Study plan

Name of study plan: LED bak.prez.11/12

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: 135

The role of the block: Z

Code of the group: 1.S.BP 10/11

Name of the group: 1.sem.bak.prez.10/11

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 12 courses

Credits in the group: 30 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
13E	Economics	Z,ZK	3	2+1	Z	Z
11GIE	Geometry Old ich Hykš, Pavel Provinský, Šárka Vorá ová Old ich Hykš Old ich Hykš (Gar.)	KZ	3	2P+2C+12E	B Z	Z
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+8E	B Z	Z
11LA	Linear Algebra Pavel Provinský, Lucie Kárná, Martina Be vá ová Martina Be vá ová (Gar.) Be vá ová (Gar.)	Z,ZK	3	2P+1C+10E	B Z	Z
11MTA	Mathematical Analysis	Z,ZK	4	2+2	Z	Z
18MRI1	Materials 1	Z,ZK	3	2+1	Z	Z
00TVC1	Physical Education 1	Z	1	0+2	Z	Z
18TTED	Creation of Technical Documentation	KZ	2	2+1	Z	Z
22UN	Traffic Accidents Introduction	Z	2	2+0	Z	Z
12ZADI	Introduction to Transportation Engineering	Z,ZK	3	2+1	Z	Z
14ZINF	Fundamentals of Informatics	KZ	2	0+2	Z	Z
21ZLD	Introduction to Air Transport	KZ	2	2+1	Z	Z

Characteristics of the courses of this group of Study Plan: Code=1.S.BP 10/11 Name=1.sem.bak.prez.10/11

13E	Economics	Z,ZK	3				
Microeconomic and m	acroeconomic interpretation of economic relations. Method and subject of the economics. Economic decision making of consu	imers and produc	ers. Market				
structures. Labour and	capital, efficiency, ownership, public choice.						
11GIE	Geometry	KZ	3				
Differential geometry of	f curves - parameterization, the arc of the curve, torsion and curvature, Frenet's trihedron. Kinematics - a curve as a trajector	y of the motion, the	ne velocity, and				
acceleration of a partic	ele moving on a curved path.						
14KSP	Constructing with Computer Aid	KZ	2				
"CAD systems" term d	"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-o	rdinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting poss	sibilites, AutoCAD	environment				
profiles, drawings with	raster foundaments).						

11LA	Linear Algebra	Z,ZK	3
Vector spaces (line	ear combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations	and their solvability. D	eterminants an
their applications.	Scalar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classification.		
11MTA	Mathematical Analysis	Z,ZK	4
Sequences and se	eries of real numbers and its convergence. Basic properties of functions. Differential and integral calculus of the real function of c	one real variable. Powe	er series, Fourie
series and foundat	tions of Fourier transform.		
18MRI1	Materials 1	Z,ZK	3
•	Basics of thermodynamics of metals and their alloys. Balanced binary diagrams. Alloys of iron with carbon. Deterioration of solins. Physical features. Mechanical features. Dephectostopic testing. Corosion.	id solutions. Heating p	rocessing of
00TVC1	Physical Education 1	Z	1
Practical instructio	on and training in a wide variety of sports and games: from basic recreational coaching to competitive top level training. Include	ed are: basketball, volle	eyball, soccer,
tennis, squash, flo	porball, bodybuilding, swimming, canoeing, aerobic.		
		1/7	2
18TTED	Creation of Technical Documentation	KZ	2
-	Creation of Technical Documentation ds, international standardization, types of technical drawings, representation of technical objects, technical diagrams and charts, or		_
Technical standard			_
Technical standard	ds, international standardization, types of technical drawings, representation of technical objects, technical diagrams and charts, or		_
Technical standard arrangement of dra 22UN	ds, international standardization, types of technical drawings, representation of technical objects, technical diagrams and charts, cawing sheets, types of schemes and their creation.	dimensional and geom	etrical accurac
Technical standard arrangement of dra 22UN Traffic accident as	ds, international standardization, types of technical drawings, representation of technical objects, technical diagrams and charts, cawing sheets, types of schemes and their creation. Traffic Accidents Introduction	dimensional and geom	etrical accuracy
Technical standard arrangement of dra 22UN Traffic accident as	ds, international standardization, types of technical drawings, representation of technical objects, technical diagrams and charts, cawing sheets, types of schemes and their creation. Traffic Accidents Introduction a physical process, systematic submission, vehicle x human x infrastructure interaction, accidents statistics, aircraft accidents	dimensional and geom	etrical accuracy
Technical standard arrangement of dra 22UN Traffic accident as waterways, road tr	ds, international standardization, types of technical drawings, representation of technical objects, technical diagrams and charts, cawing sheets, types of schemes and their creation. Traffic Accidents Introduction Traffic Accidents Introduction	dimensional and geom	etrical accuracy 2 s, accidents on
Technical standard arrangement of dra 22UN Traffic accident as waterways, road tr	ds, international standardization, types of technical drawings, representation of technical objects, technical diagrams and charts, or awing sheets, types of schemes and their creation. Traffic Accidents Introduction Traffic Accidents Introduction	dimensional and geom	etrical accuracy 2 s, accidents on
Technical standard arrangement of dra 22UN Traffic accident as waterways, road tr 12ZADI Traffic survey. Terre	ds, international standardization, types of technical drawings, representation of technical objects, technical diagrams and charts, or awing sheets, types of schemes and their creation. Traffic Accidents Introduction Traffic Accidents Introduction	dimensional and geom	etrical accuracy 2 s, accidents on
Technical standard arrangement of dra 22UN Traffic accident as waterways, road tr 12ZADI Traffic survey. Terror Traffic and environ 14ZINF	ds, international standardization, types of technical drawings, representation of technical objects, technical diagrams and charts, or the same standardization, types of technical drawings, representation of technical objects, technical diagrams and charts, or the same standardization, the same standardization of technical objects, technical diagrams and charts, or the same standardization of technical objects, technical diagrams and charts, or the same standardization of the same standardization of the same standardization, accidents statistics, aircraft accidents raffic accidents, other aspects, accidental prevention. Introduction to Transportation Engineering restrial roads. Residential zone. Land - use planning. Railway transport. Public mass transport. Integrated traffic systems. Traffic ment.	dimensional and geom Z s, accidents on railway Z,ZK rorognosis. Traffic safe	etrical accuracy 2 s, accidents on 3 ety. Air transpor
Technical standard arrangement of dra 22UN Traffic accident as waterways, road tr 12ZADI Traffic survey. Terror Traffic and environ 14ZINF Introduction to face	ds, international standardization, types of technical drawings, representation of technical objects, technical diagrams and charts, or the same standardization, types of technical drawings, representation of technical objects, technical diagrams and charts, or the same standardization, the same standardization of technical objects, technical diagrams and charts, or the same standardization of technical objects, technical diagrams and charts, or the same standardization of technical objects, technical diagrams and charts, or the same standardization, the same standardization of the same standardization, the same standardization of the same standardization of the same standardization, the same standardization, the same standardization of the same standardization, the same standardization of the same standardization of the same standardization of the same standardization of the same standardization, the same standardization of the same standardization	dimensional and geom Z s, accidents on railway Z,ZK prognosis. Traffic safe	etrical accuracy 2 s, accidents on 3 ety. Air transpor 2 ncl. arithmetic
Technical standard arrangement of dra 22UN Traffic accident as waterways, road tr 12ZADI Traffic survey. Terror Traffic and environ 14ZINF Introduction to face	ds, international standardization, types of technical drawings, representation of technical objects, technical diagrams and charts, or awing sheets, types of schemes and their creation. Traffic Accidents Introduction	dimensional and geom Z s, accidents on railway Z,ZK prognosis. Traffic safe	etrical accuracy 2 s, accidents on 3 ety. Air transpor 2 ncl. arithmetic
Technical standard arrangement of dra 22UN Traffic accident as waterways, road tr 12ZADI Traffic survey. Terror Traffic and environ 14ZINF Introduction to facical calculations. Algor	ds, international standardization, types of technical drawings, representation of technical objects, technical diagrams and charts, or awing sheets, types of schemes and their creation. Traffic Accidents Introduction	dimensional and geom Z s, accidents on railway Z,ZK prognosis. Traffic safe	etrical accuracy 2 s, accidents on 3 ety. Air transpor 2 ncl. arithmetic
Technical standard arrangement of dra 22UN Traffic accident as waterways, road tr 12ZADI Traffic survey. Terror Traffic and environ 14ZINF Introduction to fact calculations. Algor graphs, calculation 21ZLD	ds, international standardization, types of technical drawings, representation of technical objects, technical diagrams and charts, or awing sheets, types of schemes and their creation. Traffic Accidents Introduction	Z,ZK c prognosis. Traffic safe KZ cn. Number systems in production. Work with Microscopic and the systems in production. WZ	etrical accuracy 2 s, accidents on 3 ety. Air transpor 2 ncl. arithmetic S-Excel - tables

Code of the group: 2.S.BP 10/11

Name of the group: 2.sem.bak.prez.10/11

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 12 courses

Credits in the group: 30 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
13EDOT	Economy, Transport, Telecommunications	KZ	2	2+0	L	Z
11FY1	Physics 1	Z,ZK	4	2P+2C	L	Z
11MVP	Mathematical Analysis of Function of More Variables	Z,ZK	3	2+2	L	Z
18MRI2	Materials 2	KZ	2	2+0	L	Z
11PT	Probability	Z	2	1+1	L	Z
12PKD	Rail Transport Designing	Z,ZK	3	2+2	L	Z
14SIAP	Networks and Protocols	KZ	2	1+1	L	Z
18ST	Statics	Z,ZK	3	2+1	L	Z
17TDL	Transport Technology and Logistics	Z,ZK	3	2+2	L	Z
00TVC2	Physical Education 2	Z	1	0+2	L	Z
20UIS	Introduction to ITS	Z,ZK	3	2+1	L	Z
14UPRO	Introduction to Programming	KZ	2	0+2	L	Z

Characteristics of the courses of this group of Study Plan: Code=2.S.BP 10/11 Name=2.sem.bak.prez.10/11

13EDOT	Economy, Transport, Telecommunications	KZ	2				
Transport, telecomn	Transport, telecommunications, demand, supply, indicators, economic development, legislation, European union, regulation, liberalisation, transport modes, ITS, sustainability.						
11FY1	Physics 1	Z,ZK	4				
Kinematics, particle	dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermodynamics, electric field, directed electric	current.					
11MVP	Mathematical Analysis of Function of More Variables	Z,ZK	3				
Metric spaces, sequ	ences in metric spaces, limit of sequence in metric space. Differential calculus of functions of several variables, differential of fur	nction, partial deri	vations, implicitly				
defined functions, ea	ttremes of functions of several variables. Integral calculus of functions of several variables, Riemann integral, integral over curve	s and surfaces in	R3, application				
of integral calculus in physics.							
18MRI2	Materials 2	KZ	2				
Fundamental conce	Fundamental concepts, notions. The main materials groups. Semiconductors, Polymers, Special types of steel, Properties and application of the composite materials.						

11PT Probability Descriptive statistics. Basic probability concepts: elementary events and events, definitions and interpretation of probability. Random variable, probability distribution, probability mass and density, moments, some discrete and continuous distributions. Random vectors: joint and marginal distributions, mean vector, covariance matrix. Mixed distributions, mixture of distributions. Law of large numbers, central limit theorem Rail Transport Designing Railway lines network. Vehicle and track relation. Traction. Track geometrical parameters. Clearance profile. Railway lines routing. Superstructure and substructure of the railway lines. Switches. Railway stations. City rail transport. 14SIAP ΚZ Networks and Protocols Basic communication model, history and development of the Internet, principle of data transfer through computer networks (TCP/IP), performance of basic network protocols (ARP, RARP, TCP, UDP, Telnet, FTP, DNS, DHCP POP3, IMAP), data acquirement from the Internet sources, communicating ability via the Internet and fundamentals of own web presentation 18ST Statics Z,ZK General system of forces. Calculation of reactions of mass objects and compound systems. Assessment of internal forces on statically determinate beam and simple framework. Principle of virtual works. Kinematic method for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction, method of joints and method of sections. Geometry of cross sections. Plane fiber polygons and catenary cables. Transport Technology and Logistics Basic terms in transport technology and logistics. Particular steps of transport planning. Quantification of carriage relations. Line planning. Timetabling. Planning in pasanger and freight transport. Organisation of traffic in each transport means. Technological factors from the point of view of operator and client. Organisation of public city transport. Logistic technologies and their application using various transport means Physical Education 2 Practical instruction and training in a wide variety of sports and games: from basic recreational coaching to competitive top level training. Included are: basketball, volleyball, soccer, tennis, squash, floorball, bodybuilding, swimming, canoeing, aerobic. 20UIS Z,ZK 3 Introduction to ITS Intelligent Transport Systems (ITS), their objectives and vision. ITS in the world, in Europe and in the Czech Republic. Architecture of ITS and the role of standardization. Information

and navigation systems. ITS in road, rail and combine transport. Design of ITS, organization, preparation and implementation of the project. Current projects in the Czech Republic.

Introduction to Programming Algorithm development, methods of structured programming, high-level programming languages, basics of C programming languages (types, variables, conditions, cycles, arrays,

Code of the group: 3.S.BP 11/12

functions), programming techniques, complexity.

Name of the group: 3.sem.bak.prez.11/12

Requirement credits in the group: In this group you have to gain 27 credits

Requirement courses in the group: In this group you have to complete 10 courses

Credits in the group: 27 Note on the group:

safety and fluency.

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
11DAD	Differential and Difference Equations	Z,ZK	3	2+1	Z	Z
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	Z	Z
12PPOK	Designing Roads, Highways and Motorways Josef Kocourek, Petr Šatra, Tomáš Pad lek, Petr Kumpošt	KZ	3	1P+2C+10B	Z	Z
18PZP	Elasticity and Strength Jan Vy ichl, Jitka ezní ková, Daniel Kytý, Jan Šleichrt, Tomáš Doktor, Tomáš Fíla, Nela Kr má ová, Jan Falta, Radim Dvo ák,	Z,ZK	3	2P+1C+10B	Z	Z
11SIS	Statistics	Z,ZK	2	1+1	Z	Z
20SSA	Systems Analysis	Z,ZK	3	2+1	Z	Z
14UATT	Introduction to Automatization and Telecommunication Systems	KZ	2	3+0	Z	Z
16UDDM	Introduction to Transportation and Manipulation Technics	ZK	2	2+0	Z	Z
14ZAET	Fundamentals of Electrotechnics	KZ	2	2+1	Z	Z

Characteristics of the courses of this group of Study Plan. Code=3.3.BF 11/12 Name=3.Sem.bak.prez.11/12								
11DAD	Differential and Difference Equations	Z,ZK	3					
Difference equations	Difference equations and its systems. Some solvable types of differential equations of the first order. Linear differential equations of the n-th order. Methods for solution of the homogeneous							
equation, solution of i	nhomogeneous equation by means of variation of constants. Power series and their use for solution of differential equation. Bound	dary value problen	n. Eigennumbers					
and function for differ	ential equation. Fourier series of function.							
11FY2	Physics 2	Z,ZK	4					
Magnetic field, electro	omagnetic field. Optics, quantum character of electromagnetic radiation. Introduction into quantization, hydrogen atom. Multi-ele	ectron atoms, the	nuclei. Basics of					
solid body physics.								
12MDE	Transport Models and Transport Excesses	Z,ZK	3					
	Parameters of the traffic flow and methods for their measurement. Models of the traffic flow, communications load, line and urban systems. Theory of queues, shock waves. Quality of							
transport and its asse	ansport and its assessment. Statistical characteristics of transport. Transport excesses, their analysis, the causes, identify and minimize the consequences. Improving of transport							

12PPOK	Designing Roads, Highways and Motorways	KZ	3
Definition, types, owr	ership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standa	ard speed. Route i	n rural areas.
Range of vision for st	opping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. S	afety device. Cros	sings, junctions,
intersections.			
18PZP	Elasticity and Strength	Z,ZK	3
Tension and compres	sion. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolte	ed and welded joir	nts of structures.
Analysis of deflection	curve of beams. Torsion of circular cross sections. Combined loading. Stability.		
11SIS	Statistics	Z,ZK	2
Point estimation, prop	erties of point estimators, methods of point estimation. Testing statistical hypothesis. Fit test, independence test. Regression ar	nd correlation, line	ar regression,
correlation coefficient	, coefficient of determination, general linear model, statistical inference in linear regression, analysis of variance, multiple regress	sion, use of matrice	es in regression
20SSA	Systems Analysis	Z,ZK	3
Systems identification	n. Typical tasks of systems analysis: on the interface, routes in system, decomposition and integration, on systems feedback. Ca	apacity tasks, prod	ess analysis.
Task about behaviou	, aim behaviour, the genetic code, architecture and identity of systems. Fundamentals of technical cybernetics, stability and reli	ability of systems.	
14UATT	Introduction to Automatization and Telecommunication Systems	KZ	2
Basic axioms of tech	nical cybernetics, automatization in transportation, human as the weakest element, signalling in transpotation, modelling and pr	ojecting of transpo	ort systems,
	cal and infromation system in post, principle of telecommunication signal transmission, solving of telecommunication networks,	modulating method	ods, multimedia
networks and service	s, NGN networks.		
16UDDM	Introduction to Transportation and Manipulation Technics	ZK	2
Means of transportati	on and transportation systems. Principles, functions and arrangement of means of transportation. Motors and their characteristics.	Water transportati	on. Manipulating
technics. Principles o	lifting machines and conveyors. Legislature.		
14ZAET	Fundamentals of Electrotechnics	KZ	2
Basic electrotechnic	erms, circuit quantities. Periodic courses characteristics. Electric circuits elements and basic circuit members. Assignating of bi	poles and basic ci	rcuit elements.
Solution to direct curr	ent circuits with a help of circuit analysis elementar methods: method of consecutive reduction, unloaded voltage divider, current div	vider. Transfiguration	on star-triplange
and principle of supe	position in direct current circuits		

Code of the group: 5.S.BLED 12/13

Name of the group: 5.sem.LED bak.prez. 12/13

Requirement credits in the group: In this group you have to gain 21 credits

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

Credits in the group: 21 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
17TGA	Graph Theory and its Applications in Transport Alena Rybi ková, Denisa Mocková, Dušan Teichmann	Z,ZK	4	2P+2C+12B	Z	Z
21LL2	Aircraft 2	Z,ZK	5	2+2	Z	Z
21LTN	Air Navigation Jakub Kraus	Z,ZK	2	2P+1C+12B	L	Z
21ZLE2	Principles of Flight 2	Z,ZK	4	2+1	Z	Z
21LPS2	Flight Operation & Requirements and Legislation 2	ZK	1	2+0	Z	Z
14DB	Database Systems	KZ	2	0+2	Z	Z
21DPL	Airports - Design and Operation	KZ	1	2+0	Z	Z
21LA1	English in Aviation 1	Z	2	0+2	Z	Z

Characteristics of the courses of this group of Study Plan: Code=5.S.BLED 12/13 Name=5.sem.LED bak.prez. 12/13 17TGA Graph Theory and its Applications in Transport Z.ZK Basic terms of graph theory, paths in graphs, flows in networks, location problems, design problems on graphs, optimum routing, use of graphs in oth scientific disciplines Z,ZK Manufacturers responsibility, responsibilities of operator and professional supervising; legislation in area of airworthiness; international and national standards; static solidity of aircraft structures; aeroelasticity; inherent and operational reliability of aircraft structure; fatigue strength; aircraft structure lifetime presumption. 21LTN Air Navigation Z.ZK 2 Earth - its shape, parameters and properties. Aeronautical charts and their use. Measuring time. Dead reckoning. Radionavigation aids. Global navigation satellite systems. Air traffic services routes and their design. 21ZLE2 Principles of Flight 2 Ways of producing thrust, propeller, jet propulsion, thrust and momentum, propulsion efficiency, aerodynamics of fixed and variable pitch propeller, propeller operation modes, propeller airstream effect, gyroscopic effect, balance of forces in horizontal flight, glide and landing, performances, take off and climb, acceleration, positive load, manoeuvres, stability and controllability, transsonic speeds. 21LPS2 Flight Operation & Requirements and Legislation 2 Continuing in education of graduated experts in aviation requirements. Ministry of Transport and Civil Aviation Authority action. ICAO Annexes 11-18. Aviation Requirements of Czech Republic L11-L18. Rquirement of ICAO Doc. 4444 analysis and exposition, introduction to EASA legislation. 14DB Database Systems ΚZ 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.

21DPL Airports - Design and Operation KZ 1

Introductory conditions for development planing runway systems and terminal facilities. Strength of pavements, approximate analysis of RWY distance. Investment planing-operator activities. Certification of international airports - standard checking. Irregular events.

21LA1 English in Aviation 1 Z 2
Terminology used in civil aviation in the general context and emphasiye on the ability to receive information only in English.

Code of the group: 5.S.BLED VÝB R 12/1

Name of the group: 5.sem.LED výb r p edm tu 12/13

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
14PT	Advanced Methods of Parametric Programming	KZ	2	0+2	Z	Z
14WS2	Webdesign With Web Standards 2	KZ	2	0+2	Z	Z

Characteristics of the courses of this group of Study Plan: Code=5.S.BLED VÝB R 12/1 Name=5.sem.LED výb r p edm tu 12/13

Characteristics of the courses of this group of Study Plan: Code=5.5.bLED VYB R 12/1 Name=5.Sem.LED Vyb P p edin tu 12/13							
14PT	Advanced Methods of Parametric Programming	KZ	2				
Assemblies programmir	Assemblies programming - tools and methodology of working subassemblies and assemblies, sheet metal parts modelling, welded assemblies, pipelines, and distribution lines.						
Photorealistic output rer	ndering - physical and material properties, lighting sources. MKP - visual example.						
14WS2	Webdesign With Web Standards 2	KZ	2				
Advanced CSS techniques. Multi-level menu. SEO - Search Engine Optimization. Web technologies: JavaScript, Flash, PHP, AJAX. AccessKey, Favicon, rollovers, lightboxes. Using							
API for maps or searching. Audit and page statistics. Use of useful scripts. Systems for content management.							

Code of the group: 6.S.BLED BC PRÁCE 1

Name of the group: 6.sem.LED bakalá ská práce 12/13

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
17BPLE	Bachelor Thesis (for Branch LED)	Z	2	0+3	L	Z
21BPLE	Bachelor Thesis (for Branch LED)	Z	2	0+3	L	Z

Characteristics of the courses of this group of Study Plan: Code=6.S.BLED BC PRÁCE 1 Name=6.sem.LED bakalá ská práce 12/13

Characteristics of	Characteristics of the courses of this group of Study Flant. Code=0.5.BEED BC FRACE I Name=0.5em.EED bakara ska prace 12/15						
17BPLE	Bachelor Thesis (for Branch LED)	Z	2				
Expert assistance durin	Expert assistance during the processing of bachelor thesis and preparation for oral bachelor degree graduation.						
21BPLE	Bachelor Thesis (for Branch LED)	Z	2				
Expert assistance durin	Expert assistance during the processing of bachelor thesis and preparation for oral bachelor degree graduation.						

Code of the group: 6.S.BLED 12/13

Name of the group: 6.sem.LED bak.prez. 12/13

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 10 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
17DAS	Transportation and Communication Law	Z	1	2+0	L	Z
13ERP	Company Economy and Management	Z,ZK	3	2+1	L	Z
21EKL	Air Transport Economy Eva Endrizalová	Z,ZK	3	2P+1C	Z	Z
14ISYS	Information Systems	KZ	2	2+0	L	Z
21LA2	English in Aviation 2	Z	2	0+2	L	Z
21LIC	Human Factors	KZ	2	2+0	L	Z

210BP	Air Transport Business Eva Endrizalová, Peter Vittek	Z,ZK	3	2P+1C+12B	L	Z
21PJE	Aircraft Instruments	KZ	2	2P+0C+8B	L	Z
21PPL	Flight Planning and Performance	Z,ZK	3	2+1	L	Z
21RIL	Air Traffic Control	KZ	2	2+0	L	Z

17DAS	Transportation and Communication Law		1
	I communication law - railway, road transport, ropeway, water road, air transport, telecommunication, post, patent.		
13ERP	Company Economy and Management	Z,ZK	3
-	neighbourhood, structure of assets and liabilities, depreciation, costs, revenues and profit, break-even point, costing, inventor		-
	of management, organizational structures, human resources management, marketing, company strategy, business plan.	ory, interioral managemen	n, mrvoomnom
21EKL	Air Transport Economy	Z,ZK	3
The aim of the cou	rrse is to introduce students to the basic issues of economics and then to follow up on more complex problems of air transp	ort. Students will thus und	derstand the
principles of dema	nd and supply in air transport and the specific problems related to these topics. At the same time, they will gain a compreh	ensive understanding of c	osts and their
different types as v	well as airline revenues and yields.		
14ISYS	Information Systems	KZ	2
State-of-the-art too	ols of objects control (control and planning) including problems related to these toole use, theory of information and knowle	dge, knowledge and expe	ert systems, IS
lanning methodol	ogies, transaction systems, theory of computer networks, semantic webs and sensitivity analysis.		
21LA2	English in Aviation 2	Z	2
Terminology in the	area of aircraft construction, principles of flight, aircraft engines, instruments and systems. The subjects English Language	and English in Aviation fro	om the previou
semester are supp	osed to be of perfect proficiency. The method of teaching is the same as in the previous semester.		
21LIC	Human Factors	KZ	2
Human performace	e & limitations, capability & competence, accident statistics, flight safety, basics of flight physiology, man & ei	nvironment, breathing &a	mp; circulation
sensory system, h	ealth & hygiene, health preservation, intoxication, incapacitation, basics of flight psychology, human information proce	ssing, memory & lea	rning, theory
& model of hu	ıman 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 proc	ess and functional arrang	gements as we
as the economic a	spects and infrastructure of air transport.		
21PJE	Aircraft Instruments	KZ	2
Overview of aircra	ft instrumentation and its principles and construction, aircraft electrical systems, engine measuring and monitoring systems	, air data computer, icing	monitoring
systems, gyroscop	ic indicators, inertial and radio navigation means, communication means, data recorders, complex flight and navigation dat	a processing systems.	
21PPL	Flight Planning and Performance	Z,ZK	3
Mass and balance	, load of aircraft, determination of centre of gravity, loadsheet,trimsheet, aircraft weighing, overloading of aircraft, basic chara	acteristic speeds, runway	characteristics
take off and landin	g performance, drift down, MEL, ETOPS´, flight planning and monitoring, routing, FL and speeds selection, charts, ICAO A	TC FPL, aerodrom opera	tion minimums
fuel plan, operation	nal flight plan.		
21RIL	Air Traffic Control	KZ	2
Air traffic services	and their distribution. Organization of air traffic, flow and capacity management. Airspace management. System support for	aircraft flying through spa	ace. Flight pla
the form, content.	Separation of aircraft. Reports of air traffic services, the form, content. Harmonization and integration of ATC. CFMU and its	subsystems. Flexible use	e of airspace -

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

The role of the block: ZP

Code of the group: XP4,5,6 11/12

FUA. RVSM, RNP. New trends in the area of ATC.

Name of the group: Projekty prez.4.5.6.sem.11/12

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
15X31	Project 1	Z	2	0P+1C	L	ZP
14X31	Project 1	Z	2	0P+1C	L	ZP
13X31	Project 1	Z	2	0+1		ZP
12X31	Project 1	Z	2	0P+1C	L	ZP
11X31	Project 1	Z	2	0P+1C	L	ZP
23X31	Project 1	Z	2	0P+1C	L	ZP
17X31	Project 1 Alena Rybi ková, Denisa Mocková, Dušan Teichmann, Roman Št rba, Milan K íž, Václav Baroch, Daniel Pilát, Michal Drábek, Alexandra Dvo á ková, Václav Baroch (Gar.)	Z	2	0P+1C	L	ZP

18X31	Project 1	Z	2	0P+1C	L	ZP
20X31	Project 1	Z	2	0P+1C	L	ZP
21X31	Project 1 Peter Vittek, Jakub Kraus, Andrej Lališ, Jakub Hospodka, 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
16X31	Project 1	Z	2	0P+1C	L	ZP
15X32	Project 2	Z	2	0P+2C	Z	ZP
14X32	Project 2	Z	2	0P+2C	Z	ZP
13X32	Project 2	Z	2	0+2		ZP
12X32	Project 2	Z	2	0P+2C	Z	ZP
11X32	Project 2	Z	2	0P+2C	Z	ZP
16X32	Project 2 Petr Bouchner, Tereza Kunclová	Z	2	0P+2C	Z	ZP
23X32	Project 2	Z	2	0P+2C	Z	ZP
22X32	Project 2	Z	2	0P+2C	Z	ZP
21X32	Project 2 Eva Endrizalová, Peter Vittek, Jakub Kraus, Andrej Lališ, Jakub Hospodka, Slobodan Stoji , Lenka Hanáková, Terézia Pilmannová, Natalia Guskova,	Z	2	0P+2C	Z	ZP
20X32	Project 2	Z	2	0P+2C	Z	ZP
18X32	Project 2	Z	2	0P+2C	Z	ZP
17X32	Project 2 Alena Rybi ková, Denisa Mocková, Dušan Teichmann, Andrea Hrní ková, Milan K íž, Václav Baroch, Daniel Pilát, Michal Drábek, Alexandra Dvo á ková,	Z	2	0P+2C	Z	ZP
11X33	Project 3	Z	2	0P+1C	L	ZP
12X33	Project 3 Josef Kocourek, Tomáš Pad lek, Dagmar Ko árková	Z	2	0P+1C	L	ZP
13X33	Project 3	Z	2	0+1		ZP
14X33	Project 3	Z	2	0P+1C	L	ZP
15X33	Project 3	Z	2	0P+1C	L	ZP
23X33	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
20X33	Project 3	Z	2	0P+1C	L	ZP
18X33	Project 3	Z	2	0P+1C	L	ZP
17X33	Project 3 Alena Rybi ková, Denisa Mocková, Dušan Teichmann, Roman Št rba, Milan K íž, Václav Baroch, Daniel Pilát, Michal Drábek, Alexandra Dvo á ková, Václav Baroch (Gar.)	Z	2	0P+1C	L	ZP
16X33	Project 3	Z	2	0P+1C	L	ZP
22X33	Project 3	Z	2	0P+1C	L	ZP
Characteristic	cs of the courses of this group of Study Plan: Code=XP4,5,6 11/12 Name	-Projekty	nrez 4 5	6 sem 11/1	12	
15X31	Project 1	I OJERLY	P1621410		Z	2
14X31	Project 1				Z	2
13X31	Project 1				Z	2
12X31	Project 1				Z	2
11X31	Project 1				Z	2
23X31	Project 1				7	2

23X31	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
16X31	Project 1	Z	2
15X32	Project 2	Z	2
14X32	Project 2	Z	2
13X32	Project 2	Z	2
12X32	Project 2	Z	2
11X32	Project 2	Z	2
16X32	Project 2	Z	2
23X32	Project 2	Z	2

22X32	Project 2	Z	2
21X32	Project 2	Z	2
20X32	Project 2	Z	2
18X32	Project 2	Z	2
17X32	Project 2	Z	2
11X33	Project 3	Z	2
12X33	Project 3	Z	2
13X33	Project 3	Z	2
14X33	Project 3	Z	2
15X33	Project 3	Z	2
23X33	Project 3	Z	2
21X33	Project 3	Z	2
20X33	Project 3	Z	2
18X33	Project 3	Z	2
17X33	Project 3	Z	2
16X33	Project 3	Z	2
22X33	Project 3	Z	2

Name of the block: Compulsory courses in the program

Minimal number of credits of the block: 23

The role of the block: P

Code of the group: 4.S.BLED 11/12

Name of the group: 4.sem.LED bak.prez.11/12

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 9 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
18KIAD	Kinematics and Dynamics	Z,ZK	2	2+1	L	Р
21LL1	Aircraft 1 Jakub Kraus	KZ	3	2P+1C+10B	L	Р
21LRY	Aircraft Engines	Z,ZK	2	2+1	L	Р
21LPS1	Flight Operation & Requirements and Legislation 1	Z	1	1+1	L	Р
21LTTE	Aerodromes	Z,ZK	4	2P+1C+12B	L	Р
11MSP	Modeling of Systems and Processes Lucie Kárná, Bohumil Ková, Jana Kuklová Jana Kuklová Bohumil Ková (Gar.)	Z,ZK	4	2P+2C+12B	L	Р
14WS1	Webdesign With Web Standards 1	KZ	2	0+2	L	Р
21ZT	ATM Systems Vladimír Machula, Stanislav Pleninger Stanislav Pleninger (Gar.)	ZK	2	2P+0C	Z,L	Р
21ZLE1	Principles of Flight 1	KZ	3	2+1	L	Р
14ZM	Fundamentals of Parametric Programming	KZ	2	0+2	L	Р

Characteristics of the courses of this group of Study Plan: Code=4.S.BLED 11/12 Name=4.sem.LED bak.prez.11/12

18KIAD	Kinematics and Dynamics	Z,ZK	2
Motion along a line	, motion along a curve. Kinematics of rigid plane, kinematics of rigid body. Point mass kinematics, system of point masses. Point	mass dynamics an	d system of poir
masses, equation of	of motion. Method of Newton. Princle of D´Alembert. Free and forced vibration with one degree of freedom. Viscous damping. In	npact theory. Introdu	uction to the
solution of vibration	n with multiple degrees of freedom.		
21LL1	Aircraft 1	KZ	3
Aircraft structural a	nd conceptual design types - definitions and basic knowledge of the problem. Development of requirements, aircraft definitions	and categorisation.	Aircraft loadings
Systems of primary	and secondary airframe structure. Airframe and propulsion unit. Lectures are devoted to aeroplane topics.		
21LRY	Aircraft Engines	Z,ZK	2
Aircraft piston engir	ne, theoretical background, operational characteristics and construction schemes. Propellers, operational characterictics. Turbir	ie engine, theoretic	al background,
thermal cycles, cor	nstruction schemes, operational characteristics. Turbojet and turbofan engines, basic construction modules, and their operational	al characteristics. En	ngine control.
21LPS1	Flight Operation & Requirements and Legislation 1	Z	1
Introduction to avia	tion requirements. Ministry of Transport and Civil Aviation Authority action. ICAO Annexes 1-9. Aviation Requirements of Czech	Republic L1-L9. Rqı	uirement of ICA
Doc. 8168 analysis	and exposition, introduction to new legislation based on European Community Directives and Regulations.		
21LTTE	Aerodromes	Z,ZK	4
Aerodrome referen	ce point and temperature, TORA, TODA, ASDA, LDA. Taxiway and apron. Clearway. Stopway. Obstacle limitation surfaces. Run	way marking. Runw	ay zone lights.
Environmental con-	ditions. Public traffic.		

11MSP Modeling of Systems and Processes System and subsystem, external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of differential and differential equations. Linear and nonlinear system, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer function. Stability of LTI systems. Discretization of continuous systems. System interconnection. Webdesign With Web Standards 1 HTTP, URL, markup languages HTML and XHTML, anchors, tables, images, lists, forms, features of CSS, rules of accessible web pages, usability of web pages, problems of different browsers, one, two and three column pages, page validation, conditional comments, CSS hacks. 21ZT ATM Systems The course introduces classical and modern facilities, systems and technologies designated for ATS. Student obtains knowledge of technical principles and solutions as far as communication, navigation and surveillance aviation systems are concerned. Principles of Flight 1 ΚZ Aerodynamic drag, relation between drag and speed, streamline, boundary layer, continuity equation, Bernoulli's equation, lift and drag, air flow and pressures around wing, angle of attack, reactions of wing in air flow, lift and drag of a wing and an aircraft, coefficient of lift and drag, critical angle of attack, wing with final span, induced drag, interference, devices for lift and drag increase. 14ZM Fundamentals of Parametric Programming

Basics of work at products and parts creation. Sketch drawing by help of geometric relations, parametric dimensions, creation of adaptive models from 2D sketches. Import and export

Name of the block: Compulsory elective courses

Minimal number of credits of the block: 4

from and to another systems. Fundamentals of assemblies creation.

The role of the block: PV

Code of the group: Y1-BLED 11/12

Name of the group: PVP bak.prez. LED od 11/12

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

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

Credits in the group: 4 Note on the group:

	Name of the course / Name of the group of courses					
Code	(in case of groups of courses the list of codes of their members)	Completion	Credits	Scope	Semester	Role
	Tutors, authors and guarantors (gar.)					
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
14Y1AP	Automatization in Mail	KZ	2	2+0	Z	PV
17Y1BB	Banks and Banking	KZ	2	2+0	Z	PV
14Y1BE	Barrierless Transport	KZ	2	2P+0C	L	PV
15Y1BO	Work Safety and Health Protection in Transportation Petr Musil, Eva Rezlerová	KZ	2	2P+0C	L	PV
15Y1DU	History of Art and Society	KZ	2	2+0	Z	PV
15Y1DZ	History of Railway Eva Rezlerová, Martin Jacura	KZ	2	2P+0C	L	PV
17Y1DZ	Transported Commodities Cognization	KZ	2	2+0	L	PV
18Y1D1	Dynamics of Routes and Vehicles 1	KZ	2	2+0	Z	PV
13Y1EA	Economic - Energetic Analysis of Land Transport	KZ	2	2+0	Z	PV
13Y1EV	Public Sector Economy	KZ	2	2+0	Z	PV
17Y1EV	Public Sector Economy Veronika Faifrová	KZ	2	2P+0C	Z	PV
15Y1EH	European Integration within Historical Context Jan Feit	KZ	2	2P+0C	Z	PV
18Y1EV	Experimental Methods and Numerical Modelling	KZ	2	2+0	L	PV
15Y1FD	French Area Studies and Transportation	KZ	2	2P+0C	L	PV
20Y1GI	Geographical Information Systems	KZ	2	2+0	L	PV
14Y1GD	GIS and Maps Digitalization	KZ	2	2+0	Z	PV
14Y1HW	Computer Hardware	KZ	2	2P+0C	L	PV
15Y1HL	History of Civil Aviation Eva Rezlerová, Vladimír Plos	KZ	2	2P+0C	L,Z	PV
15Y1HD	History of City Mass Transport Milan Dont, Eva Rezlerová	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 Petr Musil. Eva Rezlerová	KZ	2	2P+0C	Z	PV
20Y1IC	Human Machine Interaction	KZ	2	2+0	L	PV
16Y1KJ	Railroad Vehicles	KZ	2	2+0	L	PV
12Y1KN	Combined Transportation	KZ	2	2P+0C	Z	PV
20Y1K	Petr Nejedlý Cybernetics	KZ	2	2+0	Z	PV
21Y1LM	Aviation Meteorology	KZ	2	2+0	 L	PV
21Y1LR	Radio Technology in Aviation	KZ	2	2+0	L	PV
21Y1L	Airports - Design and Operation	KZ	2	2+0	 L	PV
21Y1LC	Human Factor	KZ	2	2+0	Z	PV
11Y1LP	Linear Programming	KZ	2	2+0	L	PV
17Y1LL	Logistics of Passenger and Freight Air Transport	KZ	2	2P+0C	L	PV
11Y1MM	Petra Skolilová Petra Skolilová (Gar.) Mathematical Models in Economy	KZ	2	2P+0C	Z	PV
18Y1MT	Engineering Materials	KZ	2	2P+0C	L	PV
17Y1ND	Jaroslav Valach Maritime Transportation	KZ	2	2+0	Z	PV
14Y1NH	Databases Design and Programming	KZ	2	2+0	L	PV
14Y1NB	Databases Design and Programming Databases Design and Programming	KZ	2	2+0	L	PV
14Y1NP	Non-parametric 3D Modelling	KZ	2	2+0	Z	PV
20Y1NS	Neural Networks	KZ	2	2+0	Z	PV
20Y1OI	Fare Collection and Information Systems	KZ	2	2P+0C	L	PV
14Y1OL	Milan Sliacky, Patrik Horaž ovský Milan Sliacky (Gar.)	KZ	2	2+0	Z	PV
14Y10S	Linux Operating System	KZ	2	2+0	Z	PV
15Y1OP	Operating Systems	KZ	2	2+0	L	PV
11Y1PV	Turning Points of the Czech Nation Parametrical and Multicriterial Programming	KZ	2	2P+0C	Z	PV
13Y1PM	Olga Vraštilová	KZ	2	2+0		
	Personal Management Pedestrian and Cycling Transport			-	_	PV
12Y1PC	Denis Liutov	KZ	2	2P+0C	L	PV
20Y1PO	Weather, Air Quality and Transportation	KZ	2	2+0	Z	PV
14Y1PG	Computer Graphics	KZ	2	2P+0C	L .	PV
11Y1PE	Computer Controlled Experiments	KZ	2	2+0	L	PV
13Y1PD	The Participation of Transport in Tourist Trade Management	KZ	2	2+0	L	PV
14Y1PM 21Y1PU	Advanced Methods of Parametric Programming	KZ	2	2+0	L	PV
12Y1PD	Aircraft Maintenance Technology	KZ KZ	2	2+0 2P+0C	L Z	PV
	Assessment of Transport Structures	KZ	2	2P+0C 2P+0C	Z	PV
14Y1PJ 12Y1C1	C Programming Language Designing Roads in Civil 3D I	KZ	2	2P+0C 2P+0C	 L	PV
	Tomáš Honc					PV
12Y1C2	Designing Roads in Civil 3D II Tomáš Honc	KZ	2	2P+0C	Z	PV
18Y1P1	Design of Structures 1	KZ	2	2+0	L	PV
16Y1PV	Operation, Construction and Maintenance of Vehicles	KZ	2	2P+0C	L	PV
12Y1PU	Organization Disposition of Railway Stations	KZ	2	2P+0C	L -	PV
12Y1RZ	Railway Lines Reconstruction	KZ	2	2+0	Z	PV
16Y1RE	Control and Electronic Vehicle Systems Josef Mik, P emysl Toman	KZ	2	2P+0C	Z	PV
16Y1RV	Railroad Vehicles Driving	KZ	2	2+0	L	PV
21Y1RL	Air Traffic Control	KZ	2	2+0	L	PV
13Y1SM	MESE Simulation	KZ	2	2+0	Z	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
12Y1SU	Road Management and Maintenance Dagmar Ko árková, Otakar Vacín	KZ	2	2P+0C	L	PV
18Y1SN	Statically Nondeterminated Structures	KZ	2	2+0	Z	PV
16Y1TJ	Technological Quality Aspects	KZ	2	2+0	Z	PV

201116	Technology of Electronic Systems					
20Y1TD	Telematics Databases	KZ	2	2+0	Z	PV
11Y1TG	Graph Theory Lucie Kárná Lucie Kárná (Gar.)	KZ	2	2P+0C	L	PV
16Y1TR	Theory of Railroad Vehicle Driving	KZ	2	2+0	Z	PV
16Y1TZ	Transporting Devices	KZ	2	2+0	L	PV
14Y1TI	Creating Interactive Internet Applications	KZ	2	2P+0C	L	PV
	Introduction of Rail Vehicles			1	L	
18Y1UK	Jitka ezní ková, Josef Kolá	KZ	2	2P+0C	_	PV
14Y1VB	Visual Basic	KZ	2	2+0	L	PV
12Y1VC	Waterways and Shipping	KZ	2	2P+0C	Z	PV
14Y1VM	Development of Applications for Mobile Devices	KZ	2	2P+0C	Z	PV
21Y1ZT	ATM Systems	KZ	2	2+0	Z	PV
16Y1ZG	Introduction into Applied Computer Graphics	KZ	2	2P+0C	L	PV
18Y1ZD	Basics of Two-Dimensional Design	KZ	2	2+0	Z	PV
11Y1ZF	Introduction to Solid State Physics	KZ	2	2+0	Z	PV
14Y1ZM	Fundamentals of parametric and adaptive modeling	KZ	2	2P+0C	L	PV
18Y1ZT	Basics of Three-Dimensional Design	KZ	2	2+0	L	PV
12Y1ZU	Principles of Urbanism Karel Hájek	KZ	2	2P+0C	Z	PV
16Y1ZL	Vehicle Testing, Legislation and Construction Josef Mík, Zuzana Radová	KZ	2	2P+0C	Z	PV
Characteristics of the	e courses of this group of Study Plan: Code=Y1-BLED 11/12 Na	me=PVP bak	c.prez. Li	ED od 11/	12	
	ternative Forms of Transportation Project Financing		-		KZ	2
There will be specifed such	forms of financing in transportation, where the public sector body perform the final deb	=	-		-	
	the transaction and it is not the counterparty of the financial institute which provides the	tunding. Issue of s	securities as	an aiternativ	ve source or	
project.		tunding. Issue of s	securities as		KZ	2
project. 18Y1AM Ar Survey of tissues. Anatomic	natomy, Mobility and Safety of Man al structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical s	structure of muscle	es. Blood cir	culation and	KZ nervous sys	2 stem. Structure
project. 18Y1AM Ar Survey of tissues. Anatomic and biomechanics of muscu	natomy, Mobility and Safety of Man al structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical s ular-skeletal system. Injury of human organs and musculo-skeletal system during traffic	structure of muscle	es. Blood cir	culation and	KZ nervous sys	2 stem. Structure
project. 18Y1AM Ar Survey of tissues. Anatomic and biomechanics of muscu joint prostheses. Protective	natomy, Mobility and Safety of Man al structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical sular-skeletal system. Injury of human organs and musculo-skeletal system during traffic means and traffic safety regulations.	structure of muscle	es. Blood cir	culation and injured man	KZ nervous sys and his trea	2 stem. Structure
project. 18Y1AM Ar Survey of tissues. Anatomic and biomechanics of muscu joint prostheses. Protective 14Y1AV Ar Advanced modifications and	natomy, Mobility and Safety of Man al structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical subtar-skeletal system. Injury of human organs and musculo-skeletal system during traffic means and traffic safety regulations. nimation and Visualization d modeling of NURBS, Patch objects, selection of objects (according to filter and propert	structure of muscle accidents. Mobili	es. Blood cir ty of ill and i	culation and injured man	KZ nervous sysand his trea	2 stem. Structure tment. Human 2 s. Atmospheric
project. 18Y1AM Ar Survey of tissues. Anatomic and biomechanics of muscu joint prostheses. Protective 14Y1AV Ar Advanced modifications and and other effects, rendering	natomy, Mobility and Safety of Man al structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical subtar-skeletal system. Injury of human organs and musculo-skeletal system during traffic means and traffic safety regulations. nimation and Visualization d modeling of NURBS, Patch objects, selection of objects (according to filter and property filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and an	structure of muscle accidents. Mobili	es. Blood cir ty of ill and i	culation and injured man and Space \(\)	NZ nervous sys and his trea KZ Warp objects Inverse Kine	2 stem. Structure tment. Human 2 s. Atmospheric ematics.
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20Y1TE

Technology of Electronic Systems

13Y1EV Public Sector Economy	KZ	2
Summary of basic economic findings, public goods - definition, public sector domains, state budget, taxes, public goods and externalities, external transfer and the internal transfer and transfer and transfer and transfer and the internal transfer and	•	
reatment, methods of assessment of public projects, transport projects and their funding, benefits of transport projects, the assessment of transp HDM-4, CSHS.	ort projects by the C	BA method,
17Y1EV Public Sector Economy	KZ	2
Economic and financial theory of public sector, public choice theory, externalites, decisions about public finance allocation, economic assessment		
ax system of the CR, state budget, management of public projects a their economic efficiency assessment, way of elaboration of PPP projects, fundamental systems of the CR, state budget, management of public projects at their economic efficiency assessment, way of elaboration of PPP projects, fundamental systems are supported by the control of the CR, state budget, management of public projects at their economic efficiency assessment, way of elaboration of PPP projects, fundamental systems are supported by the control of the CR.		
15Y1EH European Integration within Historical Context	KZ	2
Versailles system, formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communi	sm. Little Entente, its	principles and
goals. Europe after Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war	and its consequence	s for Europe.
New quality of French-German relationship - a driving power of starting European integration.	1/7	
18Y1EV Experimental Methods and Numerical Modelling Physical properties measured in structural mechanics and dynamics. Principles of strain gauge measurement. Theory of photoelasticimetry, experim	KZ	2
Basic principles of numerical methods in structural mechanics and dynamics. Finite element method in statics and dynamics. Geometry developm		
of structural elements. Boundary conditions. Material models. Solution of problems.		
15Y1FD French Area Studies and Transportation	KZ	2
France - geography and regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air		erminology.
French society and culture. Current political system. System of education, studying in France. Selected authors of French literature. French gastro		
20Y1GI Geographical Information Systems	KZ	2
Introduction to geographical information systems, creating real-world model, data models, storage of geographical data, methods of data entry, di systems, map projections, raster and vector representation, spatial algorithms and operations, and general transport roles in GIS.	gitization, geographi	cai coordinate
14Y1GD GIS and Maps Digitalization	KZ	2
Work with map sources and their creating. Maps digitalization and creation. Use and creation of other (non-graphic) information with use of datab	1	
with drawings containing maps.	5	
14Y1HW Computer Hardware	KZ	2
Computer architecture, basics of logical circuits design and their realization using FPGA. In detail, description of computer architecture and separ	ate parts designing -	controllers,
arithmetic and logical units, I/O subsystem.		
15Y1HL History of Civil Aviation	KZ	2
Beginnings of flying, development of aircrafts lighter than air. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Developme World airports. Famous aviators. Helicopters. CSA airplanes. Development of aircrafts in Czechoslovakia between the years 1945-1989. Classic e		
aviation. Modern era of civil aviation. Airline companies. Supersonic flying.	ia di aviation. Goide	i ela di civii
15Y1HD History of City Mass Transport	KZ	2
History of city mass transport in the world, development of tram, bus and trolley-bus systems. History of transport networks in the world, current to	I I	_
clearance systems. History of city transport in Prague and Brno. History of tram, bus and trolley-bus operation systems in the Czech Republic and	l Slovakia.	
12Y1HD Traffic Noise	KZ	2
Acoustic introduction, basic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regu		
area, principles of urban acoustic, noise transmission, soundproofing. Types of noise sources in area. Determination of acoustic situation in the ar computing and measurement of transport noise. Acoustic studies, measuring protocol.	ea of interest. Metho	dology of
15Y1HE Work Hygiene and Ergonomics in Traffic	KZ	2
Basic knowledge of occupational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of th	1	_
Creation and protection of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technolog		
Practical examples from the field of transportation; relevant legislature.		
20Y1IC Human Machine Interaction	KZ	2
Interaction of human-system. Methods and procedures for detecting decrease in attention. Used software and hardware tools. Bio-feedback, EEG		
16Y1KJ Railroad Vehicles	KZ	2
21st century mobility. Recent construction of railroad, city and intercity public vehicles, future and present situation, speed as a solution, maglev. Fron		
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	ne environment.			

14Y1PJ	C Programming Language	KZ	2
	e. Preprocessor, basics of the C language (data types, syntax, commands), functions, pointes, dynamical memory allocation,	string, files, struct	ures and unions.
·	tract data types (FIFO, LIFO, list), programming techniques (sorting, searching, recursion), using bitwise oprerators.		
12Y1C1	Designing Roads in Civil 3D I the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go throu	KZ	2
	, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. Th		•
	building design in the real-life profession.	io course aloe inc	radoo a baolo
12Y1C2	Designing Roads in Civil 3D II	KZ	2
The course is devoted t	the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through	igh the complete o	design of this
	, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The	ne previously acqu	uired skills are
	d. Students learn to design intersections.		
18Y1P1	Design of Structures 1	KZ	2
	elements, virtual work. Strength method. Frame analysis by strength method. Deformation method. Frame analysis by deform r´s foundation. Calculation of beam on elastic foundation. Basics of the mathematical elasticity. Wall as a structural element. F		
	s. Examples of calculations.	iate as a structur	ai member.
16Y1PV	Operation, Construction and Maintenance of Vehicles	KZ	2
-	luction. Vehicle maintenance. Vehicle diagnostics. Maintenence and repair plans. Engine maintenance and emission measure	1	
General principles of er			
12Y1PU	Organization Disposition of Railway Stations	KZ	2
-	senger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zo		nation yards.
	ology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic railway n		
12Y1RZ	Railway Lines Reconstruction ainance technology. Track maintainance machinery, superstructure and substructure building machinery and special rail vehicles	KZ	2
•	d elimination principles. Track reations and station tracks exclusion planning. Reconstruction timetable design of railway supe	•	•
16Y1RE	Control and Electronic Vehicle Systems	KZ	2
	regulation. Tools for analytical solution, linear system description. Basic types of a regulator (PID), properties, advantages, disa	l	
	Electric drive. Vehicle communication bus (CAN, LIN, FlexRay, ISObus, KWP2000 protocole etc.). Vehicle electronic control,	•	
comfort systems.			
16Y1RV	Railroad Vehicles Driving	KZ	2
	ad vehicles. Railroad vehicle parametres regulation. Servicing and operation of the railroad vehicles. Rail traction technology.	Solution of emerg	gency situations.
Searching and solving f		1/7	
21Y1RL	Air Traffic Control heir distribution. Organization of air traffic, flow and capacity management. Airspace management. System support for aircraf	KZ	2
	inen distribution. Organization of all traffic, now and capacity management. All space management. System support for aircraft on of aircraft. Reports of air traffic services, form, content. Harmonization and integration of ATC. CFMU and its subsystems. F	, , ,	• • •
RVSM, RNP. New trend		Toxiolo doo ol alli	. .
13Y1SM	MESE Simulation	KZ	2
		111	
Management game sim	ulating corporate decision making. Groups of students produce the same product, give the volume of available production cap	l I	_
Management game sim research and developm	ulating corporate decision making. Groups of students produce the same product, give the volume of available production cap	l I	_
research and developm	ulating corporate decision making. Groups of students produce the same product, give the volume of available production cap ent. Sensors and Actuators	pacity, plan budge	ets for marketing,
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research and developm 20Y1SC Principles of sensors and state (temperature, hum 11Y1SI	ulating corporate decision making. Groups of students produce the same product, give the volume of available production capent. Sensors and Actuators d actuators. Basics of measuring theory and actuating influence. The respective technologies and construction principles. Sensor idity), chemical and particle flow values. Electrical, pneumatic and hydraulic actuators and solid phase elements. Transportation Software Engineering	KZ rs of mechanical, 6	ts for marketing, 2 electro-magnetic,
research and developm 20Y1SC Principles of sensors and state (temperature, hum 11Y1SI Basic concepts of software	ulating corporate decision making. Groups of students produce the same product, give the volume of available production cap ent. Sensors and Actuators d actuators. Basics of measuring theory and actuating influence. The respective technologies and construction principles. Sensor idity), chemical and particle flow values. Electrical, pneumatic and hydraulic actuators and solid phase elements.	KZ rs of mechanical, 6	ts for marketing, 2 electro-magnetic,
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14Y1TI	Creating Interactive Internet Applications	KZ	2
	g language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions	1	=
in PHP language.			
18Y1UK	Introduction of Rail Vehicles	KZ	2
Basic characteristics	and parameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motio	n train and unit trai	ns. Rolling and
track resistance. Total	running resistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehi	cle - hydromechani	ic, hydrodynamic
and electric drive. Des	sign concept rail vehicles and drive of wheel set.		
14Y1VB	Visual Basic	KZ	2
Applications developing	ng for Visual Basic on MS-Windows .NET platform with use of .NET libraries or Visual Studio tools for graphic or console mod	le. Further, creation	of installation
utilities for these appli	cations. Work with VBA at superstructures creation for MS-Windows applications supporting VBA.		
12Y1VC	Waterways and Shipping	KZ	2
Basic modes of transp	oort. The position of water transport in the transport system of the Czech Republic and the EU. Advantages and disadvantage	es of water transpor	rt. Basic systems
of waterways in Europ	e, a network of waterways in the Czech Republic. Construction of the waterway and its equipment. Management of waterways	and its operation.	The legal regime
in inland navigation, n	avigation rules of operation, navigation maps.		
14Y1VM	Development of Applications for Mobile Devices	KZ	2
Object oriented progra	amming, Java programming language, development environment, operating system Android, development application - widge	ets, containers, thre	ads, menu,
permissions, services	, GUI.		
21Y1ZT	ATM Systems	KZ	2
The course introduces	s classical and modern facilities, systems and technologies designed for ATS. Student obtains knowledge of technical principl	aa aad aalutiana at	communication
	s classical and modern lacilities, systems and technologies designed for ALO. Student obtains knowledge of technical principl	es and solutions of	communication,
	lance systems used in aviation.	es and solutions of	communication,
		KZ	2
navigation and surveil	lance systems used in aviation.	KZ	2
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navigation and surveil 16Y1ZG Computer graphics, d	lance systems used in aviation. Introduction into Applied Computer Graphics Initroduction with emphasis on transport, including development and research. Colours, colour perception, colours	KZ schemes, models, l	2 principles of 2D
navigation and surveil 16Y1ZG Computer graphics, d and 3D generation, el	lance systems used in aviation. Introduction into Applied Computer Graphics Initroduction with emphasis on transport, including development and research. Colours, colour perception, colours	KZ schemes, models, l	2 principles of 2D
navigation and surveil 16Y1ZG Computer graphics, d and 3D generation, el graphics software. 18Y1ZD	lance systems used in aviation. Introduction into Applied Computer Graphics ivision and applications with emphasis on transport, including development and research. Colours, colour perception, colour sementary algorithms for graphic data workout. Visualisation principles and tasks, technics, graphics and visualisation HW bases.	KZ schemes, models, sics. Introduction to	2 principles of 2D 2D and 3D
navigation and surveil 16Y1ZG Computer graphics, d and 3D generation, el graphics software. 18Y1ZD The comprehensive te	Introduction into Applied Computer Graphics ivision and applications with emphasis on transport, including development and research. Colours, colour perception, colour sementary algorithms for graphic data workout. Visualisation principles and tasks, technics, graphics and visualisation HW base Basics of Two-Dimensional Design	KZ schemes, models, sics. Introduction to KZ step"procedure pas	2 principles of 2D 2D and 3D
navigation and surveil 16Y1ZG Computer graphics, d and 3D generation, el graphics software. 18Y1ZD The comprehensive te	Introduction into Applied Computer Graphics ivision and applications with emphasis on transport, including development and research. Colours, colour perception, colour sementary algorithms for graphic data workout. Visualisation principles and tasks, technics, graphics and visualisation HW base Basics of Two-Dimensional Design eaching method includes primary creative principles and the introduction to the logic of free shapes in the plane. The "step-by-step in the plane in the plane.	KZ schemes, models, sics. Introduction to KZ step"procedure pas	2 principles of 2D 2D and 3D
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Name of the block: Jazyky

Minimal number of credits of the block: 12

The role of the block: J

Code of the group: JZ-B-3.4 12/13

Name of the group: Jazyk bak. 5.6.sem. od 12/13

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

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

Credits in the group: 6 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
15JZ3A	Foreign Language - English 3 Eva Rezlerová, Jan Feit, Markéta Musilová, Lenka Monková, Marie Michlová, Peter Morpuss, Jitka He manová, Dana Boušová, Barbora Horá ková,	Z	3	0P+4C	Z	J
15JZ4A	Foreign Language - English 4 Eva Rezlerová, Jan Feit, Markéta Musilová, Lenka Monková, Marie Michlová, Peter Morpuss, Jitka He manová, Barbora Horá ková, Markéta Vojanová	Z,ZK	3	0P+4C	L	J
15JZ3F	Foreign Language - French 3 Eva Rezlerová, Irena Veselková	Z	3	0P+4C+10B	Z	J
15JZ4F	Foreign Language - French 4 Eva Rezlerová, Irena Veselková	Z,ZK	3	0P+4C+10B	L	J
15JZ3N	Foreign Language - German 3 Eva Rezlerová, Martina Navrátilová, Jana Štikarová	Z	3	0P+4C+10B	Z	J

15JZ4N	Foreign Language - German 4 Eva Rezlerová, Martina Navrátilová, Jana Štikarová	Z,ZK	3	0P+4C+10B	L	J
15JZ3R	Foreign Language - Russian 3 Eva Rezlerová, Marie Michlová	Z	3	0P+4C+10B	Z	J
15JZ4R	Foreign Language - Russian 4 Eva Rezlerová, Marie Michlová	Z,ZK	3	0P+4C+10B	L	J
15JZ3S	Foreign Language - Spanish 3 Eva Rezlerová, Nina Hricsina Puškinová	Z	3	0P+4C+10B	Z	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 12/13 Name=Jazyk bak. 5.6.sem. od 12/13

15JZ3A Foreign Language - English 3

Z | 3

Grammar structure and stylistics. Conversational and specialised topics selected according to the language group level and with regard to the Faculty's fields of study pilot. Focus on improvement in perceptive and communicative skills; widening the vocabulary. Basic kinds of compositions. Presentations of own findings in both oral and written form. Technical texts and their features; terminology.

15JZ4A Foreign Language - English 4

Z,ZK

| 3

Grammar structure and stylistics. Conversational and specialised topics selected according to the language group level and with regard to the Faculty's fields of study - pilot. Focus on improvement in perceptive and communicative skills; widening the vocabulary. Basic kinds of compositions. Presentations of own findings in both oral and written form. Technical texts and their features; terminology.

15JZ3F Foreign Language - French 3

.

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

.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.

15JZ3N Foreign Language - German 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

15JZ4N Foreign Language - German 4

features. Practice of oral and written presentation.

Z.ZK

ure knowledge

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 re knowledge

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

15JZ4R Foreign Language - Russian 4

Z,ZK

3

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

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.

15JZ4S Foreign Language - Spanish 4

Z,ZK

3

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

Code of the group: JZ-B-1,2 11/12

Name of the group: Jazyk bak.3.4.sem.od 11/12

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

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

Credits in the group: 6 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
15JZ1A	Foreign Language - English 1 Eva Rezlerová, Jan Feit, Markéta Musilová, Lenka Monková, Marie Michlová, Peter Morpuss, Jitka He manová, Dana Boušová, Barbora Horá ková,	Z	3	0P+4C+10B	Z	J
15JZ2A	Foreign Language - English 2 Eva Rezlerová, Jan Feit, Markéta Musilová, Lenka Monková, Marie Michlová, Peter Morpuss, Jitka He manová, Dana Boušová, Barbora Horá ková,	Z,ZK	3	0P+4C+10B		J
15JZ1F	Foreign Language - French 1	Z	3	0+4	Z	J

15JZ2F	Foreign Language - French 2	Z,ZK	3	0+4	L	J
15JZ1N	Foreign Language - German 1	Z	3	0+4	Z	J
15JZ2N	Foreign Language - German 2	Z,ZK	3	0+4	L	J
15JZ1R	Foreign Language - Russian 1	Z	3	0+4	Z	J
15JZ2R	Foreign Language - Russian 2	Z,ZK	3	0+4	L	J
15JZ1S	Foreign Language - Spanish 1	Z	3	0+4	Z	J
15JZ2S	Foreign Language - Spanish 2	Z,ZK	3	0+4	L	J

Characteristics of	f the courses of this group of Study Plan: Code=JZ-B-1,2 11/12 Name=Jazyk bak.3.4.sem.c	d 11/12	
15JZ1A	Foreign Language - English 1	Z	3
Grammatical Structure	s and Style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive an	d communicative s	kills. Elementary
stylistics forms. Oral a	nd written presentation of original research. Academic text principles and reading comprehension. Principles of rhetoric.		
15JZ2A	Foreign Language - English 2	Z,ZK	3
Grammatical structure	and style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive an	d communicative s	kills. Elementary
stylistics forms. Oral a	nd written presentation of original research. Academic text principles and reading comprehension. Principles of rhetoric.		
15JZ1F	Foreign Language - French 1	Z	3
Grammar structure an	d stylistics. Conversational and specialised topics selected according to the language group level and with regard to the Facu	lty's fields of study	/. Focus on
improvement in percer	tive and communicative skills; widening the vocabulary. Basic kinds of compositions. Presentations of own findings in both or	al and written form	ıs. Technical
texts and their features	; practice of oral and written presentation.		
15JZ2F	Foreign Language - French 2	Z,ZK	3
Grammar structure an	d stylistics. Conversational and specialised topics selected according to the language group level and with regard to the Facu	lty's fields of study	/. Focus on
improvement in percer	tive and communicative skills; widening the vocabulary. Basic kinds of compositions. Presentations of own findings in both or	al and written form	ıs. Technical
texts and their features	; practice of oral and written presentation.		
15JZ1N	Foreign Language - German 1	Z	3
Grammar structure an	d stylistics. Conversational and specialised topics selected according to the language group level and with regard to the Facu	lty's fields of study	/. Focus on
improvement in percep	tive and communicative skills; widening the vocabulary. Basic kinds of compositions. Presentations of own findings in both or	al and written form	ns. Technical
texts and their features	; practice of oral and written presentation.		
15JZ2N	Foreign Language - German 2	Z,ZK	3
Grammar structure an	stylistics. Conversational and specialised topics selected according to the language group level and with regard to the Facu	lty's fields of study	/. Focus on
improvement in percep	tive and communicative skills; widening the vocabulary. Basic kinds of compositions. Presentations of own findings in both or	al and written form	ns. Technical
texts and their features	; practice of oral and written presentation.		
15JZ1R	Foreign Language - Russian 1	Z	3
Grammar structure an	d stylistics. Conversational and specialised topics selected according to the language group level and with regard to the Facu	lty's fields of study	/. Focus on
improvement in percep	tive and communicative skills; widening the vocabulary. Basic kinds of compositions. Presentations of own findings in both or	al and written form	ns. Technical
texts and their features	; practice of oral and written presentation.		
15JZ2R	Foreign Language - Russian 2	Z,ZK	3
Grammar structure an	stylistics. Conversational and specialised topics selected according to the language group level and with regard to the Facu	ity's fields of study	/. Focus on
improvement in percer	tive and communicative skills; widening the vocabulary. Basic kinds of compositions. Presentations of own findings in both or	al and written form	ns. Technical
texts and their features	; practice of oral and written presentation.		
15JZ1S	Foreign Language - Spanish 1	Z	3
Grammar structure an	stylistics. Conversational and specialised topics selected according to the language group level and with regard to the Facu	ity's fields of study	/. Focus on
improvement in percer	tive and communicative skills; widening the vocabulary. Basic kinds of compositions. Presentations of own findings in both or	al and written form	ns. Technical
texts and their features	; practice of oral and written presentation.		
15JZ2S	Foreign Language - Spanish 2	Z,ZK	3
Grammar structure an	stylistics. Conversational and specialised topics selected according to the language group level and with regard to the Facu	ity's fields of study	/. Focus on
improvement in percer	tive and communicative skills; widening the vocabulary. Basic kinds of compositions. Presentations of own findings in both or	al and written form	ns. Technical
	and the standard control of the standard standar		

List of courses of this pass:

texts and their features; practice of oral and written presentation.

Code	Name of the course	Completion	Credits			
00TVC1	Physical Education 1	Z	1			
Practical instruction	Practical instruction and training in a wide variety of sports and games: from basic recreational coaching to competitive top level training. Included are: basketball, volleyball, soccer					
	tennis, squash, floorball, bodybuilding, swimming, canoeing, aerobic.					
00TVC2	Physical Education 2	Z	1			
Practical instruction	n and training in a wide variety of sports and games: from basic recreational coaching to competitive top level training. Included are:	basketball, volleyb	all, soccer,			
	tennis, squash, floorball, bodybuilding, swimming, canoeing, aerobic.					
11DAD	Differential and Difference Equations	Z,ZK	3			
Difference equation	s and its systems. Some solvable types of differential equations of the first order. Linear differential equations of the n-th order. Methods for	or solution of the ho	mogeneous			
equation, solution of	of inhomogeneous equation by means of variation of constants. Power series and their use for solution of differential equation. Boundary	value problem. Eig	gennumbers			
	and function for differential equation. Fourier series of function.					
11FY1	Physics 1	Z,ZK	4			
Kinen	Kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermodynamics, electric field, directed electric current.					

11FY2	Physics 2	Z,ZK	4
Magnetic field, elec	ctromagnetic field. Optics, quantum character of electromagnetic radiation. Introduction into quantization, hydrogen atom. Multi-electro solid body physics.	on atoms, the nucle	∍i. Basics of
11GIE	Geometry	KZ	3
Differential geome	try of curves - parameterization, the arc of the curve, torsion and curvature, Frenet's trihedron. Kinematics - a curve as a trajectory of a curve of a curved path.	f the motion, the ve	elocity, and
11LA	Linear Algebra	Z,ZK	3
Vector spaces (line	ar combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and their their applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classifications.		ninants and
11MSP	Modeling of Systems and Processes	Z,ZK	4
	ttem, external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of different transfer of the state		
Linear and non	linear system, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer function Discretization of continuous systems. System interconnection.	n. Stability of LITs	ystems.
11MTA	Mathematical Analysis	Z,ZK	4
	ries of real numbers and its convergence. Basic properties of functions. Differential and integral calculus of the real function of one real		
	series and foundations of Fourier transform.		
11MVP	Mathematical Analysis of Function of More Variables	Z,ZK	3
1	uences in metric spaces, limit of sequence in metric space. Differential calculus of functions of several variables, differential of functio extremes of functions of several variables. Integral calculus of functions of several variables, Riemann integral, integral over curves a	-	
delinea fanctions,	of integral calculus in physics.	na sanaces in No,	аррисацогі
11PT	Probability	Z	2
-	cs. Basic probability concepts: elementary events and events, definitions and interpretation of probability. Random variable, probability	-	-
and density, mom	ents, some discrete and continuous distributions. Random vectors: joint and marginal distributions, mean vector, covariance matrix. N	/lixed distributions,	mixture of
11SIS	distributions. Law of large numbers, central limit theorem. Statistics	Z,ZK	2
	properties of point estimators, methods of point estimation. Testing statistical hypothesis. Fit test, independence test. Regression and	1 1	
correlation coefficie	ent, coefficient of determination, general linear model, statistical inference in linear regression, analysis of variance, multiple regression	, use of matrices in	regression.
11X31	Project 1	Z	2
11X32	Project 2	Z	2
11X33	Project 3	Z	2
11Y1LP	Linear Programming	KZ	2
Definition of the op	stimization problem of linear programming, application of the linear programming on economic and technical problems, normal traffic with constrains. Geometrical interpretation of linear programming problems, simplex method, duality principle.	problems and traffi	c problems
11Y1MM	Mathematical Models in Economy	KZ	2
	urse is to teach selected methods of linear programming, with theoretical procedures applicable for individual tasks and their program	1	
	of the course is the ability to implement and solve basic tasks from the queue theory, graph theory and both free and constrained op		
11Y1PE	Computer Controlled Experiments	KZ	2
Implementation	of experiment consisting of designing, measurement method selection according to required results accuracy and available measure computer-recorded parameters, data acquisition and results calculation. Evaluation of measurement method accuracy and result un		ection of
11Y1PV	Parametrical and Multicriterial Programming	KZ	2
	olem of linear programming with a parameter in objective function, on right sides and in the matrix of coeficients of linear constraints. Co	mputation of efficie	ent solution.
11Y1SI	Transportation Software Engineering	KZ	2
Basic concepts of s	oftware engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and implement	ntation using formal	techniques
11Y1TG	and practical usuage. Graph Theory	KZ	2
	ן Graph Theory d terminology of graph theory, graph representation. Problems of graph theory, problem instance. Graph search algorithms, trees, min	1	
	rian path, bipartite graph matching, flow networks, circulations, critical path method, traveling salesman problem. Problem of existence a		
	for their solving. Computational complexity, dealing with NP-complete problems, heuristic approach.		
11Y1ZF	Introduction to Solid State Physics	KZ K	2
Structure of soil	ds, crystal lattice, Bloch function, Brillouin zones. Bend theory of solids. Dynamics of 1D lattice. Phonons. Thermodynamic properties Magnetism.	or solids. Semicon	iductors.
12MDE	Transport Models and Transport Excesses	Z,ZK	3
Parameters of the t	traffic flow and methods for their measurement. Models of the traffic flow, communications load, line and urban systems. Theory of qu	leues, shock waves	
transport and its a	assessment. Statistical characteristics of transport. Transport excesses, their analysis, the causes, identify and minimize the consequences.	ences. Improving o	f transport
12PKD	safety and fluency.	Z,ZK	3
	Rail Transport Designing ork. Vehicle and track relation. Traction. Track geometrical parameters. Clearance profile. Railway lines routing. Superstructure and su		
,	Switches. Railway stations. City rail transport.		
12PPOK	Designing Roads, Highways and Motorways	KZ	3
1	ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard	-	
Range of Vision for	stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet intersections.	y device. Crossings	s, junctions,
12X31	Project 1	Z	2
12X32	Project 2	Z	2
12X33	Project 3	Z	2
12Y1C1	Designing Roads in Civil 3D I	KZ	2
	voted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through		-
particular linear b	uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The explanation of the traffic building design in the real-life profession.	course also include	es a basic
I	oxplanation of the traine building design in the real-life profession.		,

12Y1C2	Designing Roads in Civil 3D II	KZ	2
	voted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through		
particular linear b	uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The	previously acquired	d skills are
40)/411D	improved and developed. Students learn to design intersections.	KZ	2
12Y1HD	Traffic Noise ion, basic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regulations		
	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.		0,
12Y1KN	Combined Transportation	KZ	2
Combined transp	port strategy and legislation. Load units. Means of transport in combined transport. Combined transport systems. Transshipping areas.	Multimodal logistic	c centres.
12Y1PC	Pedestrian and Cycling Transport	KZ	2
•	ians. Pedestrian crossings. Modifications for blind, dim-sighted and disabled people. Design of cycle routes network. Ways of cycle route		•
for cyclists. Sepa	ration of cyclists from other transport modes. Cycle tracks and its design - one way streets, reserved traffic lanes, bus stops, crossings crossroads. Traffic signs and road marking for cyclists.	with other transpo	ort modes,
12Y1PD	Assessment of Transport Structures	KZ	2
	nsport structures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibilities of	l l	
	s on the landscape. Rating fragmentation and landscape connectivity in the preparation of linear structures. Practical examples of ass	-	
	the environment.		
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		on yards.
	rve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic		
12Y1RZ	Railway Lines Reconstruction maintainance technology. Track maintainance machinery, superstructure and substructure building machinery and special rail vehicles. De	KZ	2
	uses and elimination principles. Track sections and station tracks exclusion planning. Reconstruction timetable design of railway super		
12Y1SU	Road Management and Maintenance	KZ	2
	with ownership of roads in the Czech Republic and the administration of the road at the state and county level. It is presented developr	l l	
medium and long-t	term strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and repair	methods are discu	ussed in the
	classroom as well as investment activity in highway engineering.		
12Y1VC	Waterways and Shipping	KZ	2
	Insport. The position of water transport in the transport system of the Czech Republic and the EU. Advantages and disadvantages of v	· ·	-
or waterways in Eu	prope, a network of waterways in the Czech Republic. Construction of the waterway and its equipment. Management of waterways and in inland navigation, navigation rules of operation, navigation maps.	its operation. The it	egai regime
12Y1ZU	Principles of Urbanism	KZ	2
	of city and settlement building. Functional components and their mutual relations (working, living, recreation, transportation). Spacial	l	
	Types of towns or cities with a certain prevailing function, forms of their development. Brief overview of land-use planning.		
12ZADI	Introduction to Transportation Engineering	Z,ZK	3
Traffic survey. Terre	estrial roads. Residential zone. Land - use planning. Railway transport. Public mass transport. Integrated traffic systems. Traffic prognos	sis. Traffic safety. A	ir transport.
405	Traffic and environment.	7 71/	
13E Microeconomic	Economics and macroeconomic interpretation of economic relations. Method and subject of the economics. Economic decision making of consun	Z,ZK	3 s Market
Wildroccorioniic	structures. Labour and capital, efficiency, ownership, public choice.	icis and producers	3. Warket
13EDOT	Economy, Transport, Telecommunications	KZ	2
	communications, demand, supply, indicators, economic development, legislation, European union, regulation, liberalisation, transport		
13ERP	Company Economy and Management	Z,ZK	3
Company and its	neighbourhood, structure of assets and liabilities, depreciation, costs, revenues and profit, break-even point, costing, inventory, finance		nvestment
	appraisal, basics of management, organizational structures, human resources management, marketing, company strategy, busine		
13X31	Project 1	Z	2
13X32	Project 2	Z	2
13X33	Project 3	Z	2
13Y1EA	Economic - Energetic Analysis of Land Transport	KZ	2
	stems, traction-energetic properties, laws of vehicle motion, assessment of energy demands, traction-energetic conceptions, technical, e		
13Y1EV	Public Sector Economy sic economic findings, public goods - definition, public sector domains, state budget, taxes, public goods and externalities, externalities	KZ	2 and their
	ods of assessment of public projects, transport projects and their funding, benefits of transport projects, the assessment of transport projects.	· ·	
,	HDM-4, CSHS.	,	,
13Y1PD	The Participation of Transport in Tourist Trade Management	KZ	2
Tourist trade, trans	port, typology, market, marketing mix, transport service providers, contract cooperation, reservation systems, transport valuables, sta	ndard air carriers,	low cost air
	carriers, IATA, ICAO, road, water, rail transport.		
13Y1PM	Personal Management	KZ	2
	f leadership issue from the viewpoint of an employee as well as a manager. The accent at the experience of basic situations through a	-	- 1
αρρισαστι το της ρε	rsonal management, the assessment as a process, SWOT analysis, basic principles of personal management, theory and practice of mot styles.	луацоп, плападепа	ii ieaueisiiip
13Y1SM	MESE Simulation	KZ	2
	e simulating corporate decision making. Groups of students produce the same product, give the volume of available production capaci	ı	
5 5	research and development.		3,
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		database
	queries, relational algebra, SQL language, client / server, multilayer architectures, distributed database systems. Access to data via t		
14ISYS	Information Systems	KZ	2
orate-or-the-art to	ols of objects control (control and planning) including problems related to these toole use, theory of information and knowledge, know planning methodologies, transaction systems, theory of computer networks, semantic webs and sensitivity analysis.	ledge and expert s	systems, IS
	E.S. mig monogoog nanosonom dyblomo, moory or compater networks, comaine webs and constitute analysis.		I

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		
and CA systems. C	o-ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting possibi profiles, drawings with raster foundaments).	ilites, AutoCAD er	nvironment
14PT	Advanced Methods of Parametric Programming	KZ	2
	amming - tools and methodology of working subassemblies and assemblies, sheet metal parts modelling, welded assemblies, pipel Photorealistic output rendering - physical and material properties, lighting sources. MKP - visual example.		I .
14SIAP		KZ	2
I	Networks and Protocols		_
	on model, history and development of the Internet, principle of data transfer through computer networks (TCP/IP), performance of be net, FTP, DNS, DHCP POP3, IMAP), data acquirement from the Internet sources, communicating ability via the Internet and fundame design by the means of web sites.	•	•
14UATT	Introduction to Automatization and Telecommunication Systems	KZ	2
	chnical cybernetics, automatization in transportation, human as the weakest element, signalling in transpotation, modelling and proj		
	cal and infromation system in post, principle of telecommunication signal transmission, solving of telecommunication networks, modern and services, NGN networks.		
14UPRO	Introduction to Programming	KZ	2
	nent, methods of structured programming, high-level programming languages, basics of C programming languages (types, variables		_
g	functions), programming techniques, complexity.	-,, -, -, -,	,, -,
14WS1	Webdesign With Web Standards 1	KZ	2
-	languages HTML and XHTML, anchors, tables, images, lists, forms, features of CSS, rules of accessible web pages, usability of we		I
, o.t. <u>=</u> ,atap	browsers, one, two and three column pages, page validation, conditional comments, CSS hacks.	2 pages, presion.	0 01 0010
14WS2	Webdesign With Web Standards 2	KZ	2
	vebuesign with web Standards 2 Iniques. Multi-level menu. SEO - Search Engine Optimization. Web technologies: JavaScript, Flash, PHP, AJAX. AccessKey, Favicor		
wanted COO IECI	API for maps or searching. Audit and page statistics. Use of useful scripts. Systems for content management.	i, ronovers, lightide	unes. USIII
14721		7	
14X31	Project 1	Z	2
14X32	Project 2	Z	2
14X33	Project 3	Z	2
14Y1AP	Automatization in Mail	KZ	2
Technology of po	st shipment submission, transport, and delivery via physic and electronic way, virtual post operation. Technology of information trans	smission by electr	onic way,
oplication of new inf	ormation and communication technologies in an offer of permanent, mobile, and NGN e-communication networks, solutions to e-comr	munication networ	rk interfac
	technological principles of end telecommunication devices.		
14Y1AV	Animation and Visualization	KZ	2
	ons and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and Spa		ı Atmosphe
	rendering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animation		
14Y1BE	Barrierless Transport	KZ	2
	ss accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students v		_
	ment roads, railway stations, public transport stops, terminal buildings, vehicles, public transport, information and orientation systems. Theoretical knowledge will be supplemented by practical examples.		
14Y1GD	GIS and Maps Digitalization	KZ	2
1	es and their creating. Maps digitalization and creation. Use and creation of other (non-graphic) information with use of databases. Ir with drawings containing maps.		_
14Y1HW	Computer Hardware	KZ	2
	jure, basics of logical circuits design and their realization using FPGA. In detail, description of computer architecture and separate p		1
Computer architec	arithmetic and logical units, I/O subsystem.	arts designing - c	Ontrollers
14Y1NB		KZ	2
	Databases Design and Programming student will design his own application - that means design database, programme basic graphical interface and requested applicat	NΔ	
	student will design his own application - that means design database, programme basic draphical interace and requested applicat		2
		tion behaviour.	1
14Y1NH	Databases Design and Programming	tion behaviour.	2
14Y1NH	Databases Design and Programming se will deepen their knowledge and skills in database design and learn the procedural extension of SQL, PL/SQL, which makes it possible to the procedural extension of SQL, PL/SQL, which makes it possible to the procedural extension of SQL, PL/SQL, which makes it possible to the procedural extension of SQL, PL/SQL, which makes it possible to the procedural extension of SQL, PL/SQL, which makes it possible to the procedural extension of SQL, PL/SQL, which makes it possible to the procedural extension of SQL, PL/SQL, which makes it possible to the procedural extension of SQL, PL/SQL, which makes it possible to the procedural extension of SQL, PL/SQL, which makes it possible to the procedural extension of SQL, PL/SQL, which makes it possible to the procedural extension of SQL, PL/SQL, which makes it possible to the procedural extension of SQL, PL/SQL, which makes it possible to the procedural extension of SQL, PL/SQL, which makes it possible to the procedural extension of SQL, PL/SQL, which makes it possible to the procedural extension of SQL, PL/SQL, which makes it possible to the procedural extension of SQL, PL/SQL, which makes it possible to the procedural extension of SQL, PL/SQL, which makes it possible to the procedural extension of SQL.	tion behaviour.	2
14Y1NH tudents in this cour	Databases Design and Programming se will deepen their knowledge and skills in database design and learn the procedural extension of SQL, PL/SQL, which makes it poon the level of the database engine.	tion behaviour. KZ pssible to ensure of	2 data integr
14Y1NH tudents in this cour	Databases Design and Programming se will deepen their knowledge and skills in database design and learn the procedural extension of SQL, PL/SQL, which makes it po on the level of the database engine. Non-parametric 3D Modelling	KZ essible to ensure of	2 data integr
14Y1NH tudents in this cour	Databases Design and Programming se will deepen their knowledge and skills in database design and learn the procedural extension of SQL, PL/SQL, which makes it poon the level of the database engine.	KZ essible to ensure of	2 data integr
14Y1NH tudents in this cour	Databases Design and Programming se will deepen their knowledge and skills in database design and learn the procedural extension of SQL, PL/SQL, which makes it po on the level of the database engine. Non-parametric 3D Modelling	KZ essible to ensure of	2 data integr
14Y1NH students in this cour	Databases Design and Programming se will deepen their knowledge and skills in database design and learn the procedural extension of SQL, PL/SQL, which makes it po on the level of the database engine. Non-parametric 3D Modelling rametricmodeller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup creation, object of	KZ essible to ensure of	2 data integr
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14Y1NH tudents in this cour 14Y1NP Work in 3D non-pa 14Y1OL istributions. GNU/L	Databases Design and Programming se will deepen their knowledge and skills in database design and learn the procedural extension of SQL, PL/SQL, which makes it poon the level of the database engine. Non-parametric 3D Modelling rametricmodeller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup creation, object connected with external database. Basic definition of work with lights, materials and reflexes. Models presentation. Linux Operating System nux system installation. X-window system. Rights - Users and Groups, ACL rights. Filesystems and file attributes. Programs and pro-	KZ cesses. Boot of O	2 data integr 2 k with data 2 S, runleve
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14Y1TI	Creating Interactive Internet Applications pting language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions. Your	KZ	2
ossibilities of scri	in PHP language.	own application	programm
14Y1VB	Visual Basic	KZ	2
	eloping for Visual Basic on MS-Windows .NET platform with use of .NET libraries or Visual Studio tools for graphic or console mode. Fi		installatio
	utilities for these applications. Work with VBA at superstructures creation for MS-Windows applications supporting VBA.		
14Y1VM	Development of Applications for Mobile Devices	KZ	2
Object oriented	programming, Java programming language, development environment, operating system Android, development application - widgets,	containers, threa	ds, menu,
4 43 / 4 73 4	permissions, services, GUI.	177	
14Y1ZM	Fundamentals of parametric and adaptive modeling products and parts creation. Sketch drawing by help of geometric relations, parametric dimensions, creation of adaptive models from 2	KZ	2
asics of work at p	from and to another systems. Fundamentals of assemblies creation.	D sketches. Impo	it and exp
14ZAET	Fundamentals of Electrotechnics	KZ	2
	nic terms, circuit quantities. Periodic courses characteristics. Electric circuits elements and basic circuit members. Assignating of bipole		1
	urrent circuits with a help of circuit analysis elementar methods: method of consecutive reduction, unloaded voltage divider, current divider		
	and principle of superposition in direct current circuits.		_
14ZINF	Fundamentals of Informatics	KZ	2
	culty network, MS-Word and Open Office, use of styles and advanced features, computer functions and information transmission. Nun		
alculations. Algori	ithms and their proprieties. Flow charts for algorithms drawing. Mathematic and logic ordering algorithms incl. functions and procedures	. Work with MS-E	xcel - table
14ZM	graphs, calculations, functions.	KZ	2
	Fundamentals of Parametric Programming products and parts creation. Sketch drawing by help of geometric relations, parametric dimensions, creation of adaptive models from 2		1
asies of work at p	from and to another systems. Fundamentals of assemblies creation.	D sketches. Impo	it and exp
15JZ1A	Foreign Language - English 1	Z	3
	tures and Style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and cor	-	1
	stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles of	f rhetoric.	
15JZ1F	Foreign Language - French 1	Z	3
	ture and stylistics. Conversational and specialised topics selected according to the language group level and with regard to the Faculty		
improvement in p	perceptive and communicative skills; widening the vocabulary. Basic kinds of compositions. Presentations of own findings in both oral	and written forms	. Technica
	texts and their features; practice of oral and written presentation.		1
15JZ1N	Foreign Language - German 1	Z	3
	ture and stylistics. Conversational and specialised topics selected according to the language group level and with regard to the Faculty	s fields of study.	Focus on
		and writton forma	Toohnioo
improvement in p	perceptive and communicative skills; widening the vocabulary. Basic kinds of compositions. Presentations of own findings in both oral and written presentation.	and written forms	. Technical
	texts and their features; practice of oral and written presentation.		
15JZ1R	texts and their features; practice of oral and written presentation. Foreign Language - Russian 1	Z	3
15JZ1R Grammar struct	texts and their features; practice of oral and written presentation.	Z r´s fields of study.	3 Focus on
15JZ1R Grammar struct	texts and their features; practice of oral and written presentation. Foreign Language - Russian 1 ture and stylistics. Conversational and specialised topics selected according to the language group level and with regard to the Faculty	Z r´s fields of study.	3 Focus on
15JZ1R Grammar struct	texts and their features; practice of oral and written presentation. Foreign Language - Russian 1 ture and stylistics. Conversational and specialised topics selected according to the language group level and with regard to the Faculty perceptive and communicative skills; widening the vocabulary. Basic kinds of compositions. Presentations of own findings in both oral and the state of the sta	Z r´s fields of study.	3 Focus on
15JZ1R Grammar struct improvement in 15JZ1S Grammar struct	texts and their features; practice of oral and written presentation. Foreign Language - Russian 1 ture and stylistics. Conversational and specialised topics selected according to the language group level and with regard to the Faculty perceptive and communicative skills; widening the vocabulary. Basic kinds of compositions. Presentations of own findings in both oral texts and their features; practice of oral and written presentation. Foreign Language - Spanish 1 ture and stylistics. Conversational and specialised topics selected according to the language group level and with regard to the Faculty	Z of s fields of study. Z of s fields of study.	3 Focus on Technical
15JZ1R Grammar struct improvement in 15JZ1S Grammar struct	texts and their features; practice of oral and written presentation. Foreign Language - Russian 1 ture and stylistics. Conversational and specialised topics selected according to the language group level and with regard to the Faculty perceptive and communicative skills; widening the vocabulary. Basic kinds of compositions. Presentations of own findings in both oral at texts and their features; practice of oral and written presentation. Foreign Language - Spanish 1 ture and stylistics. Conversational and specialised topics selected according to the language group level and with regard to the Faculty perceptive and communicative skills; widening the vocabulary. Basic kinds of compositions. Presentations of own findings in both oral at the communicative skills; widening the vocabulary. Basic kinds of compositions. Presentations of own findings in both oral at the communicative skills; widening the vocabulary. Basic kinds of compositions. Presentations of own findings in both oral at the communicative skills; widening the vocabulary. Basic kinds of compositions. Presentations of own findings in both oral at the communicative skills; widening the vocabulary. Basic kinds of compositions.	Z of s fields of study. Z of s fields of study.	3 Focus on Technical
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15JZ1R Grammar struct improvement in p 15JZ1S Grammar struct improvement in p	texts and their features; practice of oral and written presentation. Foreign Language - Russian 1 ture and stylistics. Conversational and specialised topics selected according to the language group level and with regard to the Faculty perceptive and communicative skills; widening the vocabulary. Basic kinds of compositions. Presentations of own findings in both oral stexts and their features; practice of oral and written presentation. Foreign Language - Spanish 1 ture and stylistics. Conversational and specialised topics selected according to the language group level and with regard to the Faculty perceptive and communicative skills; widening the vocabulary. Basic kinds of compositions. Presentations of own findings in both oral stexts and their features; practice of oral and written presentation. Foreign Language - English 2 tures and style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and contents and styles.	Z y's fields of study. and written forms Z y's fields of study. and written forms Z,ZK mmunicative skills	3 Focus on Technical 3 Focus on Technical
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and perceptive an	nd communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work	with (professional)	text and it
	features. Practice of oral and written presentation.		
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15JZ3S	Foreign Language - Spanish 3	Z	3
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45 17 4 4	features. Practice of oral and written presentation.	7.71/	
15JZ4A	Foreign Language - English 4	Z,ZK	3
	e and stylistics. Conversational and specialised topics selected according to the language group level and with regard to the Faculty's erceptive and communicative skills; widening the vocabulary. Basic kinds of compositions. Presentations of own findings in both oral ar		
inprovement in pe	and their features; terminology.	id writterriorin. 10	orinioar tox
15JZ4F	Foreign Language - French 4	Z,ZK	3
	listics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language level and study focus at the Faculty.		-
•	nd communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work		•
	features. Practice of oral and written presentation.	,	
15JZ4N	Foreign Language - German 4	Z,ZK	3
Grammar and sty	listics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language level and study focus at the Faculty.		knowledge
and perceptive an	nd communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work	with (professional)	text and its
	features. Practice of oral and written presentation.		
15JZ4R	Foreign Language - Russian 4	Z,ZK	3
-	listics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language level and study focus at the Faculty.		_
and perceptive an	nd communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v	with (professional)	text and its
	features. Practice of oral and written presentation.		
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-	listics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of light is a second of the language level and study focus at the Faculty.		_
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. =	features. Practice of oral and written presentation.	_	
15X31	Project 1	Z	2
15X32	Project 2	Z	2
15X33	Project 3	Z	2
15Y1BO	Work Safety and Health Protection in Transportation	KZ	2
Fundamental legis	slative, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation. H		
		ealth protection pr	rogrammes
45)/4511	health insurance of home and foreign business trips, statistics, working practice.		_
15Y1DU	health insurance of home and foreign business trips, statistics, working practice. History of Art and Society	KZ	2
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16X32		_	
40)/00	Project 2	Z	2
16X33	Project 3	Z	2
16Y1KJ	Railroad Vehicles	KZ	2
	y. Recent construction of railroad, city and intercity public vehicles, future and present situation, speed as a solution, maglev. From princip the world. Division and ways of drive, efficient electronics, changers, railroad traction, energetic calculation. Railroad safety signalling		
ome realization in t	infrastructure compliance (interference). Testing.	Systems, ramoa	a vernole and
16Y1PV	Operation, Construction and Maintenance of Vehicles	KZ	2
	production. Vehicle maintenance. Vehicle diagnostics. Maintenence and repair plans. Engine maintenance and emission measureme		1
	General principles of engine diagnostics.		
16Y1RE	Control and Electronic Vehicle Systems	KZ	2
Elementary concept	ts of regulation. Tools for analytical solution, linear system description. Basic types of a regulator (PID), properties, advantages, disadvan	ntages, function.	Conventiona
and hybrid drive	control. Electric drive. Vehicle communication bus (CAN, LIN, FlexRay, ISObus, KWP2000 protocole etc.). Vehicle electronic control,	safety, communic	ation and
	comfort systems.		T
16Y1RV	Railroad Vehicles Driving	KZ	2
Electric circuits in ra	ailroad vehicles. Railroad vehicle parametres regulation. Servicing and operation of the railroad vehicles. Rail traction technology. Solu	ition of emergen	cy situations.
40V4T1	Searching and solving faults.	W7	
16Y1TJ	Technological Quality Aspects reditation. Quality management. Standards of Quality Management and its application. Quality system creation. Tools and methods of qu	KZ	2
Ser unication and acr	verification. Environmental certification. Workplace certification. QMS integration. Classification, certification of products and products are products and products and products are prod		it. Comornity
16Y1TR	Theory of Railroad Vehicle Driving	KZ	2
	pad transportation. Technical condition of railroad vehicles and responsibility for their condition. Railroad traffic regulations. Railroad transportation.		1
209.0.0	Radiocommunication system. Powering system. Power distribution.	ame carety. Cig	a. 0,0.0
16Y1TZ	Transporting Devices	KZ	2
	aterial transport technology, loose material transport - conveyors with tractive elements, conveyors without tractive elements, transpor		1
	t devices, cyclic transport devices, crane mechanisms, steel constructions. Vertical transport, transport in mines, long-distance conve		
16Y1ZG	Introduction into Applied Computer Graphics	KZ	2
Computer graphics	, division and applications with emphasis on transport, including development and research. Colours, colour perception, colour scher	nes, models, prir	ciples of 2D
and 3D generatio	on, elementary algorithms for graphic data workout. Visualisation principles and tasks, technics, graphics and visualisation HW basics	. Introduction to 2	2D and 3D
	graphics software.		_
16Y1ZL	Vehicle Testing, Legislation and Construction	KZ	2
	torbike costruction, aggregate computing, driving resistance, build and parameters of traction, constructional arrangement of personal control to the control of the contro		, motorbikes,
	slation in the EU and in the world, technical legislation creation, testing methods, vehicle tests, accelerated tests, mathematical mode		
17BPLE	Bachelor Thesis (for Branch LED)	Z	2
47040	Expert assistance during the processing of bachelor thesis and preparation for oral bachelor degree graduation.		1 4
17DAS	Transportation and Communication Law	Z	1
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17TDL Basic terms in transport. Organisate t	Transportation and Communication Law Transportation and communication law - railway, road transport, ropeway, water road, air transport, telecommunication, post, pa Transport Technology and Logistics port technology and logistics. Particular steps of transport planning. Quantification of carriage relations. Line planning, Pietion of traffic in each transport means. Technological factors from the point of view of operator and client. Organisation of public city trand their application using various transport means. Graph Theory and its Applications in Transport graph theory, paths in graphs, flows in networks, location problems, design problems on graphs, optimum routing, use of graphs in or Project 1 Project 2 Project 3 Alternative Forms of Transportation Project Financing fed such forms of financing in transportation, where the public sector body perform the final debtor, i. e. debtor payments come from it ippant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of securities as an altern project. Banks and Banking system. Balance sheet, income statement, bank's capital and its functions. Banking risks. Banking products. Interest types, pay-off and deposit products. Banking payment-clearing products. Financial intermediation, open-end and closed-end funds, collective investmen its role. Bank regulation and supervision. International banking. Transported Commodities Cognization uality. Testing. Standardization. Features relevant for the transport. Packing. Stress. Protection of goods and damage prevention during the choice and effective transport means utility. Public Sector Economy acial theory of public sector, public choice theory, externalites, decisions about public finance allocation, economic assessment of public sector, public choice theory, externalites, decisions about public finance allocation, economic assessment of public segment of public projects a their economic efficiency assessment, way of elaboration of PPP projects, funding f	tent. Z,ZK unning in pasang ansport. Logistic Z,ZK ther scientific dis Z Z KZ ts budget, but the native source of tr KZ d loan securing, t schemes. Cent KZ g the carriage. C KZ c projects (CBA, m EU funds, prog KZ port process pas KZ cion, inland logist time transportation Z,ZK	3 er and freight technologies 4 ciplines. 2 2 2 2 2 3 2 3 final debtor transportation 2 financial loan ral bank and 2 optimization 2 MCA, CEA), gram HDM-4. 2 ic centre and on and smart

18MRI1	Materials 1	Z,ZK	3
Crystal structure.	Basics of thermodynamics of metals and their alloys. Balanced binary diagrams. Alloys of iron with carbon. Deterioration of solid solu steel and cast irons. Physical features. Mechanical features. Dephectostopic testing. Corosion.	utions. Heating prod	cessing of
18MRI2 Fundamen	Materials 2 tal concepts, notions. The main materials groups. Semiconductors. Polymers. Special types of steel. Properties and application of the	KZ composite materia	2 als.
18PZP	Elasticity and Strength	Z,ZK	3
Tension and compr	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.	and welded joints of	structures.
18ST	Statics	Z,ZK	3
	of forces. Calculation of reactions of mass objects and compound systems. Assessment of internal forces on statically determinate b vorks. Kinematic method for calculation of reactions of statically determinate systems. Determination of axial forces in truss constructio	· · · · · · · · · · · · · · · · · · ·	
Frincipie di virtuai v	of sections. Geometry of cross sections. Plane fiber polygons and catenary cables.	n, metriod or joints	and method
18TTED	Creation of Technical Documentation	KZ	2
	s, international standardization, types of technical drawings, representation of technical objects, technical diagrams and charts, dimensional standardization, types of technical drawings, representation of technical objects, technical diagrams and charts, dimensional standardization, types of technical drawings, representation of technical objects, technical diagrams and charts, dimensional standardization, types of technical drawings, representation of technical objects, technical diagrams and charts, dimensional standardization, types of technical drawings, representation of technical objects, technical diagrams and charts, dimensional standardization, types of technical drawings, representation of technical objects, technical diagrams and charts, dimensional standardization of technical drawings.	onal and geometric	al accuracy,
	arrangement of drawing sheets, types of schemes and their creation.		
18X31	Project 1	Z	2
18X32	Project 2	Z	2
18X33	Project 3	Z	2
18Y1AM	Anatomy, Mobility and Safety of Man	KZ	2
	natomical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circulation of muscular-skeletal system. Injury of human organs and musculo-skeletal system during traffic accidents. Mobility of ill and injured n	•	
and biomechanics	joint prostheses. Protective means and traffic safety regulations.	nan and ms neam	ziii. i iuiiiaii
18Y1D1	Dynamics of Routes and Vehicles 1	KZ	2
	sis of vibration of multimass systems. Dynamical model of vehicle and interaction with transport structure. Assessment of structure vil		
	Vibroisolation and absorbers of dynamical effects. Methods of experimental dynamics. FEM in structure dynamics.		
18Y1EV	Experimental Methods and Numerical Modelling	KZ	2
	measured in structural mechanics and dynamics. Principles of strain gauge measurement. Theory of photoelasticimetry, experimental n		
Basic principles of I	numerical methods in structural mechanics and dynamics. Finite element method in statics and dynamics. Geometry development, di	scretization to elem	ents, types
40\/4MT	of structural elements. Boundary conditions. Material models. Solution of problems.	KZ	_
18Y1MT Systematic overvie	Engineering Materials w of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers and		2 tion is paid
	ogical materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's		tion is paid
18Y1P1	Design of Structures 1	KZ	2
Deformations of be	am elements, virtual work. Strength method. Frame analysis by strength method. Deformation method. Frame analysis by deformation	on method. Simple	olanar grid.
Beam on elastic	Winkler's foundation. Calculation of beam on elastic foundation. Basics of the mathematical elasticity. Wall as a structural element. P	late as a structural	member.
	Statical function of shells. Examples of calculations.		
18Y1SN	Statically Nondeterminated Structures	KZ	. 2
	ne beam element, virtual work. Strength method. Frame analysis by strength method. Deformation method. Frame analysis by deforn astic Winkler's foundation. Calculation beam on elastic foundation. Basement of the mathematical elasticity. Calculation of walls. Calc		
grid. Bearn on el	shells. Examples of calculations.	culation of plates. C	yiiriuricai
18Y1UK	Introduction of Rail Vehicles	KZ	2
	cs and parameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion tra		
track resistance. To	tal running resistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehicle -	hydromechanic, hy	drodynamic
	and electric drive. Design concept rail vehicles and drive of wheel set.		
18Y1ZD	Basics of Two-Dimensional Design	KZ	2
· ·	e teaching method includes primary creative principles and the introduction to the logic of free shapes in the plane. The "step-by-step"; sips to more complex ones. The topics are closed by two-dimensional variations on basic conceptual elements and other tasks of the		
18Y1ZT	Basics of Three-Dimensional Design	KZ	2
	cus first on the three-dimensional design in defined space. The next step is the synthesis of the internal space with three-dimensional		
J 3	modelling.		
20SSA	Systems Analysis	Z,ZK	3
	tion. Typical tasks of systems analysis: on the interface, routes in system, decomposition and integration, on systems feedback. Capa		
	behaviour, aim behaviour, the genetic code, architecture and identity of systems. Fundamentals of technical cybernetics, stability and		
20UIS	Introduction to ITS	Z,ZK	3
	rt Systems (ITS), their objectives and vision. ITS in the world, in Europe and in the Czech Republic. Architecture of ITS and the role of stems. ITS in road, rail and combine transport. Design of ITS, organization, preparation and implementation of the project. Current pr		
20X31	Project 1	Z	2
20X32	Project 2	Z	2
20X33	Project 3	Z	2
20Y1GI	Geographical Information Systems	KZ	2
	ographical information systems, creating real-world model, data models, storage of geographical data, methods of data entry, digitiza		
	systems, map projections, raster and vector representation, spatial algorithms and operations, and general transport roles in		
20Y1IC	Human Machine Interaction	KZ	2
	n of human-system. Methods and procedures for detecting decrease in attention. Used software and hardware tools. Bio-feedback, E		
20Y1K	Cybernetics	Relations between	2
runuamentais of in	formation theory, dynamic systems, the principle of feedback, logical systems. Finite automata as a special case of dynamical systems and automata.	. reialions petweer	ianguages
20Y1NS	Neural Networks	KZ	2
The basic structure	and function of human brain and its main functional blocks and building elements - neurons. Models of neurons, modelling their networks and building elements - neurons.	vorks and the basic	paradigms
	of artificial neural networks.		

20Y10I	Fare Collection and Information Systems ystems in public transport and their components (on-board units, validators, turnstiles,). Information systems and their components	for usors (timetab	2
	inels) and operators (cycles, location or current delay of vehicles,). The issue of tariff systems. Other examples of clearance syst		ies, maps,
20Y1PO	Weather, Air Quality and Transportation	KZ	2
	phere, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilistic	l	1
	n pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transp		
20Y1SC	Sensors and Actuators	KZ	2
Principles of senso	rs and actuators. Basics of measuring theory and actuating influence. The respective technologies and construction principles. Sensors o	f mechanical, elect	ro-magnetic
	state (temperature, humidity), chemical and particle flow values. Electrical, pneumatic and hydraulic actuators and solid phase el	ements.	
20Y1TD	Telematics Databases	KZ	2
	Issue of telematics databases, work with OpenStreetMap layer, use of Linux OS and PostgreSQL with PostGIS extension, real tra		ı
20Y1TE	Technology of Electronic Systems	KZ	2
	the technological process, the relation of the design, construction and technology. General scheme of technological process. Principle		
electronic element	 s. Basic technology of integrated circuits. Synthesis of integrated circuits. Higher levels of technology components. Measurement, diagase aspects of electronic systems. 	gnostics, reliability.	Operationa
21BPLE	Bachelor Thesis (for Branch LED)	Z	2
ZIDI LL	Expert assistance during the processing of bachelor thesis and preparation for oral bachelor degree graduation.	_	2
21DPL	Airports - Design and Operation	KZ	1
	litions for development planing runway systems and terminal facilities. Strength of pavements, approximate analysis of RWY distance		
,	activities. Certification of international airports - standard checking. Irregular events.	·	
21EKL	Air Transport Economy	Z,ZK	3
	ourse is to introduce students to the basic issues of economics and then to follow up on more complex problems of air transport. Stud		erstand the
principles of dema	and and supply in air transport and the specific problems related to these topics. At the same time, they will gain a comprehensive un	derstanding of cos	ts and their
	different types as well as airline revenues and yields.	_	ı
21LA1	English in Aviation 1	Z	2
641.45	Terminology used in civil aviation in the general context and emphasiye on the ability to receive information only in English		
21LA2	English in Aviation 2	Z	2
Terminology in the	area of aircraft construction, principles of flight, aircraft engines, instruments and systems. The subjects English Language and English are account to be of perfect englished after the perfect englished and the perfect engli	in Aviation from	the previous
241.10	semester are supposed to be of perfect proficiency. The method of teaching is the same as in the previous semester.	KZ	2
21LIC	Human Factors e & Description Human Factors	l	I
	health & mp; hygiene, health preservation, intoxication, incapacitation, basics of flight psychology, human information processing, me		
	& model of human error, body rhythms & sleep, stress, fatigue, working methods.		,
21LL1	Aircraft 1	KZ	3
	and conceptual design types - definitions and basic knowledge of the problem. Development of requirements, aircraft definitions and ca	ı ategorisation. Aircr	aft loadings
	Systems of primary and secondary airframe structure. Airframe and propulsion unit. Lectures are devoted to aeroplane topic		
21LL2	Aircraft 2	Z,ZK	5
Manufacturers resp	ponsibility, responsibilities of operator and professional supervising; legislation in area of airworthiness; international and national star		ity of aircraft
041 D04	structures; aeroelasticity; inherent and operational reliability of aircraft structure; fatigue strength; aircraft structure lifetime presur	nption.	
21LPS1	Flight Operation & Requirements and Legislation 1 ation requirements. Ministry of Transport and Civil Aviation Authority action. ICAO Annexes 1-9. Aviation Requirements of Czech Reput	_	1 1
illifoduction to avia	Doc. 8168 analysis and exposition, introduction to new legislation based on European Community Directives and Regulation	•	IEIII OI ICAC
21LPS2	Flight Operation & Requirements and Legislation 2	ZK	1
	ation of graduated experts in aviation requirements. Ministry of Transport and Civil Aviation Authority action. ICAO Annexes 11-18. A		1
	Republic L11-L18. Rquirement of ICAO Doc. 4444 analysis and exposition, introduction to EASA legislation.		
21LRY	Aircraft Engines	Z,ZK	2
	gine, theoretical background, operational characteristics and construction schemes. Propellers, operational characterictics. Turbine er		
	construction schemes, operational characteristics. Turbojet and turbofan engines, basic construction modules, and their operational characteristics.	•	•
21LTN	Air Navigation	Z,ZK	2
Earth - its shape,	parameters and properties. Aeronautical charts and their use. Measuring time. Dead reckoning. Radionavigation aids. Global navigati		s. Air traffic
	services routes and their design.		
21LTTE	Aerodromes	Z,ZK	4
Aerodrome refere	ence point and temperature, TORA, TODA, ASDA, LDA. Taxiway and apron. Clearway. Stopway. Obstacle limitation surfaces. Runway	marking. Runway z	zone lights.
01055	Environmental conditions. Public traffic.	:-	
210BP	Air Transport Business	Z,ZK	3
AVIALION DUSINESS (and transport operations is a core subject for understanding operational relationships in air transport. It focuses on the process and fu as the economic aspects and infrastructure of air transport.	incuonal arrangem	ienis as we
21PJE	Aircraft Instruments	KZ	2
	Afficiant instruments raft instrumentation and its principles and construction, aircraft electrical systems, engine measuring and monitoring systems, air dat	1	I
	gyroscopic indicators, inertial and radio navigation means, communication means, data recorders, complex flight and navigation data		-
21PPL	Flight Planning and Performance	Z,ZK	3
	, load of aircraft, determination of centre of gravity, loadsheet, trimsheet, aircraft weighing, overloading of aircraft, basic characteristic s		1
	ng performance, drift down, MEL, ETOPS´, flight planning and monitoring, routing, FL and speeds selection, charts, ICAO ATC FPL, a		
	fuel plan, operational flight plan.		
21RIL	Air Traffic Control	KZ	2
	and their distribution. Organization of air traffic, flow and capacity management. Airspace management. System support for aircraft fly		
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 o	f airspace -
	FUA. RVSM, RNP. New trends in the area of ATC.	_	· -
21X31	Project 1	Z	2
21X32	Project 2	Z	2

21X33	Project 3	Z	2
21Y1L	Airports - Design and Operation	KZ	2
ntroductory condition	s for development of planning of runway systems and terminal facilities. Road construction, approximate analysis of RWY distanc	e. İnvestment planı	ning - operato
	activities. Certification of international airports - standard checking. Unexpected events and their handling.		
21Y1LC	Human Factor	KZ	2
uman performace &	amp; limitations, ability & competence, accident statistics, flight safety, basics of flight physiology, individuals & environm	nent, breathing &an	np; circulation
sensory system, hea	alth & hygiene, health preservation, intoxication, incapacitation, basics of flight psychology, human information processing, r	memory & lea	rning, theory
	& model of human error, biorhythms & sleep, stress, fatigue, working methods.		
21Y1LM	Aviation Meteorology	KZ	2
tructure of atmosphe	ere. Vertical stratification. Pressures QNH, QFE, QFF, QME. Instability. Atmospherical fronts. Atmospherical precipitation, origin &	amp; categorisatio	n. Turbulenc
orces producing win	d. Cyclone and anticyclone. Gradient wind. Geostrofical and geocyclostrophical wind. Visibilities in air transport. Dangerous meteo	rological aspects. I	/leteorologic
	maps. Climatology. Circulation.Intertropical front. Meteorological information.		
21Y1LR	Radio Technology in Aviation	KZ	2
Electric signals and	the wave spectrum. Analog and digital modulations. Noises. Filters. Resonance circuits. Electromagnetic field. Electromagnetic v	vave propagation.	Nave ranges
	in aviation, radiation and reception of electromagnetic field. Antennas in aviation, receivers and transmitters.		
21Y1PU	Aircraft Maintenance Technology	KZ	2
	Basics of aircraft maintenance technology, legislation, aircraft release into operation, safety, equipment.		
21Y1RL	Air Traffic Control	KZ	2
r traffic services and	d their distribution. Organization of air traffic, flow and capacity management. Airspace management. System support for aircraft	flying through space	e. Flight pla
form, content. Sepa	ration of aircraft. Reports of air traffic services, form, content. Harmonization and integration of ATC. CFMU and its subsystems.	Flexible use of airs	pace - FUA.
	RVSM, RNP. New trends in the area of ATC.		
21Y1ZT	ATM Systems	KZ	2
he course introduce	s classical and modern facilities, systems and technologies designed for ATS. Student obtains knowledge of technical principles navigation and surveillance systems used in aviation.	and solutions of co	mmunication
21ZLD	Introduction to Air Transport	KZ	2
	mponent of complex transport system. International status of civil aviation. International organizations in Europe and worldwide.	ı	I
	Commercial air transport. Technical operations of aeroplanes.		
21ZLE1	Principles of Flight 1	KZ	3
	elation between drag and speed, streamline, boundary layer, continuity equation, Bernoulli's equation, lift and drag, air flow and		
	ng 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, induce		
	lift and drag increase.		
21ZLE2	Principles of Flight 2	Z,ZK	4
lays of producing thr	ust, propeller, jet propulsion, thrust and momentum, propulsion efficiency, aerodynamics of fixed and variable pitch propeller, pro	peller operation mo	des, propelle
airstream effect, gy	roscopic effect, balance of forces in horizontal flight, glide and landing, performances, take off and climb, acceleration, positive k	oad, manoeuvres,	stability and
	controllability, transsonic speeds.		
21ZT	ATM Systems	ZK	2
The course introd	uces classical and modern facilities, systems and technologies designated for ATS. Student obtains knowledge of technical princ	ciples and solution	s as far as
	communication, navigation and surveillance aviation systems are concerned.		
22UN	Traffic Accidents Introduction	Z	2
raffic accident as a ¡	physical process, systematic submission, vehicle x human x infrastructure interaction, accidents statistics, aircraft accidents, acc	idents on railways,	accidents o
	waterways, road traffic accidents, other aspects, accidental prevention.		
22X31	Project 1	Z	2
22X32	Project 2	Z	2
22X33	Project 3	Z	2
23X31	Project 1	Z	2
	•		_
23X32	Project 2	Z	2
23X33	Project 3	Z	2

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