Study plan

Name of study plan: LED bak.prez.16/17

Faculty/Institute/Others:

Department:

Branch of study guaranteed by the department: Welcome page

Garantor of the study branch:

Program of study: Technology in Transportation and Telecommunications

Type of study: Bachelor full-time

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

Note on the plan:

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

The role of the block: Z

Code of the group: 1.S.BP 15/16

Name of the group: 1.sem.bak.prez. od 15/16

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

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

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

Credits in the group: 28 Note on the group:

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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 Olga Vraštilová, Tomáš Tasák, Magdalena Hykšová, Bohumil Ková, Ond ej Navrátil Bohumil Ková Ond ej Navrátil (Gar.)	Z,ZK	7	2P+4C+22E	s z	Z
11LA	Linear Algebra Lucie Kárná, Pavel Provinský, Martina Be vá ová Martina Be vá ová Martina Be vá ová (Gar.)	Z,ZK	3	2P+1C+10E	B Z	Z
12ZYDI	Introduction to Transportation Engineering Vojt ch Novotný, Zuzana arská, Dagmar Ko árková	Z,ZK	2	1P+1C	Z	Z
18MTY	Materials Science and Engineering Nela Kr má ová, Jan Falta, Radim Dvo ák, Václav Rada, Jitka ezní ková, Jaroslav Valach, Jaroslav Valach Jaroslav Valach (Gar.)	Z,ZK	3	2P+1C+10E	B Z	Z
20SYSA	Systems Analysis Zuzana B linová, Ji í R ži ka, Petr Bureš Zuzana B linová (Gar.)	Z,ZK	5	2P+2C+14E	B L	Z
11GIE	Geometry Pavel Provinský, Old ich Hykš, Šárka Vorá ová Old ich Hykš Old ich Hykš (Gar.)	KZ	3	2P+2C+12E	B Z	Z
18TED	Technical Documentation Jitka ezní ková, Vít Malinovský Jitka ezní ková (Gar.)	KZ	2	1P+1C+8E	B Z	Z
16UDOP	Introduction into Vehicles Zuzana Radová, Petr Bouchner	Z	2	2P+0C+8E	B Z	Z
TV-1	Physical Education	Z	1		Z	Z

Characteristics of the courses of this group of Study Plan: Code=1.S.BP 15/16 Name=1.sem.bak.prez. od 15/16

	and dearest of time group of clady I fam bode - 110.21 10, 10 fame - 110011110 and proze ou 10,		
11CAL1	Calculus 1	Z,ZK	7
Sequence of real number	ers and its limit. Basic properties of mappings. Function of one real variable, its limit and derivative. Geometric properties of n-	dimensional Eukl	idean space and
Cartesian coordinate sy	stem. Geometric meaning of the differential of functions several real variables, differential calculus of functions of several real	ıl variables.	
11LA	Linear Algebra	Z,ZK	3
Vector spaces (linear co	mbinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and	their solvability. D	eterminants and
their applications. Scala	r product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classification.		
12ZYDI	Introduction to Transportation Engineering	Z,ZK	2
Role of transportation in	land-use planning. Basic terms in transportation engineering. Traffic survey and traffic prognosis. Introduction to topic of road	s, public mass tra	nsport. Negative
impacts of transportatio	n to environment and safety.		
18MTY	Materials Science and Engineering	Z,ZK	3
Basic course of materia	s science and engineering explains mechanical properties of structural materials based on their bonding forces and microstru	ucture. However th	ne main attention
is paid to metals as the	most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and	composites. Atter	ntion is also paid

20SYSA	Systems Analysis	Z,ZK	5
Introduction to system s	ciences, system viewpoint, terminology, typical system analysis tasks, system identification, system interface and interface ta	sks, processes, s	ystem behaviour
and its analysis, strong	functions and processes, genetic code, system identity, system architecture. Tools for system analysis - Petri nets, decision t	ables, algorithms	for structural
tasks. Soft and hard sys	stems, methods for soft system analysis.		
11GIE	Geometry	KZ	3
Differential geometry of	curves - parameterization, the arc of the curve, torsion and curvature, Frenet's trihedron. Kinematics - a curve as a trajector	y of the motion, th	ne velocity, and
acceleration of a particle	e moving on a curved path.		
18TED	Technical Documentation	KZ	2
Technical standards, int	ernational standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimension	nal and geometric	al accuracy,
arrangement of drawing	sheets.		
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 w	ater transport. Alt	ernative means
of transport. Lifting equi	pment and conveyors. Legislation.		
TV-1	Physical Education	Z	1

Code of the group: 1.S.BP VÝB R 15/16

Name of the group: 1.sem.bak. prez výb r p edm tu od 15/16

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

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

Credits in the group: 2 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
14AS	Algorithm and Data Structures	KZ	2	0+2	Z	Z
14AZ	Data Analysis and Processing	KZ	2	0+2	Z	Z
14DB	Database Systems	KZ	2	0+2	Z	Z

Characteristics of the courses of this group of Study Plan: Code=1.S.BP VÝB R 15/16 Name=1.sem.bak. prez výb r p edm tu od 15/16

14AS 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 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.

14AZ Data Analysis and Processing KZ 2
Main aim of this course is learn students how to prepare raw data for following processing and analysis. Knowledge of algorithms for determining the parameters of different data

sources; source can be used images, text, time series, etc. The next step is the theoretical skills and knowledge to apply in solving the problem, e. g. extraction parameters from the image data or from the Internet.

14DB Database Systems KZ 2
Basic concepts of database systems, conceptual model, relational data model, the principles of normal forms, relational database design, security and integrity of data, database

queries, relational algebra, SQL language, client / server, multilayer architectures, distributed database systems. Access to data via the WWW.

Code of the group: 2.S.BP 15/16

Name of the group: 2.sem.bak.prez. 15/16

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

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

Credits in the group: 28

Note on the group:

Note on the	group.					
Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11CAL2	Calculus 2 Olga Vraštilová, Tomáš Tasák, Magdalena Hykšová, Ond ej Navrátil, Old ich Hykš Ond ej Navrátil Ond ej Navrátil (Gar.)	Z,ZK	5	2P+3C+20E	L L	Z
11FY1	Physics 1	Z,ZK	4	2P+2C	L	Z
11STAS	Statistics	Z,ZK	5	2P+2C	L	Z
12ZTS	Railway Lines and Stations Lukáš Týfa, Petr Šatra, Martin Jacura, Tomáš Javo ík, Ond ej Trešl Lukáš Týfa (Gar.)	Z,ZK	4	2P+2C+10E	B L	Z
18SAT	Structural Analysis Nela Kr má ová, Jan Falta, Jitka ezní ková, Daniel Kytý, Jan Vy ichl, Tomáš Doktor, Jan Šleichrt Daniel Kytý (Gar.)	Z,ZK	4	2P+2C+14E	L L	Z
17TEDL	Transport Technology and Logistics Michal Drábek, Zden k Michl, Milan K íž, Ji í Pospíšil, Rudolf Vávra	KZ	3	2P+1C	L	Z

21ZALD	Basics of Air Transport Jakub Hospodka, Tomáš Tlu ho , Ji í Volt, Peter Olexa, Jan Slezá ek, Jakub Trýb	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 15/16 Name	e=2.sem.bak	prez. 15		771/	

_	Calculus 2	Z,ZK	5
Indefinite integral, New	tonian integral, Riemannian integral of the function of one variable, improper Riemannian integral, Riemannian integral in Rn.	Parametric descr	iption of regular
k-dimensional surfaces	in Rn, Riemannian integral over regular surfaces. Line and surface integrals of the second type, Stokes theorems, ordinary d	lifferential equatio	ns of the first
order, linear differentia	equations with constant coefficients and its systems		
11FY1	Physics 1	Z,ZK	4
Kinematics, particle dy	namics, dynamics of particle systems and rigid body. Continuum mechanics, thermodynamics, electric field, directed electric	current.	
11STAS	Statistics	Z,ZK	5
Definition of probability	random variable and its description, known distributions, random vector, function of random variable. Methods of point estimation	on. Testing of statis	stical hypothesis
Regression and correla	tion, linear regression, correlation coefficient, coefficient of determination, the general linear model, statistical inference in linea	ar regression, ana	lysis of variance
multiple regression, the	e 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	ailway 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 force	es in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determina	, ato beams and sir	
		ale beallis allu sii	nple girders.
Principle of virtual work	Kinematic method for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction		
Principle of virtual work of planar shapes. Fiber			
•			
of planar shapes. Fiber	polygons and chains.	ns. Cross-section	al characteristics
of planar shapes. Fiber 17TEDL Basic terms in transpo	polygons and chains. Transport Technology and Logistics	ons. Cross-section KZ transport, organis	al characteristics 3 ation of traffic in
of planar shapes. Fiber 17TEDL Basic terms in transpo	polygons and chains. Transport Technology and Logistics t technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and freight t	ons. Cross-section KZ transport, organis	al characteristics 3 ation of traffic in
of planar shapes. Fiber 17TEDL Basic terms in transporeach transport modus, 21ZALD	polygons and chains. Transport Technology and Logistics t technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and freight t technologic factors of the side of operator and client, organisation of city transport, logistic technologies and their aplication u	KZ transport, organis using various trans	al characteristics 3 ation of traffic in sport modus.
of planar shapes. Fiber 17TEDL Basic terms in transporeach transport modus, 21ZALD History, definitions, term	polygons and chains. Transport Technology and Logistics t technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and freight t technologic factors of the side of operator and client, organisation of city transport, logistic technologies and their aplication u Basics of Air Transport	KZ transport, organis using various trans KZ transport, was trans	3 ation of traffic in sport modus. 2 ce, performance
of planar shapes. Fiber 17TEDL Basic terms in transporeach transport modus, 21ZALD History, definitions, term	polygons and chains. Transport Technology and Logistics technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and freight t technologic factors of the side of operator and client, organisation of city transport, logistic technologies and their aplication u Basics of Air Transport binology, basic rules. VFR/IFR. Basics of aerodynamics. Propulsion of aircraft. Aircraft design. Basics of navigation, radio navigation of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic management, g	KZ transport, organis using various trans KZ transport, was trans	3 ation of traffic in sport modus. 2 ce, performance

Code of the group: 2.S.BP VÝB R 15/16

Name of the group: 2.sem.bak. prez výb r p edm tu od 15/16

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

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

Credits in the group: 2 Note on the group:

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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
14KSP	Constructing with Computer Aid Martin Brumovský, Martin Fiala, Radek Kratochvíl, Lukáš Svoboda, Jan Vogl, Drahomír Schmidt Lukáš Svoboda Drahomír Schmidt (Gar.)	KZ	2	0P+2C+8B	Z	Z
14PRG	Programming Martin Fiala, Lukáš Svoboda, Jana Kaliková, Jan Kr ál, Alena Plašilová, Jan Procházka, Jan Kr ál, Jana Kaliková (Car.)	KZ	2	0P+2C+8B	L	Z

Characteristics of the courses of this group of Study Plan: Code=2.S.BP VÝB R 15/16 Name=2.sem.bak. prez výb r p edm tu od 15/16

14KSP Constructing with Computer Aid KZ 2

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

14PRG Programming KZ 2

The Course Programming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python programming language is expanded here so that the participant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and searching, tuples, sets, dictionaries, working with date and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML).

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 Ková, Lucie Kárná, Jana Kuklová Jana Kuklová Bohumil Ková (Gar.)	Z,ZK	4	2P+2C+12E	L	Z
21LTN	Air Navigation Jakub Kraus	Z,ZK	2	2P+1C+12E	L	Z
21LTTE	Aerodromes Ladislav Capoušek	Z,ZK	4	2P+1C+12E	L	Z
21ZYL1	Principles of Flight 1 Vladimír Machula	Z,ZK	5	2P+2C+16E	L	Z
21LL1	Aircraft 1 Jakub Kraus	KZ	3	2P+1C+10E	L	Z
21MRG	Meteorology Iveta Kameníková	KZ	3	1P+1C+10E	L	Z
21ULCT	Aircraft Maintenance Tomáš Parýzek	Z	2	2P+0C+8E	L	Z
15JZ2A	Foreign Language - English 2 Dana Boušová, Marie Michlová, V ra Pastorková, Jan Feit, Eva Rezlerová, Jitka He manová, Markéta Musilová, Markéta Vojanová, Peter Morpuss,	Z,ZK	3	0P+4C+10E		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

Code of the group: 3.S.BP 16/17

Name of the group: 3.sem.bak.prez.od 16/17

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

stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles of rhetoric.

Credits in the group: 30 Note on the group:

	3					
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
11FY2	Physics 2	Z,ZK	4	2+2	Z	Z
12MDE	Transport Models and Transport Excesses Milan Dont, Josef Kocourek	Z,ZK	3	2P+1C+8B	B Z	Z
17TGA	Graph Theory and its Applications in Transport Alena Rybi ková, Denisa Mocková, Dušan Teichmann	Z,ZK	4	2P+2C+12B	B Z	Z
18PZP	Elasticity and Strength Nela Kr má ová, Jan Falta, Radim Dvo ák, Jitka ezní ková, Daniel Kytý, Jan Vy ichl. Tomáš Doktor, Jan Šleichrt, Tomáš Fíla,	Z,ZK	3	2P+1C+10B	3 Z	Z

20UITS	Introduction to Intelligent Transport Systems Ji í R ži ka, Patrik Horaž ovský, Kristýna Navrátilová, Viktor Beneš, Eva Haj iarová, Martin Langr, Vladimír Faltus, Pavel Hrubeš	Z,ZK	7	3P+2C+20B	Z	Z
12PPOK	Designing Roads, Highways and Motorways Petr Šatra, Josef Kocourek, Tomáš Pad lek, Petr Kumpošt	KZ	3	1P+2C+10B	Z	Z
23BDIS	Safety Technologies of Transportation and Information Systems	KZ	3	2+0	Z	Z
15JZ1A	Foreign Language - English 1 Dana Boušová, Marie Michlová, Jan Feit, Eva Rezlerová, Jitka He manová, Markéta Musilová, Markéta Vojanová, Peter Morpuss, Lenka Monková,	Z	3	0P+4C+10B	Z	Z
	s of the courses of this group of Study Plan: Code=3.S.BP 16/17 Name	e=3.sem.bak	.prez.od	· ·		
11FY2	Physics 2			1 Z	ZK	4

	Markéta Musilová, Markéta Vojanová, Peter Morpuss, Lenka Monková,		
Characteristics o	of the courses of this group of Study Plan: Code=3.S.BP 16/17 Name=3.sem.bak.prez.od 16/	17	
11FY2	Physics 2	Z,ZK	4
Magnetic field, electro solid body physics.	magnetic field. Optics, quantum character of electromagnetic radiation. Introduction into quantization, hydrogen atom. Multi-ele	ectron atoms, the nu	ıclei. Basics o
12MDE	Transport Models and Transport Excesses	Z,ZK	3
	fic flow and methods for their measurement. Models of the traffic flow, communications load, line and urban systems. Theory of ssment. Statistical characteristics of transport. Transport excesses, their analysis, the causes, identify and minimize the consecutive.		,
17TGA	Graph Theory and its Applications in Transport	Z,ZK	4
	Graph Theory and its Applications in Transport theory, paths in graphs, flows in networks, location problems, design problems on graphs, optimum routing, use of graphs in oth		•
			3
18PZP	Elasticity and Strength	Z,ZK	_
•	sion. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolte curve of beams. Torsion of circular cross sections. Combined loading. Stability.	and welded joints	s or structure
20UITS	Introduction to Intelligent Transport Systems	Z.ZK	7
	lative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamentals of ir	, ,	communication
٠, ٠	iples and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real examp		
12PPOK	Designing Roads, Highways and Motorways	KZ	3
Definition, types, owner	ership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standa		rural areas.
	pping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Si	•	
intersections.		•	0 / 1
23BDIS	Safety Technologies of Transportation and Information Systems	KZ	3
Safety of transportatio	on means - principles, testing, evaluation. Safety of infrastructures, critical structures, crisis scenarios. Safety of information sys	tems and their robu	ıstness.
15JZ1A	Foreign Language - English 1	Z	3
	es and Style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and written presentation of original research. Academic text principles and reading comprehension. Principles of rhetoric.	I communicative ski	lls. Elementa

Code of the group: 5.S.BLED 17/18

Name of the group: 5.sem.LED bak.prez. (od) 17/18

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 Z.ZK 2P+1C Z.L 3 7 Daniel Hanus, Tomáš Parýzek **Daniel Hanus** 21LGP Z,ZK 5 2P+2C Ζ 7 **Legislation and Operational Regulations** Aircraft 2 21LTA2 Z,ZK 2P+1C Ζ Ζ Karel Mündel Karel Mündel ATM Systems 21ZT ZK 2 2P+0C Z,LΖ Vladimír Machula, Stanislav Pleninger Stanislav Pleninger (Gar.) Principles of Flight 2 21ZYL2 Z,ZK 5 2P+2C Z Z P emysl Vávra, Marek Veselý P emysl Vávra English for Aviation 1 Ζ 21LAG1 ΚZ 3 0P+2C Ζ Jitka He manová Jitka He manová **Airport Design and Operation** 21PDLE ΚZ 3 1P+1C Ζ Petr Líka Petr Líka

Characteristics of the courses of this group of Study Plan: Code=5.S.BLED 17/18 Name=5.sem.LED bak.prez. (od) 17/18

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21LCM	Aircraft Engines	Z,ZK	3				
Aircraft piston engine, the	Aircraft piston engine, theoretical background, operational characteristics and construction schemes. Propellers, operational characterictics. Turbine engine, theoretical background,						
thermal cycles, construc	ction schemes, operational characteristics. Turbojet and turbofan engines, basic construction modules, and their operational	characteristics. Er	igine control.				
21LGP	Legislation and Operational Regulations	Z,ZK	5				
Introduction into aviation regulations. The scope of international and national organizations in civil aviation. Analysis and interpretation of the ICAO Annexes 1-19, ICAO Docs. 4444,							
7030, 8168. Introduction	n to the European Parliament and Council Regulation (EC), Commission Regulation (EU) and the Decisions of the Executive	Director of EASA	١.				

21LTA2	Aircraft 2	Z,ZK	2
Manufacturers response	onsibility, responsibilities of operator and professional supervising. Legislation in area of airworthiness. International and national	standards. Static	solidity of aircraf
structures. Aeroelas	ticity. Inherent and operational reliability of aircraft structure. Fatigue strength. Aircraft structure lifetime presumption.		
21ZT	ATM Systems	ZK	2
The course introduc	es classical and modern facilities, systems and technologies designated for ATS. Student obtains knowledge of technical princi	ples and solutions	as far as
communication, nav	igation and surveillance aviation systems are concerned.		
21ZYL2	Principles of Flight 2	Z,ZK	5
Static & amp; dynam	ic longitudinal stability, neutral point, location of centre of gravity, static directional & lateral stability, dynamic directional &a	mp; lateral stabilit	y, control – pitch
(longitudinal), yaw (directional) & roll (lateral), roll/yaw interaction, trimming, speed of sound, Mach number, compressibility, shock waves, critic	al Mach number,	aerodynamic
heating, operating li	mitations, manoeuvring envelope, gust-load diagram.		
21LAG1	English for Aviation 1	KZ	3
Familiarity with the t	erminology used in civil aviation in the general context and emphasizing the ability to receive information only in English.		
21PDLE	Airport Design and Operation	KZ	3
Methods for the new	airports design. Existing airports development. A closer look at the development of the airports operational areas. Certification of t	he operating area	s and procedures
by ICAO Airports Ma	anual. Development planning and project preparation, regulatory basis.		

Code of the group: 6.S.BLED 17/18

Name of the group: 6.sem.LED bak.prez. 17/18

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 Eva Endrizalová, Peter Vittek Peter Vittek	Z,ZK	4	2P+2C+14E	L L	Z
21LIVO	Human Performance and Limitations	Z,ZK	5	2P+2C+14E	B L	Z
210BP	Air Transport Business Eva Endrizalová, Peter Vittek	Z,ZK	3	2P+1C+12E	B L	Z
21PAP	Flight Planning and Performance Ladislav Capoušek Anna Polánecká (Gar.)	Z,ZK	4	2P+2C+14E	B L	Z
21LAG2	English for Aviation 1	KZ	3	0P+2C+10E	B L	Z
21PJE	Aircraft Instruments	KZ	2	2P+0C+8E	B L	Z
21RILP	Air Traffic Control	Z	2	0P+2C+8E	B L	Z

21ELED	Air Transport Economy	Z,ZK	4
The economics of	air transport is a key subject for understanding market relations in air transport. The introduction is devoted to understanding	the basic economic pr	inciples. This is
followed by a pract	tical section that economic linkages in the domain of airlines.		
21LIVO	Human Performance and Limitations	Z,ZK	5
Human performac	e & limitations, aptibility & competence, accident statistics, flight safety, basics of flight physiology, man & envi	ronment, breathing &ar	mp; circulation,
sensory system, h	ealth & hygiene, health preservation, intoxication, incapacitation, basics of flight psychology, human information process	sing, memory & le	arning, theory
& model of hu	uman error, body rhythms & sleep, stress, fatigue, working methods.		
210BP	Air Transport Business	Z,ZK	3
Aviation business	and transport operations is a core subject for understanding operational relationships in air transport. It focuses on the proce	ss and functional arran	gements as we
as the economic a	spects and infrastructure of air transport.		
as the economic a 21PAP	spects and infrastructure of air transport. Flight Planning and Performance	Z,ZK	4
21PAP		1 '	
21PAP Mass and balance.	Flight Planning and Performance	cteristic speeds. Runwa	y characteristics
21PAP Mass and balance.	Flight Planning and Performance Load of aircraft. Determination of centre of gravity - loadsheet, trimsheet. Aircraft weighing. Overloading of aircraft. Basic character performance. Drift down. ETOPS. MEL. Flight planning and monitoring. Routing. FL and speeds selection. Charts. ICAO AT	cteristic speeds. Runwa	y characteristics
21PAP Mass and balance. Take off and landir	Flight Planning and Performance Load of aircraft. Determination of centre of gravity - loadsheet, trimsheet. Aircraft weighing. Overloading of aircraft. Basic character performance. Drift down. ETOPS. MEL. Flight planning and monitoring. Routing. FL and speeds selection. Charts. ICAO AT	cteristic speeds. Runwa	y characteristics
21PAP Mass and balance. Take off and landir Fuel plan. Operatio	Flight Planning and Performance Load of aircraft. Determination of centre of gravity - loadsheet, trimsheet. Aircraft weighing. Overloading of aircraft. Basic character of performance. Drift down. ETOPS. MEL. Flight planning and monitoring. Routing. FL and speeds selection. Charts. ICAO AT onal flight plan.	cteristic speeds. Runwa C FPL. Aerodrom oper	y characteristics ation minimums
21PAP Mass and balance. Take off and landir Fuel plan. Operatio 21LAG2 21PJE	Flight Planning and Performance Load of aircraft. Determination of centre of gravity - loadsheet, trimsheet. Aircraft weighing. Overloading of aircraft. Basic character performance. Drift down. ETOPS. MEL. Flight planning and monitoring. Routing. FL and speeds selection. Charts. ICAO AT onal flight plan. English for Aviation 1	cteristic speeds. Runwa C FPL. Aerodrom oper KZ KZ	y characteristics ation minimums 3
21PAP Mass and balance. Take off and landir Fuel plan. Operatio 21LAG2 21PJE Overview of aircra	Flight Planning and Performance Load of aircraft. Determination of centre of gravity - loadsheet, trimsheet. Aircraft weighing. Overloading of aircraft. Basic character performance. Drift down. ETOPS. MEL. Flight planning and monitoring. Routing. FL and speeds selection. Charts. ICAO AT onal flight plan. English for Aviation 1 Aircraft Instruments	cteristic speeds. Runwa C FPL. Aerodrom oper KZ KZ air data computer, icing	y characteristics ation minimums 3
21PAP Mass and balance. Take off and landir Fuel plan. Operatio 21LAG2 21PJE Overview of aircra	Flight Planning and Performance Load of aircraft. Determination of centre of gravity - loadsheet, trimsheet. Aircraft weighing. Overloading of aircraft. Basic character performance. Drift down. ETOPS. MEL. Flight planning and monitoring. Routing. FL and speeds selection. Charts. ICAO AT onal flight plan. English for Aviation 1 Aircraft Instruments ft instrumentation and its principles and construction, aircraft electrical systems, engine measuring and monitoring systems, and the surface of the	cteristic speeds. Runwa C FPL. Aerodrom oper KZ KZ air data computer, icing	y characteristics ation minimums 3
21PAP Mass and balance. Take off and landir Fuel plan. Operation 21LAG2 21PJE Overview of aircra systems, gyroscop 21RILP	Flight Planning and Performance Load of aircraft. Determination of centre of gravity - loadsheet, trimsheet. Aircraft weighing. Overloading of aircraft. Basic character performance. Drift down. ETOPS. MEL. Flight planning and monitoring. Routing. FL and speeds selection. Charts. ICAO AT onal flight plan. English for Aviation 1 Aircraft Instruments ft instrumentation and its principles and construction, aircraft electrical systems, engine measuring and monitoring systems, soic indicators, inertial and radio navigation means, communication means, data recorders, complex flight and navigation data	cteristic speeds. Runwa C FPL. Aerodrom oper KZ KZ air data computer, icing processing systems. Z	y characteristics ation minimums 3 2 g monitoring
21PAP Mass and balance. Take off and landir Fuel plan. Operation 21LAG2 21PJE Overview of aircra systems, gyroscop 21RILP Air traffic services	Flight Planning and Performance Load of aircraft. Determination of centre of gravity - loadsheet, trimsheet. Aircraft weighing. Overloading of aircraft. Basic characters performance. Drift down. ETOPS. MEL. Flight planning and monitoring. Routing. FL and speeds selection. Charts. ICAO AT onal flight plan. English for Aviation 1 Aircraft Instruments ft instrumentation and its principles and construction, aircraft electrical systems, engine measuring and monitoring systems, plic indicators, inertial and radio navigation means, communication means, data recorders, complex flight and navigation data Air Traffic Control	cteristic speeds. Runwa C FPL. Aerodrom oper KZ KZ air data computer, icing processing systems. Z aircraft flying through sp	y characteristics ation minimums 3 2 g monitoring 2 pace. Flight 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. (od)13/14 - pro B3710

Requirement credits in the group: In this group you have to gain 6 credits Requirement courses in the group: In this group you have to complete 3 courses Credits in the group: 6

Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11X31	Project 1	Z	2	0P+1C	L	ZP
12X31	Project 1	Z	2	0P+1C	L	ZP
14X31	Project 1	Z	2	0P+1C	L	ZP
15X31	Project 1	Z	2	0P+1C	L	ZP
16X31	Project 1	Z	2	0P+1C	L	ZP
17X31	Project 1 Michal Drábek, Zden k Michl, Milan K íž, Ji í Pospíšil, Rudolf Vávra, Alena Rybi ková, Denisa Mocková, Dušan Teichmann, Roman Št rba, Václav Baroch (Gar.)	Z	2	0P+1C	L	ZP
18X31	Project 1	Z	2	0P+1C	L	ZP
20X31	Project 1 Ji i R ži ka	Z	2	0P+1C	L	ZP
21X31	Project 1 Jakub Hospodka, Peter Vittek, Jakub Kraus, Andrej Lališ, Slobodan Stoji , Lenka Hanáková, Terézia Pilmannová, Natalia Guskova, Kate ina Grötschelová,	Z	2	0P+1C	L	ZP
22X31	Project 1	Z	2	0P+1C	L	ZP
23X31	Project 1 Milena Macková	Z	2	0P+1C	L	ZP
11X32	Project 2	Z	2	0P+2C	Z	ZP
12X32	Project 2	Z	2	0P+2C	Z	ZP
14X32	Project 2	Z	2	0P+2C	Z	ZP
15X32	Project 2	Z	2	0P+2C	Z	ZP
16X32	Project 2 Petr Bouchner, Tereza Kunclová	Z	2	0P+2C	Z	ZP
17X32	Project 2 Michal Drábek, Zden k Michl, Milan K íž, Ji í Pospíšil, Rudolf Vávra, Alena Rybi ková, Denisa Mocková, Dušan Teichmann, Andrea Hrní ková,	Z	2	0P+2C	Z	ZP
18X32	Project 2	Z	2	0P+2C	Z	ZP
20X32	Project 2	Z	2	0P+2C	Z	ZP
21X32	Project 2 Jakub Hospodka, Eva Endrizalová, Peter Vittek, Jakub Kraus, Andrej Lališ, Slobodan Stoji, Lenka Hanáková, Terézia Pilmannová, Natalia Guskova,	Z	2	0P+2C	Z	ZP
22X32	Project 2	Z	2	0P+2C	Z	ZP
23X32	Project 2	Z	2	0P+2C	Z	ZP
11X33	Project 3	Z	2	0P+1C	L	ZP
12X33	Project 3 Dagmar Ko árková, Josef Kocourek, Tomáš Pad lek	Z	2	0P+1C	L	ZP
14X33	Project 3	Z	2	0P+1C	L	ZP
15X33	Project 3	Z	2	0P+1C	L	ZP
16X33	Project 3	Z	2	0P+1C	L	ZP
17X33	Project 3 Michal Drábek, Zden k Michl, Milan K íž, Ji í Pospíšil, Rudolf Vávra, Alena Rybi ková, Denisa Mocková, Dušan Teichmann, Roman Št rba, Václav Baroch (Gar.)	Z	2	0P+1C	L	ZP
18X33	Project 3	Z	2	0P+1C	L	ZP
20X33	Project 3	Z	2	0P+1C	L	ZP
21X33	Project 3 Andrej Lališ, Slobodan Stoji , Lenka Hanáková, Terézia Pilmannová, Lukáš Popek, Iveta Kameníková, Milan Kameník, Marek Šudoma, Viktor Valenta,	Z	2	0P+1C	L	ZP
22X33	Project 3	Z	2	0P+1C	L	ZP
23X33	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. (od)13/14 - pro B3710

11X31	Project 1	Z	2
12X31	Project 1	Z	2
14X31	Project 1	Z	2
15X31	Project 1	Z	2

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

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 16/17

Name of the group: PVP bak.prez.LED 16/17

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

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

Credits in the group: 6
Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
17Y1AF	Alternative Forms of Transportation Project Financing	KZ	2	2+0	Z	PV
18Y1AM	Anatomy, Mobility and Safety of Man Jitka Jírová	KZ	2	2P+0C	Z	PV
14Y1AV	Animation and Visualization	KZ	2	2P+0C	L	PV
20Y1AE	Applied Electronics	KZ	2	2P+0C	Z	PV
14Y1BE	Barrierless Transport Jan Kr ál	KZ	2	2P+0C	L	PV
15Y1BO	Work Safety and Health Protection in Transportation Eva Rezlerová, Petr Musil	KZ	2	2P+0C	L	PV
14Y1BM	Biometric Methods	KZ	2	2P+0C	Z	PV
23Y1DZ	Data and Their Processing for Engineering Fields Needs	KZ	2	2P+0C	Z	PV
15Y1DU	History of Art and Society	KZ	2	2+0	Z	PV
15Y1DZ	History of Railway Martin Jacura, Eva Rezlerová	KZ	2	2P+0C	L	PV
12Y1DS	Project Documentation in Practice	KZ	2	2P+0C	Z	PV
17Y1EV	Public Sector Economy Veronika Faifrová	KZ	2	2P+0C	Z	PV
20Y1EK	Qualification in Electrical Engineering	KZ	2	2P+0C	L	PV

16Y1EN	Energy Requirements of Vehicles	KZ	2	2P+0C	L	PV
20Y1EA	Environmental Aspects of Transport	KZ	2	2P+0C	Z	PV
15Y1EH	European Integration within Historical Context	KZ	2	2P+0C	Z	PV
18Y1EM	Experimental Methods in Mechanics Daniel Kytý	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	KZ	2	2P+0C	L	PV
14Y1HW	Computer Hardware	KZ	2	2P+0C	L	PV
15Y1HL	History of Civil Aviation Eva Rezlerová, Vladímír Plos	KZ	2	2P+0C	L,Z	PV
15Y1HD	History of City Mass Transport Eva Rezlerová, Milan Dont	KZ	2	2P+0C	Z	PV
12Y1HD	Traffic Noise Dagmar Ko árková, Libor Ládyš	KZ	2	2P+0C	L	PV
15Y1HE	Work Hygiene and Ergonomics in Traffic Eva Rezlerová, Petr Musil	KZ	2	2P+0C	Z	PV
16Y1IS	Interactive simulators and simulations	KZ	2	2P+0C	L	PV
12Y1KN	Combined Transportation	KZ	2	2P+0C	Z	PV
23Y1KO	Petr Nejedlý Quantum Physics and Optoelectronics	KZ	2	2P+0C	L	PV
21Y1LA	Aerobatics	KZ	2	2+0		PV
21Y1LR	Radio Technology in Aviation	KZ	2	2+0	L	PV
17Y1LL	Logistics of Passenger and Freight Air Transport	KZ	2	2P+0C	L	PV
20Y1LN	Petra Skolilová Petra Skolilová (Gar.) Location and Navigation	KZ	2	2P+0C	L	PV
21Y1MZ	Managerial Ethics	KZ	2	2+0	Z	PV
17Y1MD	Marketing in Transportation	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
14Y1MP	Modeling Complex Assemblies and Models in Parametric	KZ	2	2P+0C	Z	PV
17Y1ND	Modeller Maritime Transportation	KZ	2	2+0	Z	PV
15Y1NE	German in the Economy and Society	KZ	2	2P+0C	Z	PV
21Y1OL	Security of Air Transport	KZ	2	2+0	L	PV
23Y1OK	Protection of Critical Objects and Infrastructures	KZ	2	2P+0C	L	PV
20Y1OI	Fare Collection and Information Systems Patrik Horaž ovský, Milan Sliacky Milan Sliacky (Gar.)	KZ	2	2P+0C	L	PV
14Y1OP	Operating System	KZ	2	2P+0C	Z	PV
17Y10F	Personal Finance	KZ	2	2P+0C	Z	PV
11Y1PV	Parametrical and Multicriterial Programming	KZ	2	2P+0C	Z	PV
17Y1PM	Olga Vraštilová Personnel Management	KZ	2	2P+0C	L	PV
12Y1PC	Pedestrian and Cycling Transport	KZ	2	2P+0C	L	PV
14Y1PG	Denis Liutov Computer Graphics	KZ	2	2P+0C	L	PV
14Y1P2	Computer Aid of Transportation Projecting 2	KZ	2	2P+0C		PV
18Y1PS	Computer Simulations in Mechanics	KZ	2	2P+0C	 L	PV
14Y1PI	Petr Zlámal Corporate Information System	KZ	2	2P+0C	Z	PV
14Y1PZ	Advanced Data Processing in Spreadsheets	KZ	2	2P+0C	Z	PV
12Y1PD	Assessment of Transport Structures	KZ	2	2P+0C	Z	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	KZ	2	2P+0C	 L	PV
12Y1C2	Tomáš Honc Designing Roads in Civil 3D II	KZ	2	2P+0C	Z	PV
14Y1PA	Tomáš Honc 3D Modeling in AutoCAD	KZ	2	2P+0C	Z	PV
16Y1PV	Operation, Construction and Maintenance of Vehicles	KZ	2	2P+0C		PV
12Y1PU	Organization Disposition of Railway Stations	KZ	2	2P+0C		PV

16Y1RE	Control and Electronic Vehicle Systems Josef Mik, P emysl Toman	KZ	2	2P+0C	Z	PV
21Y1RZ	Human Resources Management	KZ	2	2P+0C	L	PV
17Y1ST	Titan Simulation	KZ	2	2P+0C	L	PV
20Y1SC	Sensors and Actuators	KZ	2	2P+0C	L	PV
11Y1SI	Transportation Software Engineering Martin P ni ka	KZ	2	2P+0C	Z	PV
22Y1SZ	Forensic Expertise	KZ	2	2P+0C	L	PV
16Y1KS	Quality and Reliability of Vehicles Jaroslav Machan, David Lehet	KZ	2	2P+0C	Z	PV
12Y1SU	Road Management and Maintenance Dagmar Ko árková, Otakar Vacín	KZ	2	2P+0C	L	PV
21Y1TH	Aircraft Technical Handling Peter Olexa	KZ	2	2P+0C	Z	PV
11Y1TG	Graph Theory Lucie Kárná Lucie Kárná (Gar.)	KZ	2	2P+0C	L	PV
14Y1TI	Creating Interactive Internet Applications	KZ	2	2P+0C	L	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 Jitka ezní ková, Josef Kolá	KZ	2	2P+0C	L	PV
12Y1VC	Waterways and Shipping	KZ	2	2P+0C	Z	PV
23Y1VS	Negotiation and Cooperation Milena Macková	KZ	2	2P+0C	Z	PV
14Y1VM	Development of Applications for Mobile Devices	KZ	2	2P+0C	Z	PV
16Y1VT	Development in Railroad Vehicles	KZ	2	2P+0C	L	PV
14Y1W1	Webdesign 1	KZ	2	2P+0C	Z	PV
14Y1W2	Webdesign 2	KZ	2	2P+0C	L	PV
16Y1ZG	Introduction into Applied Computer Graphics	KZ	2	2P+0C	L	PV
21Y1ZA	Basics of Aerobatics	KZ	2	2+0	L	PV
14Y1ZM	Fundamentals of parametric and adaptive modeling	KZ	2	2P+0C	L	PV
11Y1ZM	Foundation of MATLAB Programming Šárka Vorá ová Šárka Vorá ová Sárka Vorá ová (Gar.)	KZ	2	2P+0C	L	PV
12Y1ZU	Principles of Urbanism Karel Hájek	KZ	2	2P+0C	Z	PV
16Y1ZL	Vehicle Testing, Legislation and Construction Zuzana Radová, Josef Mík	KZ	2	2P+0C	Z	PV

11Y1ZM	Foundation of MATLAB Programming Šárka Vorá ová Šárka Vorá ová Sárka Vorá ová (Gar.)	KZ	2	2P+0C	L	PV
12Y1ZU	Principles of Urbanism Karel Hájek	KZ	2	2P+0C	Z	PV
16Y1ZL	Vehicle Testing, Legislation and Construction Zuzana Radová, Josef Mík	KZ	2	2P+0C	Z	PV
Characteristics of	the courses of this group of Study Plan: Code=Y1-BLED 16/17 N	Name=PVP ba	k.prez.L	ED 16/17		
17Y1AF	Alternative Forms of Transportation Project Financing			H	<z td="" <=""><td>2</td></z>	2
There will be specifed s	such forms of financing in transportation, where the public sector body perform the final d	ebtor, i. e. debtor p	ayments co	me from its bu	dget, but th	e final debtor
is not a direct participar	nt of the transaction and it is not the counterparty of the financial institute which provides the	ne funding. Issue of	securities a	s an alternativ	e source of	transportatio
project.						
18Y1AM	Anatomy, Mobility and Safety of Man			ŀ	۲Z	2
Survey of tissues. Anato	omical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomica	al structure of musc	les. Blood o	irculation and	nervous sys	stem. Structur
and biomechanics of m	uscular-skeletal system. Injury of human organs and musculo-skeletal system during traf	fic accidents. Mobil	lity of ill and	l injured man a	and his trea	tment. Humar
joint prostheses. Protect	tive means and traffic safety regulations.					
14Y1AV	Animation and Visualization			l l	ΚZ	2
Advanced modifications	s and modeling of NURBS, Patch objects, selection of objects (according to filter and prope	erties). 3D Studio N	1AX system	s and Space V	Varp objects	s. Atmospheri
and other effects, rende	ering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and	animation, bone for	rmation, an	imation using	nverse Kine	ematics.
20Y1AE	Applied Electronics				ΚZ	2
_*	onductor components, their principles, characteristics and typical connection diagrams. So	emiconductor PN is	unction diod	1 -		_
	ates. Functions of basic electronic circuits and methods for their designs (rectifiers, voltage)	•				•
	g and noninverting amplifier).	0				•
14Y1BE	Barrierless Transport				ΚZ	2
	accessible public transportation in terms of architectural barriers and also for transportation	on-technological po	oint of view.	1 -		cal knowledg
	ent roads, railway stations, public transport stops, terminal buildings, vehicles, public transp			-		•
	will be supplemented by practical examples.	,		.,		
15Y1BO	Work Safety and Health Protection in Transportation				ΚZ	2
	e, definition of terms, risks and possible health damage, working conditions and health pr	otection with focus	on transpo	1 -	1	_
•	ne and foreign business trips, statistics, working practice.		on transpo		p. 0.0000	5. og. a ,
14Y1BM	Biometric Methods				ΚZ	2
	authentication methods, principles and performance measurement of biometric systems,	overview of hiome	tric technol	1 -		_
	od, 2D and 3D face recognition, vein patterns on the wrist, ear biometrics, fingerprint rec				•	•
•	s, safety and risks of biometric technologies.	ogimion, omi opoo	поосору, вс	mavioral mour	000, 1110 001	or biomouno
23Y1DZ	Data and Their Processing for Engineering Fields Needs			l l	ΚZ	2
	erms, data collection, data sets, data random uncertainty and data epistemic uncertainty,	data processing h	nazard riek	ı	- 1	_
			iazuia, iisk	, value soules,	analytical,	ompiniour and
heuristic methods haza	ard determination and risk determination, methods for variants´ creation, decision suppor	t systems.				

15Y1DU	History of Art and Society	KZ	2
History of art - definition buildings. Design of tran	is, terminology, division into periods. Architecture, fine arts, design. Situation in Central Europe, today in the Czech Republic.	Stations, bridges,	, industrial
15Y1DZ	History of Railway	KZ	2
Horse-drawn railways, s	team railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Re		action, World
	levelopment in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connu	ections, railway lin	es construction,
12Y1DS	y junctions. Excursions and projections. Project Documentation in Practice	KZ	2
	reating. Project documentation types. Support materials for project documentation creating. Building permit obtaining proces		
creation of some project	t documentation parts.		-
17Y1EV	Public Sector Economy	KZ	2
	theory of public sector, public choice theory, externalites, decisions about public finance allocation, economic assesment of pate budget, management of public projects a their economic efficiency assessment, way of elaboration of PPP projects, funding		
20Y1EK	Qualification in Electrical Engineering	KZ	2
	h measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock hazar	rd, symbols and la	abeling, nominal
-	red currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legisla	ation, standards a	ind regulations
16Y1EN	safety and electrical engineering. Energy Requirements of Vehicles	KZ	2
	ig inertial of the vehicles. Types of energy - kinetic, static, heat, chemical and others. Ways of energy change into kinetic ener		
	engine. Energy accumulation means, accumulator, flywheel, fuel cell. Energy recuperation. WTW analysis.		-
20Y1EA	Environmental Aspects of Transport	KZ	2
	e, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabiliants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transp		
15Y1EH	European Integration within Historical Context	KZ	2
Versailles system, forma	ation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism.	. Little Entente, its	
•	or's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and	its consequences	s for Europe.
18Y1EM	Serman relationship - a driving power of starting European integration. Experimental Methods in Mechanics	KZ	2
-	f experimental mechanics. Sensors for mechanical testing. Overview of experimental methods. Destructive and non-destructive		
•	s and sample preparation. Tensile and bending tests. Electrical resistance strain gages. Optical based strain measurement. F	atigue and lifetime	e prediction.
	testing. Introduction to electron microscopy. Errors in measurement.	1/7	
21Y1FN Introduction The scope	Factors Affecting the Rate of Accidents in Aviation of international and national organizations in civil aviation. The scope of the investigation organizations within the state and in	KZ nternational comm	2 nittees Analysis
•	AO Annexes 13 and 19. Analysis and interpretation of the Regulation (EC), Regulation (EU). Human factor. Utilization of information of the Regulation (EC) and the second of the Regulation (EU) and the second of the Regulation (EU).		,
reports.			
15Y1FD	French Area Studies and Transportation regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air tra	KZ	2 orminology
	rregions, transport imastructure. Fans and its signis, city public transport. Road traffic, motorways, railway traffic, 13 v, air tra rre. Current political system. System of education, studying in France. Selected authors of French literature. French gastronor	-	erminology.
14Y1HW	Computer Hardware	KZ	2
•	basics of logical circuits design and their realization using FPGA. In detail, description of computer architecture and separate	parts designing -	controllers,
arithmetic and logical ur	·		2
15Y1HL Beginnings of flying, dev	History of Civil Aviation velopment of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of	KZ of airports in the C	
	aviators. Helicopters. CSA airplanes. Development of aircrafts in Czechoslovakia between the years 1945-1989. Classic era	•	
	civil aviation. Airline companies. Supersonic flying.		
15Y1HD	History of City Mass Transport asport in the world, development of tram, bus and trolley-bus systems. History of transport networks in the world, current tren	KZ	2
	ory of city transport in Prague and Brno. History of tram, bus and trolley-bus operation systems in the Czech Republic and SI	•	ents of tariii and
12Y1HD	Traffic Noise	KZ	2
	asic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regulating the standard of the standar		
	n acoustic, noise transmission, soundproofing. Types of noise sources in area. Determination of acoustic situation in the area ement of transport noise. Acoustic studies, measuring protocol.	of interest. Metho	dology of
15Y1HE	Work Hygiene and Ergonomics in Traffic	KZ	2
	upational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of these		of workers.
•	of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technology to	possibilities and	skills of a man.
16Y1IS	the field of transportation; relevant legislature. Interactive simulators and simulations	KZ	2
	pplication of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical m	ı	
Simulation of vehicle dy	namics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simu	lators.	
12Y1KN	Combined Transportation	KZ	2
23Y1KO	ategy and legislation. Load units. Means of transport in combined transport. Combined transport systems. Transshipping area Quantum Physics and Optoelectronics	s. Multimodal logi:	stic centres.
	sics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics components.	rν	۷
21Y1LA	Aerobatics	KZ	2
Methodology of flying as	erobatic figures. Aerodynamics and flight mechanics of aerobatic figures. Aerobatic training syllabi and aerobatic competitions	. Creating an aero	batic sequence.
	cidents related to aerobatics. Physiological aspects of flying aerobatics. Aircraft structure loads and construction fatigue stren ') for commercial pilots and related accidents.	gth of aerobatic a	ircraft. Upset
21Y1LR	Radio Technology in Aviation	KZ	2
	wave spectrum. Analog and digital modulations. Noises. Filters. Resonance circuits. Electromagnetic field. Electromagnetic w		
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 examples are considered as a second co	1	ets for finding
transport connections, routing algorithms, their properties and implementation.	147	
21Y1MZ Managerial Ethics The basic terminology of managerial ethics. Basics of etiquette and rules of social contact. Social events. Etiquette of working contacts. The art of pres	KZ	2
image. Diplomatic protocol. Managerial ethics. Business ethics.	sentation and nego	diation. Fersonal
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	rt and the resultin	g differences in
the application of marketing.	1/7	
11Y1MM Mathematical Models in Economy The goal of the course is to teach selected methods of linear programming, with theoretical procedures applicable for individual tasks and their programming.	KZ	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.	jiam impiementati	on. The outcom
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	=	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		
14Y1MP Modeling Complex Assemblies and Models in Parametric Modeller Assemblies programming - tools and methodology of working subassemblies and assemblies, sheet metal parts modelling, welded assemblies, pipe	KZ	tion lines
Photorealistic output rendering - physical and material properties, lighting sources. MKP - visual example.	ciirics, and distrib	ation inico.
17Y1ND Maritime Transportation	KZ	2
History and importance of the maritime transportation, theoretical discipline in maritime transportation, seafaring vessels, maritime ports and their u		
maritime ports, transport corridors and link by maritime, river and rail transport I and II, global maritime corridors, logistics of maritime transportation, containers, ITS in maritime transport.	maritime transpor	tation and smart
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	1	
selected topics.		
21Y1OL Security of Air Transport	KZ	2
The development of civil aviation. Definitions and regulations. History of acts of unlawful interference. Terrorism in aviation. National security program at airports - operational procedures. Modern means of protection and control.	n. Crisis managen	nent. Protection
23Y10K 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,	1	
infrastructures.		
20Y10I 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 componer	nts for users (timet	ables mans l
I nanels 1) and operators (cycles, location or current delay of vehicles 1). The issue of tariff systems, Other examples of clearance systems (parking	•	abioo, mapo,
panels) and operators (cycles, location or current delay of vehicles,). The issue of tariff systems. Other examples of clearance systems (parking 14Y1OP Operating System	g).	
panels) and operators (cycles, location or current delay of vehicles,). The issue of tariff systems. Other examples of clearance systems (parking 14Y1OP Operating System Distributions. Installation GNU/Linux OS. X-window system. Rights management - users and groups, ACL rights. Filesystems and attributes. Program	g). KZ	2
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12Y1PD Assessment of Transport Structures	KZ	2
Assessment of transport structures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibilities	· ·	
transport structures on the landscape. Rating fragmentation and landscape connectivity in the preparation of linear structures. Practical examples of	assessment of tra	affic buildings on
the environment. 20Y1PK Product Quality Management Processes	KZ	2
General principles of organization management. Management systems and international standards; quality management systems. Quality products,	1	1
of standards for systems management, management principles. Principles of process management, monitoring and measurement systems management		
for systems management. Process management principles. Metrology and testing. Product certification.		
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.	1/7	
12Y1C1 Designing Roads in Civil 3D I The course is devoted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through	KZ	2
particular linear building, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. T	-	_
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 through	-	-
particular linear building, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. T	ne previously acqu	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, objects	KZ	2
connected with external database. Basic definition of work with lights, materials and reflexes. Models presentation.	ct data creation, v	vork with data
16Y1PV Operation, Construction and Maintenance of Vehicles	KZ	2
Methods of vehicle production. Vehicle maintenance. Vehicle diagnostics. Maintenence and repair plans. Engine maintenance and emission measur	1	_
General principles of engine diagnostics.		
12Y1PU Organization Disposition of Railway Stations	KZ	2
Connecting station. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Z		nation yards.
Reserve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic railway		
16Y1RE Control and Electronic Vehicle Systems Elementary concepts of regulation. Tools for analytical solution, linear system description. Basic types of a regulator (PID), properties, advantages, disa	KZ	2 on Conventional
and hybrid drive control. Electric drive. Vehicle communication bus (CAN, LIN, FlexRay, ISObus, KWP2000 protocole etc.). Vehicle electronic control	_	
comfort systems.	,,	
21Y1RZ Human Resources Management	KZ	2
The position of human resources in the organization and related disciplines file. Substance, importance and challenges of human resources manag	ement. Internal an	id external
environment of human resource management. Human resource planning. Search, recruitment and selection of employees. Motivation, evaluation and	remuneration of	staff. Positioning,
dismissal and redundancies of employees. Education of employees. Planning career management.	147	
17Y1ST Titan Simulation Titan is a management game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same prod	KZ	2
determine the quantity and capacity of production, plan budgets for marketing, research and development. They become familiar with the conseque		
of financial corporate reports and they use this information for other business decisions.		2,
20Y1SC Sensors and Actuators	KZ	2
Principles of sensors and actuators. Basics of measuring theory and actuating influence. The respective technologies and construction principles. Sensor	rs of mechanical, e	electro-magnetic,
state (temperature, humidity), chemical and particle flow values. Electrical, pneumatic and hydraulic actuators and solid phase elements.		-
11Y1SI Transportation Software Engineering	KZ	2
Basic concepts of software engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and imple	mentation using to	ormal techniques
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, forens	1	I
expert role in the obtaining proofs, forensic methodology. Notion of the evidence, general principles of evidence obtaining, metrology, protocol, evidence	•	
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 reliability.		
Mode and Effects Analysis), QFD (Quality Function Deployment), DFx (Design for Assamly, Manufacturying, Quality, Services) and other method Knowledge-based systems of quality and reliability, data collection.	s used in industria	applications.
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 development	1	I
medium and long-term strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and re	•	
classroom as well as investment activity in highway engineering.		
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 units		ment for
passangers onboarding and offboarding. Operational processes of aircraft technical handling and regulations. Modernization and technical progress		
11Y1TG Graph Theory Rasic concents and terminology of graph theory graph representation. Problems of graph theory problem instance. Graph search algorithms, trees	KZ	2
Basic concepts and terminology of graph theory, graph representation. Problems of graph theory, problem instance. Graph search algorithms, trees, path problem, Eulerian path, bipartite graph matching, flow networks, circulations, critical path method, traveling salesman problem. Problem of existen	-	-
for their solving. Computational complexity, dealing with NP-complete problems, heuristic approach.	05	3.90.101110
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 solutions.	1	I
in PHP language.		
21Y1UT Airports Maintenance	KZ	2
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.		

		,	
	of Theses in MS Word	KZ	2
•	rinciples of creating and editing large documents and basic typographic rules. They will properly apply styles, crea		
	es, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless	editing dissertation	ons and theses
so that they are able to concentrate			
	tion of Rail Vehicles	KZ	2
•	rs rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion t		•
•	ance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehicle	- hydromechanic	c, hydrodynami
and electric drive. Design concept r			
	ays and Shipping	KZ	2
	ion of water transport in the transport system of the Czech Republic and the EU. Advantages and disadvantages of	•	•
	of waterways in the Czech Republic. Construction of the waterway and its equipment. Management of waterways are	nd its operation. T	he legal regime
n inland navigation, navigation rule			
	ion and Cooperation	KZ	2
_	e influence of personality traits on the negotiations. Negotiation and commanding. Teamwork. Variants teams. Infor		
	ce of negotiation, the differences in negotiation in business and in crisis situations, the principle of "win both", spec	ifications and bid	ding, the role o
rust.	1		
	ment of Applications for Mobile Devices	KZ	2
	programming language, development environment, operating system Android, development application - widgets	containers, threa	ads, menu,
permissions, services, GUI.			
	ment in Railroad Vehicles	KZ	2
	vehicle parametres regulation. Control and driving of railroad vehicles. Importance in heavy duty and personal tran	nsportation. Critic	al situation
assesment. New materials in design			
14Y1W1 Webdes		KZ	2
	nmunication HTTP, URL and addressing, markup languages HTML and XHTML, HTML tags, rules of web accessib		
	wsers, creating one to three column layout pages, sites validation, conditional comments. Topics will be practiced of		<u> </u>
14Y1W2 Webdes		KZ	2
	ques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, web s	server installation	+ configuration
directives. Topics will be practiced of	n practical examples.		
	tion into Applied Computer Graphics	KZ	2
	plications with emphasis on transport, including development and research. Colours, colour perception, colour sch		•
	prithms for graphic data workout. Visualisation principles and tasks, technics, graphics and visualisation HW basics	s. Introduction to 2	2D and 3D
graphics software.			
I I	f Aerobatics	KZ	2
•	atics in present, aerodynamics and mechanics of flight during marginal flight modes, piloting technique of individual	elements, compet	ition aerobatics
	or practicing aerobatics and safety training, competitive psychology and concentration on performance.		
	entals of parametric and adaptive modeling	KZ	2
Basics of work at products and part	s creation. Sketch drawing by help of geometric relations, parametric dimensions, creation of adaptive models fron	n 2D sketches. Im	port and expor
rom and to another systems. Funda	amentals of assemblies creation.		
11Y1ZM Foundat	ion of MATLAB Programming	KZ	2
o explain the principle of algorithm	ization, flow charts, description of MATLAB environment and its settings, MATLAB help, mathematical operators, m	atrices and eleme	ents operations
	phics, optimization and program code debugging.		
12Y1ZU Principle	es of Urbanism	KZ	2
Survey on history of city and settler	nent building. Functional components and their mutual relations (working, living, recreation, transportation). Spacia	al arrangement of	settlements.
Types of towns or cities with a certa	in prevailing function, forms of their development. Brief overview of land-use planning.		
16Y1ZL Vehicle	Testing, Legislation and Construction	KZ	2
	on, aggregate computing, driving resistance, build and parameters of traction, constructional arrangement of persona	al cars, trucks, bus	ses, motorbikes

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 (pro B3710)

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:

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.) Foreign Language - French 3 15JZ3F Ζ 0P+4C+10B Ζ Eva Rezlerová, Irena Veselková Foreign Language - Italian 3 Ζ Ζ 15JZ3I 0P+4C+10B J Foreign Language - German 3 Ζ 0P+4C+10B Ζ 15JZ3N 3 Eva Rezlerová, Martina Navrátilová, Jana Štikarová

15JZ3R	Foreign Language - Russian 3 Marie Michlová, Eva Rezlerová	Z	3	0P+4C+10B	Z	J
15JZ3S	Foreign Language - Spanish 3 Eva Rezlerová, Nina Hricsina Puškinová	Z	3	0P+4C+10B	Z	J
15JZ4F	Foreign Language - French 4 Eva Rezlerová, Irena Veselková	Z,ZK	3	0P+4C+10B	L	J
15JZ4I	Foreign Language - Italian 4 Eva Rezlerová	Z,ZK	3	0P+4C+10B	L	J
15JZ4N	Foreign Language - German 4 Eva Rezlerová, Martina Navrátilová, Jana Štikarová	Z,ZK	3	0P+4C+10B	L	J
15JZ4R	Foreign Language - Russian 4 Marie Michlová, Eva Rezlerová	Z,ZK	3	0P+4C+10B	L	J
15JZ4S	Foreign Language - Spanish 4 Eva Rezlerová, Nina Hricsina Puškinová	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 (pro B3710)

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 | 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 procession of conversation and professional topics based on the language level and study locus 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

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

List of courses of this pass:

Code	Name of the course	Completion	Credits	
11CAL1	Calculus 1	Z,ZK	7	i
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 Euklidear	n space and	
Cartesia	an coordinate system. Geometric meaning of the differential of functions several real variables, differential calculus of functions of sev	eral real variables.		
11CAL2	Calculus 2	Z,ZK	5	
Indefinite integral,	Newtonian integral, Riemannian integral of the function of one variable, improper Riemannian integral, Riemannian integral in Rn. Pa	rametric descriptio	n of regular	
k-dimensional sur	faces in Rn, Riemannian integral over regular surfaces. Line and surface integrals of the second type, Stokes theorems, ordinary diff	erential equations	of the first	

Camandation Cuadita

order, linear differential equations with constant coefficients and its systems

11FY1	Physics 1	Z,ZK	4
	matics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermodynamics, electric field, directed	· .	7
11FY2	Physics 2	Z,ZK	4
Magnetic field, ele	ectromagnetic field. Optics, quantum character of electromagnetic radiation. Introduction into quantization, hydrogen atom. Multi-electro	on atoms, the nucle	ei. Basics of
	solid body physics.		
11GIE	Geometry	KZ	3
Differential geome	etry of curves - parameterization, the arc of the curve, torsion and curvature, Frenet's trihedron. Kinematics - a curve as a trajectory o	f the motion, the ve	elocity, and
	acceleration of a particle moving on a curved path.		
11LA	Linear Algebra	Z,ZK	3
	ear combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and their	· .	minants and
. ,	their applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classificati	-	
11MSP	Modeling of Systems and Processes	Z,ZK	4
	rstem, external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of differe		-
Linear and nor	nlinear system, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer function	n. Stability of LTTS	ystems.
	Discretization of continuous systems. System interconnection.		
11STAS	Statistics	Z,ZK	5
	ibility, random variable and its description, known distributions, random vector, function of random variable. Methods of point estimation. T	-	
Regression and co	orrelation, linear regression, correlation coefficient, coefficient of determination, the general linear model, statistical inference in linear re	gression, analysis	of variance,
	multiple regression, the use of matrices in regression.		
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 co	ourse is to teach selected methods of linear programming, with theoretical procedures applicable for individual tasks and their program	implementation. T	he 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
	blem of linear programming with a parameter in objective function, on right sides and in the matrix of coeficients of linear constraints. Co		
11Y1SI		KZ	2
1	Transportation Software Engineering	ı	
Basic concepts of	software engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and implement	itation using formal	techniques
	and practical usuage.		
11Y1TG	Graph Theory	KZ	2
Basic concepts ar	nd terminology of graph theory, graph representation. Problems of graph theory, problem instance. Graph search algorithms, trees, mir	nimum spanning tre	ee, shortest
path problem, Eule	erian path, bipartite graph matching, flow networks, circulations, critical path method, traveling salesman problem. Problem of existence a	nd optimization and	d algorithms
	for their solving. Computational complexity, dealing with NP-complete problems, heuristic approach.		
11Y1ZM	Foundation of MATLAB Programming	KZ	2
	iciple of algorithmization, flow charts, description of MATLAB environment and its settings, MATLAB help, mathematical operators, matr		
то охраштите ртит	control flow, inputs and outputs, graphics, optimization and program code debugging.	iooo ana olomonio	орогалогю,
12MDE	Transport Models and Transport Excesses	Z,ZK	3
	· · · · · · · · · · · · · · · · · · ·	· '	_
	traffic flow and methods for their measurement. Models of the traffic flow, communications load, line and urban systems. Theory of qu		-
transport and its	assessment. Statistical characteristics of transport. Transport excesses, their analysis, the causes, identify and minimize the consequence of transport excesses, their analysis, the causes, identify and minimize the consequence of transport excesses.	ences. Improving o	transport
	safety and fluency.		
12PPOK	Designing Roads, Highways and Motorways	KZ	3
Definition, types,	ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard	speed. Route in ru	ural areas.
Range of vision fo	r stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet	y device. Crossing:	s, junctions,
	intersections.		
12X31	Project 1	Z	2
12X32	Project 2	Z	2
	·		
12X33	Project 3	Z	2
12Y1C1	Designing Roads in Civil 3D I	KZ	2
The course is de	evoted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through	the complete des	ign of this
particular linear l	building, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The	course also includ	es a basic
	explanation of the traffic building design in the real-life profession.		
12Y1C2	Designing Roads in Civil 3D II	KZ	2
	evoted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through	I	
	building, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The	· · · · · · · · · · · · · · · · · · ·	-
particular inical s	improved and developed. Students learn to design intersections.	providuoly adquire	a orano aro
10//100		V7	0
12Y1DS	Project Documentation in Practice	KZ	2
Project documen	station creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process.	budget and pricing	y. Practical
	creation of some project documentation parts.		
12Y1HD	Traffic Noise	KZ	2
		_ '	c climate in
	tion, basic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regulation		
	tion, basic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regulation: s of urban acoustic, noise transmission, soundproofing. Types of noise sources in area. Determination of acoustic situation in the area		dology of
			dology of
	s of urban acoustic, noise transmission, soundproofing. Types of noise sources in area. Determination of acoustic situation in the area computing and measurement of transport noise. Acoustic studies, measuring protocol.		dology of
area, principles	s of urban acoustic, noise transmission, soundproofing. Types of noise sources in area. Determination of acoustic situation in the area	of interest. Method	2
area, principles 12Y1KN Combined trans	s of urban acoustic, noise transmission, soundproofing. Types of noise sources in area. Determination of acoustic situation in the area computing and measurement of transport noise. Acoustic studies, measuring protocol. Combined Transportation port strategy and legislation. Load units. Means of transport in combined transport. Combined transport systems. Transshipping areas.	of interest. Method KZ Multimodal logisti	2 c centres.
area, principles 12Y1KN Combined trans 12Y1PC	s of urban acoustic, noise transmission, soundproofing. Types of noise sources in area. Determination of acoustic situation in the area computing and measurement of transport noise. Acoustic studies, measuring protocol. Combined Transportation port strategy and legislation. Load units. Means of transport in combined transport. Combined transport systems. Transshipping areas. Pedestrian and Cycling Transport	of interest. Method KZ Multimodal logistic	2 c centres.
12Y1KN Combined trans 12Y1PC Routes for pedestr	s of urban acoustic, noise transmission, soundproofing. Types of noise sources in area. Determination of acoustic situation in the area computing and measurement of transport noise. Acoustic studies, measuring protocol. Combined Transportation port strategy and legislation. Load units. Means of transport in combined transport. Combined transport systems. Transshipping areas. Pedestrian and Cycling Transport rians. Pedestrian crossings. Modifications for blind, dim-sighted and disabled people. Design of cycle routes network. Ways of cycle routes	of interest. Method KZ Multimodal logisti KZ layout and design	2 c centres. 2 parameters
12Y1KN Combined trans 12Y1PC Routes for pedestr	s of urban acoustic, noise transmission, soundproofing. Types of noise sources in area. Determination of acoustic situation in the area computing and measurement of transport noise. Acoustic studies, measuring protocol. Combined Transportation port strategy and legislation. Load units. Means of transport in combined transport. Combined transport systems. Transshipping areas. Pedestrian and Cycling Transport	of interest. Method KZ Multimodal logisti KZ layout and design	2 c centres. 2 parameters

12Y1PD	Assessment of Transport Structures	KZ	2
	sport structures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibilities of	•	I
transport structures	s on the landscape. Rating fragmentation and landscape connectivity in the preparation of linear structures. Practical examples of assi the environment.	essment of traffic t	oulidings on
12Y1PU	Organization Disposition of Railway Stations	KZ	2
	on. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zon		
•	ve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic		,
12Y1SU	Road Management and Maintenance	KZ	2
	vith ownership of roads in the Czech Republic and the administration of the road at the state and county level. It is presented developr		
medium and long-to	erm strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and repair	methods are discu	ssed in the
	classroom as well as investment activity in highway engineering.		
12Y1VC	Waterways and Shipping	KZ	2
	nsport. The position of water transport in the transport system of the Czech Republic and the EU. Advantages and disadvantages of w	· · · · · · · · · · · · · · · · · · ·	- 1
of waterways in Eu	rope, a network of waterways in the Czech Republic. Construction of the waterway and its equipment. Management of waterways and it	ts operation. The le	egal regime
	in inland navigation, navigation rules of operation, navigation maps.		
12Y1ZU	Principles of Urbanism	KZ	2
Survey on history	of city and settlement building. Functional components and their mutual relations (working, living, recreation, transportation). Spacial	arrangement of se	ttiements.
12ZTS	Types of towns or cities with a certain prevailing function, forms of their development. Brief overview of land-use planning.	7 71/	
	Railway Lines and Stations	Z,ZK	4
Naii tiarisport. Na	Railway control systems in relation to infrastructure. Operating and carriage points. Railway lines net and category Traction in rail tr	· -	vay iii les.
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, pu		
	impacts of transportation to environment and safety.		
14AS	Algorithm and Data Structures	KZ	2
	niliarized with selected basic and derived data structures, algorithms, their properties and their design procedure. Students will analyze		
solutions to the se	et task and the resulting algorithm write by means of flowcharts, practice in reading algorithms recorded by means of the flowchart an	d use the basics o	f Boolean
	algebra with forming the conditions for the algorithms.		
14AZ	Data Analysis and Processing	KZ	2
Main aim of this	course is learn students how to prepare raw data for following processing and analysis. Knowledge of algorithms for determining the	parameters of diffe	rent data
sources; source c	an be used images, text, time series, etc. The next step is the theoretical skills and knowledge to apply in solving the problem, e. g. ex	traction parameter	s from the
	image data or from the Internet.		_
14DB	Database Systems	KZ	2
Basic concepts of	of database systems, conceptual model, relational data model, the principles of normal forms, relational database design, security and		database
4.41/.0.D	queries, relational algebra, SQL language, client / server, multilayer architectures, distributed database systems. Access to data via t		
14KSP	Constructing with Computer Aid m determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic common work	KZ	2
•	Co-ordinated systems, CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic common work	• .	
and Ort systems.	profiles, drawings with raster foundaments).	inco, ratoorib cir	/IIOIIIIIOIII
14PRG	Programming	KZ	2
	ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python program		
_	rticipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and search		
	working with date and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML).		
14X31	Project 1	Z	2
14X32	Project 2	Z	2
14X33	Project 3	Z	2
14Y1AV	Animation and Visualization	KZ	2
	tions and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and Spa		tmospheric
	s, rendering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animation		
14Y1BE	Barrierless Transport	KZ	2
The issue of barrie	rless accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students v	vill gain theoretical	knowledge
of barrierless enviro	onment roads, railway stations, public transport stops, terminal buildings, vehicles, public transport, information and orientation systems	and transportation	technology.
	Theoretical knowledge will be supplemented by practical examples.		
14Y1BM	Biometric Methods	KZ	2
	rms, authentication methods, principles and performance measurement of biometric systems, overview of biometric technologies, har		
retina recognition n	nethod, 2D and 3D face recognition, vein patterns on the wrist, ear biometrics, fingerprint recognition, skin spectroscopy, behavioral m	nethods, the use of	biometrics
14Y1HW	in transport applications, safety and risks of biometric technologies.	V7	
	Computer Hardware	KZ	2
Computer archite	ecture, basics of logical circuits design and their realization using FPGA. In detail, description of computer architecture and separate p arithmetic and logical units, I/O subsystem.	arts designing - cc	Jilloneis,
14Y1MP	Modeling Complex Assemblies and Models in Parametric Modeller	KZ	2
	gramming - tools and methodology of working subassemblies and assemblies, sheet metal parts modelling, welded assemblies, pipel		
ccombileo proj	Photorealistic output rendering - physical and material properties, lighting sources. MKP - visual example.		
14Y1OP	Operating System	KZ	2
	tallation GNU/Linux OS. X-window system. Rights management - users and groups, ACL rights. Filesystems and attributes. Programs		
	console programs / commands. Config files. SW management, package systems. Programs in graphic shell - text, spreadsheet, graph	· · · · · · · · · · · · · · · · · · ·	
	communication. Services management. Safe and secure configuration of OS. Remote administration.	,	
14Y1P2	Computer Aid of Transportation Projecting 2	KZ	2
Overview of CAx ap	oplication for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, data	a exchange). Advar	nced blocks
modification (attribu	utes, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transition	curve, cross-and	longitudinal
	section). Basics of 3D modelling.		

14YTP Solventre Solventre				Τ
connected with external disabless. Basis definition of varies with lights, metebrals and reflexes. Models presentations. 14Y1PI Computer English probabilities of their odding and mutated connection. Used in dividual stypes according to character of work. Work with adding programs for letter their odding and pulses careful. 14Y1PI Corporate Information System		1		l
Basic tomas of pagents and passibilities of their delling and mutual conversion. Use of invividual types according to character of voir. Work with delinging pagenase technic file user legislated legislated policy pages, scanning and compactive technology (ils morphiss and pages) and the same of the same o	Work in 3D Hori p		ata orcation, won	K Willi dala
Territoria computer technology is employee. DPI, closes. Bases of digital principally, scanning and computer technology is empotition and graphic north. **RZ 2 **Data-information-inconwedge, components of information systems, systems can be available stense of colds, structure of corporate information systems, systems of several territoria systems in properties in the computer of the computer		· · ·		l
Descriptors of the Components of information system your patients of minimal to present a components of information system operations are data, structure of corporate information system operations are data, structure of corporate information system operations are data, structure of corporate information system operations are data, structure of components information system operations are data and structure of components of the structure of components are designed in the components of the structure of components are designed in the components of the structure of of the	Basic formats of o		o. o .	in the user
Data information knowledge, components of information systems, syntate, and sammitte serious of components information systems in controllarly control information systems in controllarly	14Y1PI			2
statio information system, information system souths, data protections, safety politics. AV11PJ AV21PJ C Programming Language Preprocessor, bases of the C Lenguage (data types, syntax, communicial, functions, printed, characteristic productions, string, fless, structures and unions implementations of abstract data to types (FPC). Unit, plant programming techniques (portine), spacething, recording, using biotises groups and straining of the programming techniques (portine), spacething, recording, using biotises of intermitial principles of working in a syntaxide of capital by part of the table appearance, formating of numbers, insention of formulas and functions, including documents and training stressories, error develors, which is marked to the principles of working in a syntaxide of capital by the computer for working of numbers, insention of formulas and functions, including stressories, error develors, which is a stress of the state appearance, formating of numbers, insention of formulas and functions, including the programming stressories and demonstration of solutions Neuro and policies of the programming language per programming system, and numbers, analysis of finished corpusts and demonstration of solutions Neuro and policies of programming the programming interpretations and the programming interpretation of the principles of creating and editing language per per per personal programming interpretations and the programming interpretations in the principles of creating and editing language per personal programming and programming and programming and programming language, development of Applications for Mobile Devices AV11VIM				
14Y1PJ Programming hanguage. Preprocessor, basics of the Clanguage (call stypes, yettes, commands), functions, portions, dynamical memory allocation, string, filter, structures and union implementations of abstract data pages (PFC), LFO, list), programming techniques (corting, searching, recursion), using bibbles operations, strong-lists, structures and unions implementations of abstract data pages (PFC), LFO, list), programming techniques (corting, searching, recursion), using bibbles operations, children (PFC). Programming techniques (corting, searching) and the structures and functions, including decreasing, and the structures and functions, including decreasing, and the structures and functions. Including decreasing of numbers, insention of formulas and functions, including decreasing of the state appearance, formatics companies and training. 14Y1TIT (PFC) (P	(personalistic, prod		nformation syster	m operation
programming language, Preprocessor, basics of the C language (data types, syrtex, commands), functions, pointes, dynamical memory ollocates, stimp, lites, structures and unions (implementations of abstract data byses (PFCLP). (Iss.), programming bethingset (persons), using bithries operation). 14Y1PZ	4 4 V 4 D I		1/7	
Intersementations of abstract data byses (FIFC) LIFO, last), programming techniques (sorting, searching, recursion), using bibries operators. Advanced Data Processing in Spreadsheets Advanced Data Processing in Spreadsheets According to the state appearance, formating of numbers, reserving of formulas and functions, including diddensing, and received processing of the state appearance, formating of numbers, reserving of formulas and functions, including diddensing, and received processing of the state appearance, formating of numbers, reserving of formations and surveys. Exemptions and questions from various companies and training. 14Y11TI Creating Interactive Internet Applications Creating Interactive Internet Applications AVX 2 2 2 Saladers with the attractive of the principles of resetting and editing stage occurrents and back programmer. The goal is to prepare sudents to exemise editing discretizations and these guests, etc. Politicises, capitan, etc. Politicises, etc. Politi				l
Students will be familitar with principles of working in a preaathenet. Emphe layout of the table appearance, formatting of numbers, insertion of tormulas and functions, including diseases, error detection. Working with large spreadsheets, fifths, advanced fifths, advanced fifths, advanced fifths, and the students of scripture language PIHR Overview of PIHP languages systems, and functions. Availysis of finished scripts and demonstration of adultions. Your own application programmer in PIHP languages. 14Y1UP	o programming lan		-	and amono
dethosping, error detection. Working with large general-horest, filters, advanced filters, database functions. Privat tables and charts, conditional formatting, solviton finding, solvier, macrize data analysis. Examples and questions from various companies and middle solviers. Working the property applications of the process of the pr				l
Contain Institute Instit				-
Solublins of scripting language PHP. Overview of PHP language syntax, and fundamics. Avalysis of influende scripts and demonstration of solutions. You own application programmers in PHP language syntax, and fundamics. Avalysis of influende scripts and demonstration of solutions. You own application programmers in PHP languages syntax, and fundamics. Avalysis of influende scripts and demonstration of solutions. You own application programmers in PHP languages. 14Y11UP	addressing, error d		olution finding, sor	ver, macros
sabilities of scrybing language PHR. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions, Your own application programmer. In PHP language. In PHP language. In PHP language PHR. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions, Your own application programmer. In PHP language. In PHP language PHR language of the principles of creating and editing large documents. The goal is to prepare students for seamless editing dissertations and these scripts, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editing dissertations and these scripts, etc. Footnotes, captions, part of the principles of concentrate making on which the principles of th	14Y1TI		KZ	2
Suddents will be introduced to the principles of oreating and entiting large documents and basis propagable rules. They will properly apply styles, create tables of noncines, last of pures, tables, graphs, etc. Forinotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editing dissertations and these seats and the seasons of the principle of the pri				rogrammed
Students will be introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply apple, speeds and these so that they are able to concentrate mainly on writing a thesis. 14/11/M Development of Applications for Mobile Devices KZ 2 Object oriented programming, Jawa programming language, development environment, operating system Android, development application - widgets, containers, breads, menu, permissions, services, programming language, development of Applications for Mobile Devices KZ 2 14/11/M Wolf Development of Applications for Mobile Devices KZ 2 14/11/M Wolf Wolf Wolf Wolf Wolf Wolf Wolf Wolf		 		
guess, tables, graphs, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editing dissertations and theses of the they are able to concentrate mainly on writing a theses. 14Y1VIM Development of Applications for Mobile Devices KZ 2 Object oriented programming, Java programming language, development environment, operating system Android, development application - widgets, containers, threads, menupermissions, services, GUI. 14Y1WI Will Webbesign 1 KZ 2 14Y1WI Webbesign 1 KZ 2 14Y1WI Webbesign 1 KZ 2 14Y1WI Webbesign 2 KZ 2 Undertex will learn advanced techniques CSS, responsive webdets will propure generation of original comments. Topics will be practiced on practical examples. 14Y1YIM Bear advanced techniques CSS, responsive webdets will be practiced on practical examples. 14Y1ZM Services on the Sevent of the Comment of the Comment of the Comments of the Comment of the Comments of the Comment				l
So that they are able to concentrate mainly on writing a fleets. 14Y1VM Development of Applications for Mobile Devices KZ 2 Object oriented programming. Java programming language, development environment, operating system Android, development application - widgets, containers, threads, menu, permissions, services, CUL. 14Y1W1 Weddesign 1 Weddesign 1 Weddesign				
Object oriented programming, Java programming language, development environment, operating system Android, development application - widgets, containers, threads, menu, permissions, survivoirs, GUL. 14Y1W1	, , , , , , , , , , , , , , , , , , ,			
permissions, services, GUI. Webclassign 1 tudents will learn the basics of communication HTTE URL and addressing, markup languages HTML and XHTML. HTML tags, rules of web accessibility and usability, CSS properties and selecture, the issue of web browsers, creating one to three column layout pages, sites validation, conditional comments. Topics will be practiced on practical examples. 14Y12M Webclassing 1 14Y12M Fundamentals of parametric and adaptive modelling sites of web accessibility and usability, CSS properties are sites of work at products and parts creation. Sketch forming by help of genemic relations, parametric dimensions, creation of adaptive modelling RZ 2 15JZ1A Fundamentals of parametric and adaptive modelling RZ 2 15JZ1A Foreign Language - English 1 15JZ1A Foreign Language - English 1 15JZ1A Foreign Language - English 1 15JZ2A Foreign Language - English 2 15JZ2B Foreign Language - English 2 15JZ3B Foreign Language - English 2 15JZ3B Foreign Language - English 2 15JZ3B Solution 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. Etementary skillstics forms. Original extraction forms Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation. 15JZ3B Foreign Language - Inalian 3 15JZ3B Solution 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 s				l
14Y1W Webdesign 1 Webdesign 1 XZ 2 2 2 2 2 2 2 2 2	Object oriented p		containers, thread	ds, menu,
tudents will learn the basics of communication HTTP LNR, and addressing, markup languages HTML and XHTML, HTML tags, rules of web accessibility and usability, CSS properties and selectors, the issue of web browsers, creating one to three column layout pages, sites validation, conditional comments. Topics will be practiced on practical examples. 14Y1W2 Webdesign 2 Webdesign	1/1/1///1		K7	2
and selectors, the issue of web browsers, creating one to three column layout pages, sites validation, conditional comments. Topics will be practiced on practical examples. Very Columns will beam advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, [Query, SEO, web server installation + configuration directives. Topics will be practiced on practical examples. 14Y1ZM				l
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reatures. Practice of oral and written presentation.	and perceptive and		ith (professional)	text and its
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15JZ4N	Foreign Language - German 4 istics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la	Z,ZK	3 knowledge
· · · · · · · · · · · · · · · · · · ·	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v		- 1
	features. Practice of oral and written presentation.		
15JZ4R	Foreign Language - Russian 4	Z,ZK	3
•	istics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of k d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v		
	features. Practice of oral and written presentation.	([
15JZ4S	Foreign Language - Spanish 4	Z,ZK	3
· · · · · · · · · · · · · · · · · · ·	istics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of k		- 1
and perceptive an	features. Practice of oral and written presentation.	with (professional)	text and its
15X31	Project 1	Z	2
15X32	Project 2	Z	2
15X33	Project 3	Z	2
15Y1BO Fundamental legis	Work Safety and Health Protection in Transportation slative, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation. H	KZ ealth protection pr	2 ogrammes
r undamontar logic	health insurance of home and foreign business trips, statistics, working practice.	odiai protociicii pi	ogrammoo,
15Y1DU	History of Art and Society	KZ	2
History of art - o	definitions, terminology, division into periods. Architecture, fine arts, design. Situation in Central Europe, today in the Czech Republic.	Stations, bridges, i	industrial
15Y1DZ	buildings. Design of transport vehicles. History of Railway	KZ	2
	ways, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repu		
War II railways, rail	way development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connecti	ons, railway lines c	construction,
15\/15\	railway accidents, railway junctions. Excursions and projections.	KZ	2
15Y1EH Versailles system,	European Integration within Historical Context formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism. Li		
	er Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and it	•	
	New quality of French-German relationship - a driving power of starting European integration.	=	
15Y1FD	French Area Studies and Transportation by and regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air traf	KZ fic specialised ter	minology
	nch society and culture. Current political system. System of education, studying in France. Selected authors of French literature. Frenc	· ·	minology.
15Y1HD	History of City Mass Transport	KZ	2
	s transport in the world, development of tram, bus and trolley-bus systems. History of transport networks in the world, current trends a	=	of tariff and
15Y1HE	ance systems. History of city transport in Prague and Brno. History of tram, bus and trolley-bus operation systems in the Czech Reput 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	ection of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technology to po	ssibilities and skill	ls of a man.
15Y1HL	Practical examples from the field of transportation; relevant legislature. History of Civil Aviation	KZ	2
	g, development of aircrafts lighter than air. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of a		
World airports. F	amous aviators. Helicopters. CSA airplanes. Development of aircrafts in Czechoslovakia between the years 1945-1989. Classic era of	aviation. Golden	era of civil
457/4115	aviation. Modern era of civil aviation. Airline companies. Supersonic flying.	1/7	
15Y1NE Recent economic	German in the Economy and Society and social issues of German speaking countries and of the EU. Reading and listening of texts. Lexical, grammatical and semantic an	KZ alvsis of texts. Dis	2 cussion on
	selected topics.		
16UDOP	Introduction into Vehicles	Z	2
Vehicles and trans	portation systems. Functionality and setup. Movement and drive principles. Engines and their characteristics. Rail, road, air and wate of transport. Lifting equipment and conveyors. Legislation.	r transport. Alterna	ative means
16X31	Project 1	Z	2
16X32	Project 2	Z	2
16X33	Project 3	Z	2
16Y1EN	Energy Requirements of Vehicles	KZ	2
Dynamics and the	edriving 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 anal	_	ne, electric
16Y1IS	Interactive simulators and simulations	KZ	2
	ry and application of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical m		
	lation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and intera		
16Y1KS Quality and reliab	Quality and Reliability of Vehicles ility theory in design, development, production and operation of vehicles. Definition and possible approach to quality and reliability. K	KZ ev legislation, FME	A (Failure
-	Analysis), QFD (Quality Function Deployment), DFx (Design for Assamly, Manufacturying, Quality, Services) and other methods u		
	Knowledge-based systems of quality and reliability, data collection.		_
16Y1PV	Operation, Construction and Maintenance of Vehicles production. Vehicle maintenance. Vehicle diagnostics. Maintenence and repair plans. Engine maintenance and emission measurements	KZ ant Transmission n	2 nechanism
IVICUIOUS OF VEHICLE	e production, verticle maintenance, verticle diagnostics, maintenence and repair plans, Engine maintenance and emission measureme General principles of engine diagnostics.	in. 11a11511115510[1 [1	neunaniisiii.
16Y1RE	Control and Electronic Vehicle Systems	KZ	2
	ots of regulation. Tools for analytical solution, linear system description. Basic types of a regulator (PID), properties, advantages, disadva	_	
מוזע וואַטוֹזֹם מוּוֹעּ	e control. Electric drive. Vehicle communication bus (CAN, LIN, FlexRay, ISObus, KWP2000 protocole etc.). Vehicle electronic control, comfort systems.	salety, communica	วแบบ สมนั

			1
16Y1VT	Development in Railroad Vehicles	KZ	2
Railroad vehicles	traction. Railroad vehicle parametres regulation. Control and driving of railroad vehicles. Importance in heavy duty and personal trar	nsportation. Critica	situation
	assesment. New materials in design. International standardization.		
16Y1ZG	Introduction into Applied Computer Graphics	KZ	2
		l .	1
	s, division and applications with emphasis on transport, including development and research. Colours, colour perception, colour sche		•
and 3D generation	on, elementary algorithms for graphic data workout. Visualisation principles and tasks, technics, graphics and visualisation HW basic	s. Introduction to 2	D and 3D
	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	1	1
	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
Basic terms in tran	sport technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and freight tran	sport, organisation	n of traffic in
each transport m	odus, technologic factors of the side of operator and client, organisation of city transport, logistic technologies and their aplication us	ing various transpo	ort modus.
17TGA	Graph Theory and its Applications in Transport	Z,ZK	4
	graph theory, paths in graphs, flows in networks, location problems, design problems on graphs, optimum routing, use of graphs in control of the problems of graphs in control of the problems.		1
			1
17X31	Project 1	Z	2
17X32	Project 2	Z	2
17X33	Project 3	Z	2
	•	KZ	
17Y1AF	Alternative Forms of Transportation Project Financing	l	2
	fed such forms of financing in transportation, where the public sector body perform the final debtor, i. e. debtor payments come from	•	
is not a direct partic	ipant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of securities as an alter	native source of tra	ansportation
	project.		
17Y1EV	Public Sector Economy	KZ	2
	ncial theory of public sector, public choice theory, externalites, decisions about public finance allocation, economic assesment of pub		_
-	R, state budget, management of public projects a their economic efficiency assessment, way of elaboration of PPP projects, funding from		
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 tran-	sport process pass	sengers and
	air cargo. Information systems in air transport. Global distribution systems.		
17Y1MD	Marketing in Transportation	KZ	2
		l	1
General principles	of marketing applied to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transport a	ind the resulting di	merences in
	the application of marketing.		
17Y1ND	Maritime Transportation	KZ	2
History and importa	ance of the maritime transportation, theoretical discipline in maritime transportation, seafaring vessels, maritime ports and their utiliza	ation, inland logistic	c centre and
	sport corridors and link by maritime, river and rail transport I and II, global maritime corridors, logistics of maritime transportation, mar		
,			
	containers, ITS in maritime transport.		
17Y1OF	Personal Finance	KZ	2
	· · · · · · · · · · · · · · · · · · ·	l	1
Personal finance (Personal Finance	i sing (rent, mortgag	ge, savings,
Personal finance (Personal Finance budget, financing of basic living needs), debt (loans and credits, payment instruments, interest and fees, debt trap), financing of house	i sing (rent, mortgag	ge, savings,
Personal finance (consumer loans, re	Personal Finance budget, financing of basic living needs), debt (loans and credits, payment instruments, interest and fees, debt trap), financing of house financing), savings and investments (investment horizon, return, risk, investment strategy), insurance (insurance types, suitability and (retirement savings and insurance).	ising (rent, mortgag adequacy), securii	ge, savings, ng the future
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Personal finance (consumer loans, reconsumer loans and course of mais paid to metals as a language loans and comprometer loans and comprom	Personal Finance budget, financing of basic living needs), debt (loans and credits, payment instruments, interest and fees, debt trap), financing of hous financing), savings and investments (investment horizon, return, risk, investment strategy), insurance (insurance types, suitability and (retirement savings and insurance). Personnel Management bes, work group, man as personality, planning, choice, evaluation and education of human sources, work adaptation, teamwork, inter Titan Simulation rement game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same productity and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequences of financial corporate reports and they use this information for other business decisions. Materials Science and Engineering terials science and engineering explains mechanical properties of structural materials based on their bonding forces and microstructures the most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and conto degradation processes in materials, to defectoscopy and to main mechanical tests. Elasticity and Strength ession. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolted a Analysis of deflection curve of beams. Torsion of circular cross sections. Combined loading. Stability. Structural Analysis of forces in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determinate ork. Kinematic method for calculation of reactions of statically determinate systems. Determination of axial forces in truss constructions. of planar shapes. Fiber polygons and chains. Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional arrangement of drawing sheets. Project 1	kZ cultural communic kZ cultural communic kZ ct. Students set a s of their decisions Z,ZK re. However the m nposites. Attention Z,ZK and welded joints of KZ al and geometrical Z KZ and nervous syste	le, savings, and the future 2 price and by the form 3 ain attention is also paid 4 ple girders. paracteristics 2 accuracy, 2 2 2 2 m. Structure
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Personal finance (consumer loans, reconsumer loans and reconsumer loans	Personal Finance budget, financing of basic living needs), debt (loans and credits, payment instruments, interest and fees, debt trap), financing of hous financing), savings and investments (investment horizon, return, risk, investment strategy), insurance (insurance types, suitability and (retirement savings and insurance). Personnel Management ces, work group, man as personality, planning, choice, evaluation and education of human sources, work adaptation, teamwork, inter Titan Simulation gement game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same productity and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequences of financial corporate reports and they use this information for other business decisions. Materials Science and Engineering terials science and engineering explains mechanical properties of structural materials based on their bonding forces and microstructure the most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and core to degradation processes in materials, to defectoscopy and to main mechanical tests. Elasticity and Strength ession. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolted a Analysis of deflection curve of beams. Torsion of circular cross sections. Combined loading. Stability. Structural Analysis of forces in plane and space. Calculation of reactions of statically determinate systems. Determination of axial forces in truss constructions. of planar shapes. Fiber polygons and chains. Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional arrangement of drawing sheets. Project 1 Project 2 Project 2 Project 3 Anatomy, Mobility and Safety of Man natomical structure and growth of bones. Articular joint. Remo	kZ cultural communic kZ cultural communic kZ ct. Students set a s of their decisions Z,ZK re. However the m nposites. Attention Z,ZK and welded joints of KZ al and geometrical Z KZ and nervous systeman and his treatm KZ testing of material	le, savings, and the future 2 cation. 2 price and by the form 3 ain attention is also paid 3 of structures. 4 cle girders. caracteristics 2 caccuracy, 3 caccuracy, 4 caccuracy, 5 caccuracy, 6 caccuracy, 7 caccuracy, 8 caccuracy,

18Y1MT	Engineering Materials	KZ	2
	ew of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers and		1
to biol	ogical materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's	selection charts.	·
18Y1PS	Computer Simulations in Mechanics	KZ	2
•	view of tools for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model development		-
om other CAE sy	stems. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary conditions and	application of the	load. Ba
40)/41.11/	tasks of structural and modal analysis. Introduction to complex nonlinear problems.		
18Y1UK	Introduction of Rail Vehicles	KZ	2
	ics and parameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion trail		_
ack resistance. To	tal running resistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehicle - h and electric drive. Design concept rail vehicles and drive of wheel set.	iyaromechanic, ny	/drodynar
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 tab		
	tasks. Soft and hard systems, methods for soft system analysis.		
20UITS	Introduction to Intelligent Transport Systems	Z,ZK	7
	gislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamentals of informinciples and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real examples principles of ITS.		
20X31	Project 1	Z	2
20X32	Project 2	 Z	2
20X33	Project 3	 Z	2
20Y1AE	Applied Electronics	KZ	2
-	emiconductor components, their principles, characteristics and typical connection diagrams. Semiconductor PN junction diodes, trans		_
	ogic gates. Functions of basic electronic circuits and methods for their designs (rectifiers, voltage regulator with Zener diode, transisto	-	-
•	amplifier as an inverting and noninverting amplifier).	. ,	
20Y1EA	Environmental Aspects of Transport	KZ	2
	where, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilistic		t evaluat
Air quality, mair	pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transport	ortation in climate	change.
20Y1EK	Qualification in Electrical Engineering	KZ	2
ractical experienc	e with measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock hazard, s	symbols and label	ing, nom
oltage, maximum	allowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legislatic	on, standards and	regulatio
	in relation to health and safety and electrical engineering.		T
20Y1LN	Location and Navigation	KZ	2
Description and	examples of road networks, localization on the network. Routing algorithms, their properties and implementation. Description and examples of road networks, localization on the network. Routing algorithms, their properties and implementation.	mples of datasets	for findin
20Y1OI	Fare Collection and Information Systems	KZ	2
-	stems in public transport and their components (on-board units, validators, turnstiles,). Information systems and their components		les, maps
	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 framew
	tems management, management principles. Principles of process management, monitoring and measurement systems management. U for systems management. Process management principles. Metrology and testing. Product certification.	-	
20Y1SC	Sensors and Actuators	KZ	2
rinciples of senso	s and actuators. Basics of measuring theory and actuating influence. The respective technologies and construction principles. Sensors of		ro-magne
	state (temperature, humidity), chemical and particle flow values. Electrical, pneumatic and hydraulic actuators and solid phase ele		
21ELED	Air Transport Economy	Z,ZK	4
he economics of	air transport is a key subject for understanding market relations in air transport. The introduction is devoted to understanding the basi	c economic princi	ples. This
	followed by a practical section that economic linkages in the domain of airlines.	.,_	_
21LAG1	English for Aviation 1	KZ	3
241.400	Familiarity with the terminology used in civil aviation in the general context and emphasizing the ability to receive information only in		
21LAG2	English for Aviation 1	KZ	3
21LCM	Aircraft Engines	Z,ZK	3
	ine, theoretical background, operational characteristics and construction schemes. Propellers, operational characterictics. Turbine engages to the construction as having a property of the construction and the construction are constructed by the construction are constructed by the construction are constructed by the construction and the construction are constructed by the c	_	-
	onstruction schemes, operational characteristics. Turbojet and turbofan engines, basic construction modules, and their operational characteristics.		1
21LGP	Legislation and Operational Regulations	Z,ZK	5
	viation regulations. The scope of international and national organizations in civil aviation. Analysis and interpretation of the ICAO Anno 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,		1
	nealth & amp; hygiene, health preservation, intoxication, incapacitation, basics of flight psychology, human information processing, me		
	& model of human error, body rhythms & sleep, stress, fatigue, working methods. Aircraft 1	KZ	3
21111	AllGall I		1
21LL1 ircraft structural a	nd conceptual design types - definitions and basic knowledge of the problem. Development of requirements, aircraft definitions and ca	itegorisation. Aircr	
	nd conceptual design types - definitions and basic knowledge of the problem. Development of requirements, aircraft definitions and ca Systems of primary and secondary airframe structure. Airframe and propulsion unit. Lectures are devoted to aeroplane topic	_	
ircraft structural a	Systems of primary and secondary airframe structure. Airframe and propulsion unit. Lectures are devoted to aeroplane topic Aircraft 2	z,ZK	2
ircraft structural a	Systems of primary and secondary airframe structure. Airframe and propulsion unit. Lectures are devoted to aeroplane topic Aircraft 2 consibility, responsibilities of operator and professional supervising. Legislation in area of airworthiness. International and national stan	Z,ZK dards. Static solid	
ircraft structural a 21LTA2 lanufacturers resp	Systems of primary and secondary airframe structure. Airframe and propulsion unit. Lectures are devoted to aeroplane topic Aircraft 2 onsibility, responsibilities of operator and professional supervising. Legislation in area of airworthiness. International and national stan structures. Aeroelasticity. Inherent and operational reliability of aircraft structure. Fatigue strength. Aircraft structure lifetime presure.	Z,ZK dards. Static solid mption.	ity of airc
21LTA2 lanufacturers resp 21LTN	Systems of primary and secondary airframe structure. Airframe and propulsion unit. Lectures are devoted to aeroplane topic Aircraft 2 consibility, responsibilities of operator and professional supervising. Legislation in area of airworthiness. International and national stan	Z,ZK dards. Static solid mption. Z,ZK	ity of airc

21LTTE			
Aerodrome refere	Aerodromes nce point and temperature, TORA, TODA, ASDA, LDA. Taxiway and apron. Clearway. Stopway. Obstacle limitation surfaces. Runway n	Z,ZK narking. Runway z	4 cone lights.
	Environmental conditions. Public traffic.		
21MRG	Meteorology	KZ	3
Structure of atmo	sphere. Vertical stratification. Pressures QNH, QFE, QFF, QNE. Instability. Atmospherical fronts. Atmospheric precipitation - origin an	d kinds. Turbulenc	e. Powers
	one and anticyclone. Gradient and geostrofical wind. Visibilities in air transport. Dangerous meteorological phenomenas. Meteorological r Intertropical front. Meteorological informations.		
210BP		Z,ZK	3
	Air Transport Business	•	
Aviation business a	and transport operations is a core subject for understanding operational relationships in air transport. It focuses on the process and fur as the economic aspects and infrastructure of air transport.	nctional arrangem	ents as well
04 DA D		7 71/	
21PAP	Flight Planning and Performance	Z,ZK	4
	Load of aircraft. Determination of centre of gravity - loadsheet, trimsheet. Aircraft weighing. Overloading of aircraft. Basic characteristic sp	-	I
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	minimums.
	Fuel plan. Operational flight plan.		
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 op	perating areas and	procedures
	by ICAO Airports Manual. Development planning and project preparation, regulatory basis.	_	
21PJE	Aircraft Instruments	KZ	2
	raft instrumentation and its principles and construction, aircraft electrical systems, engine measuring and monitoring systems, air data		
	gyroscopic indicators, inertial and radio navigation means, communication means, data recorders, complex flight and navigation data		- 1
21RILP	Air Traffic Control	Z	2
	and their distribution. Organization of air traffic, flow and capacity management. Airspace management. System support for aircraft flyi		
the form, content.	Separation of aircraft. Reports of air traffic services, the form, content. Harmonization and integration of ATC. CFMU and its subsystem	ms. Flexible use of	f airspace -
	FUA. RVSM, RNP. New trends in the area of ATC.		
21ULCT	Aircraft Maintenance	Z	2
Aircraft operations	and technical operations. Maintenance and work processes. Defects search methods, status check diagnostic tools. Selection and qual	lification of aviation	n personnel.
Basic documentat	ion for maintenance. Optimization of time maintenance intervals. Regulation no. 1321/2014 Part 145. Human factors of aircraft mainte	nance. Regulation	of director
	EASA for aircraft maintenance. Seminars will be focused on practical application.		
21X31	Project 1	Z	2
21X32	Project 2	Z	2
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21X33	Project 3	Z	2
21Y1FN	Factors Affecting the Rate of Accidents in Aviation	KZ	2
Introduction. The se	cope of international and national organizations in civil aviation. The scope of the investigation organisations within the state and inter	national committe	es. Analysis
and interpretatio	n of ICAO Annexes 13 and 19. Analysis and interpretation of the Regulation (EC), Regulation (EU). Human factor. Utilization of inform	nation from the inve	estigation
	reports.		
21Y1LA	Aerobatics		
	Notobalios	KZ	2
Methodology of flyi	ng aerobatic figures. Aerodynamics and flight mechanics of aerobatic figures. Aerobatic training syllabi and aerobatic competitions. Cre		
		eating an aerobati	sequence.
	ng aerobatic figures. Aerodynamics and flight mechanics of aerobatic figures. Aerobatic training syllabi and aerobatic competitions. Cre	eating an aerobati	sequence.
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21ZYL1	Principles of Flight 1	Z,ZK	5
Aerodynamic drag	, relation between drag and speed, streamline, boundary layer, formula of continuity, formula of Bernoulli, lift and drag, air flow and pr	essures around w	ing, angle of
attack, reactions of	f 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, inducec	l drag, interference	e, devices for
	lift and drag increase.		
21ZYL2	Principles of Flight 2	Z,ZK	5
Static & amp; dyna	inic longitudinal stability, neutral point, location of centre of gravity, static directional & plateral stability, dynamic directional & amp;	lateral stability, co	ntrol – pitch
(longitudinal), ya	w (directional) & roll (lateral), roll/yaw interaction, trimming, speed of sound, Mach number, compressibility, shock waves, critical	Mach number, ae	rodynamic
	heating, operating limitations, manoeuvring envelope, gust-load diagram.		_
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.		
23BDIS	Safety Technologies of Transportation and Information Systems	KZ	3
Safety of transp	portation means - principles, testing, evaluation. Safety of infrastructures, critical structures, crisis scenarios. Safety of information sys	tems and their rot	oustness.
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	asic 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	i.	
23Y1KO	Quantum Physics and Optoelectronics	KZ	2
	Ground of quantum physics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics compor	nents.	1
23Y1OK	Protection of Critical Objects and Infrastructures	KZ	2
Types of technolog	i 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	or negotiation. The influence of personality traits on the negotiations. Negotiation and commanding. Teamwork. Variants teams. Inform	al and formal role	in the team.
Principles of negot	tiation, the essence of negotiation, the differences in negotiation in business and in crisis situations, the principle of "win both", specifi	cations and biddin	g, the role of
	trust.		
TV-1	Physical Education	Z	1
	yoroan = adoution		

For updated information see http://bilakniha.cvut.cz/en/FF.html Generated: day 2024-03-29, time 01:03.