, acceleration, positive load	d, manoevures, sta	ability and
	controllability, transsonic speeds.		
22X31	Project 1	Z	2
22X32	Project 2	Z	2
22X33	Project 3	Z	2
22Y1SZ	Forensic Expertise	KZ	2
Historical evolution	n of forensic engineering, forensic activity, current legislature in the Czech Republic, different disciplines, notion of forensic, forensic l	egislation, basic fo	rensic acts,
expert role in the	obtaining proofs, forensic methodology. Notion of the evidence, general principles of evidence obtaining, metrology, protocol, evidence	ces collection, site	inspection,
	forensic report, elements. Finding, expert testimony / report.		
23X31	Project 1	Z	2
23X32	Project 2	Z	2
23X33	Project 3	Z	2
23Y1DZ	Data and Their Processing for Engineering Fields Needs	KZ	2
Courses of risk, ba	sic terms, data collection, data sets, data random uncertainty and data epistemic uncertainty, data processing, hazard, risk, value so	ales, analytical, e	mpirical and
	heuristic methods, hazard determination and risk determination, methods for variants' creation, decision support systems		
23Y1KO	Quantum Physics and Optoelectronics	KZ	2
	Ground of quantum physics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics compo	nents.	
23Y1OK	Protection of Critical Objects and Infrastructures	KZ	2
Types of technolog	ical systems, critical item, risks and their courses, criticality, vulnerability, connectivity, dependability, resilience, failure, protection, safe	ty of critical object	s and critical
	infrastructures.		
23Y1VS	Negotiation and Cooperation	KZ	2
Code of conduct for	r negotiation. The influence of personality traits on the negotiations. Negotiation and commanding. Teamwork. Variants teams. Inform	nal and formal role	in the team.
Principles of negot	iation, the essence of negotiation, the differences in negotiation in business and in crisis situations, the principle of "win both", specific	cations and biddin	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 09. 04. 2020, time 20:38.