Study plan

Name of study plan: Bachelor TET-LED Full-Time from 2024/25

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: 178
Elective courses credits: 2
Sum of credits in the plan: 180

Note on the plan:

Name of the block: Compulsory courses Minimal number of credits of the block: 166

The role of the block: Z

Code of the group: 1S-BP-TET-20/21

Name of the group: 1st Sem. Bachelor Full-Time TET from 2020/21

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

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

Credits in the group: 30 Note on the group:

Note on the g	ioup.					
Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11CAL1	Calculus 1 Olga Vraštilová, Tomáš Tasák, Magdalena Hykšová, Bohumil Ková , Ond ej Navrátil Bohumil Ková Ond ej Navrátil (Gar.)	Z,ZK	7	2P+4C+22E	Z	Z
11LA	Linear Algebra Lucie Kárná, Pavel Provinský, Martina Be vá ová Martina Be vá ová Martina Be vá ová (Gar.)	Z,ZK	3	2P+1C+10E	Z	Z
12ZYDI	Introduction to Transportation Engineering Zuzana arská, Dagmar Ko árková, Jan Kruntorád	Z,ZK	2	1P+1C	Z	Z
18MTY	Materials Science and Engineering Jaromír Kylar, Veronika Drechslerová, Jaromír Kylar, Nela Kr má ová, Jitka ezní ková, Jaroslav Valach, Vít Malinovský, Veronika Drechslerová, Jaromír Kylar Jaroslav Valach Jaroslav Valach (Gar.)	Z,ZK	3	2P+1C+10E	Z	Z
11GIE	Geometry Pavel Provinský, Old ich Hykš, Šárka Vorá ová Old ich Hykš Old ich Hykš (Gar.)	KZ	3	2P+2C+12E	Z	Z
14ASD	Algorithm and Data Structures Tomáš Brandejský, Michal Je ábek, Alena Kubá ová, Jan Procházka, Vít Fábera, Martin Fiala Vít Fábera Vít Fábera (Gar.)	KZ	3	0P+2C+8B	Z	Z
14KSP	Constructing with Computer Aid Vít Fábera, Radek Kratochvíl Lukáš Svoboda	KZ	2	0P+2C+8E	Z	Z
18TED	Technical Documentation Jitka ezní ková, Vít Malinovský Jitka ezní ková Jitka ezní ková (Gar.)	KZ	2	1P+1C+8E	Z	Z
15DPLG	Transportation Psychology Eva Rezlerová, Jana Štikarová	Z	2	2P+0C+6E	Z	Z
16UDOP	Introduction into Vehicles Zuzana Radová, Petr Bouchner	Z	2	2P+0C+8E	Z	Z
TV-1	Physical Education	Z	1		Z	Z

Characteristics of the courses of this group of Study Plan: Code=1S-BP-TET-20/21 Name=1st Sem. Bachelor Full-Time TET from 2020/21

11CAL1	Calculus 1	Z,ZK	7			
Sequence of real numbers and its limit. Basic properties of mappings. Function of one real variable, its limit and derivative. Indefinite integral, Newton integral, Riemann integral, improper						
Riemann integral. First-	order differential equations, linear differential equations.					

11LA Linear Algebra Z,ZK 3
Vector spaces (linear combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and their solvability. Determinants and their applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classification.

12ZYDI	Introduction to Transportation Engineering	Z,ZK	2
Role of transportatio	n in land-use planning. Basic terms in transportation engineering. Traffic survey and traffic prognosis. Introduction to topic of roa	ds, public mass trai	nsport. Negative
impacts of transporta	ation to environment and safety.		
18MTY	Materials Science and Engineering	Z,ZK	3
Basic course of mate	erials science and engineering explains mechanical properties of structural materials based on their bonding forces and microstr	ucture. However th	e main attention
is paid to metals as	the most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and	l composites. Atten	tion is also paid
to degradation proce	esses in materials, to defectoscopy and to main mechanical tests.		
11GIE	Geometry	KZ	3
Differential geometry	vof curves - parameterization, the arc of the curve, torsion and curvature, Frenet's trihedron. Kinematics - a curve as a trajecto	ry of the motion, th	e velocity, and
acceleration of a par	ticle moving on a curved path.		
14ASD	Algorithm and Data Structures	KZ	3
Students will analyze	e problems, design a theoretical solution to a given problem and write the resulting algorithm using flowcharts, practice reading	algorithms written u	sing flowcharts,
and use basic Boole	an algebra to construct constraints in algorithms. Students will be introduced to the basics of the Python programming languag	e - variable, branch	ing, loops, they
will learn to work wit	h variables of basic data types (integer, floating point and string) and the list data structure in their programs.		
14KSP	Constructing with Computer Aid	KZ	2
"CAD systems" term	determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic common	work rules in grapl	nic applications
and CA systems. Co	-ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting pos	sibilites, AutoCAD	environment
profiles, drawings wi	th raster foundaments).		
18TED	Technical Documentation	KZ	2
Technical standards	, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensio	nal and geometrica	al accuracy,
arrangement of draw	ring sheets.		
15DPLG	Transportation Psychology	Z	2
Subject of psycholog	y and its basic concepts. Information intake, decision-making and behaviour. Performance. Engineering psychology and vehicle o	construction. Psych	ological aspects
of travel route and tr	affic conditions, accidents and traffic incidents. Selection and training of the staff. Work and leisure. Age as a factor in transport	operation.	
or traver route and tr			
16UDOP	Introduction into Vehicles	Z	2
16UDOP	Introduction into Vehicles ortation systems. Functionality and setup. Movement and drive principles. Engines and their characteristics. Rail, road, air and v		_
16UDOP Vehicles and transpo			_
16UDOP Vehicles and transpo	ortation systems. Functionality and setup. Movement and drive principles. Engines and their characteristics. Rail, road, air and v		_

Code of the group: 2S-BP-TET-20/21

Name of the group: 2nd Sem. Bachelor Full-Time TET from 2020/21

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

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

Credits in the group: 30 Note on the group:

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Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11CAL2	Calculus 2 Olga Vraštilová, Tomáš Tasák, Magdalena Hykšová, Ond ej Navrátil, Old ich Hykš Magdalena Hykšová Ond ej Navrátil (Gar.)	Z,ZK	5	2P+3C+20B	L	Z
11STAT	Statistics Pavel Provinský, Evženie Uglickich, Pavla Pecherková, Michal Matowicki, Natálie Blahitka, Ivan Nagy, Jana Kuklová Pavla Pecherková Evženie Uglickich (Gar.)	Z,ZK	4	2P+2C+12B	L	Z
12ZTS	Railway Lines and Stations Lukáš Týfa, Martin Jacura, Petr Šatra, Tomáš Javo ík, Ond ej Trešl Lukáš Týfa (Gar.)	Z,ZK	4	2P+2C+10B	L	Z
18SAT	Structural Analysis Jaromír Kylar, Veronika Drechslerová, Nela Kr má ová, Jitka ezní ková, Daniel Kytý, Jan Vy ichl, Tomáš Doktor, Jan Falta, Jan Šleichrt Daniel Kytý (Gar.)	Z,ZK	4	2P+2C+14B	L	Z
20SYSA	Systems Analysis Zuzana B linová, Ji í R ži ka, Patrik Horaž ovský, Petr Bureš Zuzana B linová (Gar.)	Z,ZK	5	2P+2C+14B	L	Z
14PRG	Programming Alena Kubá ová, Jan Procházka, Martin Fiala, Jana Kaliková, Jan Kr ál, Lukáš Svoboda Jana Kaliková Jana Kaliková (Gar.)	KZ	2	0P+2C+8B	L	Z
17TEDL	Transport Technology and Logistics Vít Janoš, Michal Drábek, Zden k Michl, Rudolf Vávra, Stanislav Metelka Zden k Michl Vít Janoš (Gar.)	KZ	3	2P+1C	L	Z
21ZALD	Basics of Air Transport Jakub Hospodka, Tomáš Tlu ho, Ji í Volt, Peter Olexa, Jan Slezá ek, Jakub Trýb, Sébastien Lán, Bo Stloukal	KZ	2	0P+2C+8B	L	Z
TV-2	Physical Education	Z	1		L	Z

Characteristics of the courses of this group of Study Plan: Code=2S-BP-TET-20/21 Name=2nd Sem. Bachelor Full-Time TET from 2020/21

11CAL2	Calculus 2	Z,ZK	5
Linear differential equat	ions and their systems, differential calculus of functions of several real variables. Riemann integral in Rn. Line and surface in	tegrals.	

11STAT	Statistics	Z,ZK	4
Basics of probability De	scriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Parar	netric tests Nonpa	rametric tests
Regression and correla	tion analysis		
12ZTS	Railway Lines and Stations	Z,ZK	4
Rail transport. Railway	rack geometry parameters. Route layout of railway lines. Railway line construction - railway substructure and superstructure	Spatial layout of r	ailway lines.
Railway control systems	s in relation to infrastructure. Operating and carriage points. Railway lines net and category. Traction in rail transport.		
18SAT	Structural Analysis	Z,ZK	4
General system of force	s in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determin	ate beams and sin	nple girders.
Principle of virtual work.	Kinematic method for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction	ons. Cross-section	al characteristics
of planar shapes. Fiber	polygons and chains.		
20SYSA	Systems Analysis	Z,ZK	5
Introduction to system s	ciences, system viewpoint, terminology, typical system analysis tasks, system identification, system interface and interface to	asks, processes, s	stem behaviour
and its analysis, strong	functions and processes, genetic code, system identity, system architecture. Tools for system analysis - Petri nets, decision	tables, algorithms	or structural
tasks. Soft and hard sys	stems, methods for soft system analysis.		
14PRG	Programming	KZ	2
The Course Programmi	ng builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python prog	ramming language	is expanded
here so that the particip	ant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and s	earching, tuples, se	ets, dictionaries,
working with date and t	me, regular expressions, functions and procedures, working with files (CSV, JSON, XML).		
17TEDL	Transport Technology and Logistics	KZ	3
Basic terms in transpor	technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and freight	transport, organisa	ation of traffic in
each transport modus,	technologic factors of the side of operator and client, organisation of city transport, logistic technologies and their aplication	using various trans	port modus.
21ZALD	Basics of Air Transport	KZ	2
History, definitions, term	inology, basic rules.VFR/IFR. Basics of aerodynamics. Propulsion of aircraft. Aircraft design. Basics of navigation, radio naviga	tion. Weight, baland	e, performance.
Flight planning, optimiza	ation of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic management, :	ground handling, s	ecurity. Air crew.
Airlines and economics	Space technologies.		
TV-2	Physical Education	Z	1

Code of the group: 3S-BP-TET-24/25

Name of the group: 3rd Sem. Bachelor Full-Time TET from 2024/25

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

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

Credits in the group: 30

Note on the grou	up.					
Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11FYZ	Physics Old ich Hykš, Jana Kuklová, Pavel Demo, Zuzana Malá, Tomáš Vít Jana Kuklová Pavel Demo (Gar.)	Z,ZK	5	2P+2C+18B	Z	Z
12MDE	Transport Models and Transport Excesses Josef Kocourek, Tomáš Pad lek	Z,ZK	3	2P+1C+8B	Z	Z
11TGA	Graph Theory and its Applications in Transport Denisa Mocková, Dušan Teichmann Denisa Mocková Denisa Mocková (Gar.)	Z,ZK	4	2P+2C+12B	Z	Z
18PZP	Elasticity and Strength Jitka ezní ková, Daniel Kytý, Jan Vy ichl, Tomáš Doktor, Jan Šleichrt, Josef Jíra, Ond ej Jiroušek Ond ej Jiroušek Ond ej Jiroušek (Gar.)	Z,ZK	3	2P+1C+10B	Z	Z
20UITS	Introduction to Intelligent Transport Systems Ji í R ži ka, Patrik Horaž ovský, Kristýna Navrátilová, Viktor Beneš, Eva Haj iarová, Martin Langr, Vladimír Faltus, Pavel Hrubeš Martin Langr	Z,ZK	7	3P+2C+20B	Z	Z
12PPOK	Designing Roads, Highways and Motorways Josef Kocourek, Tomáš Pad lek, Polina Zayats, Petr Kumpošt Josef Kocourek (Gar.)	KZ	3	1P+2C+10B	Z	Z
14DATS	Database Systems Jana Kaliková, Jan Kr ál Jana Kaliková Jana Kaliková (Gar.)	KZ	2	1P+1C+10B	Z	Z
15JZ1A	Foreign Language - English 1 Eva Rezlerová, Markéta Vojanová, Dana Boušová, Marie Michlová, Marek Tome ek, Jan Feit, Markéta Musilová, Peter Morpuss, Lenka Monková,	Z	3	0P+4C+10B	Z	Z

Characteristics of the courses of this group of Study Plan: Code=3S-BP-TET-24/25 Name=3rd Sem. Bachelor Full-Time TET from 2024/25					
11FYZ	Physics	Z,ZK	5		
Kinematics, dynamics,	Newton's laws, force fields, mechanics of continuum, thermodynamics, introduction to electrostatics and electric current.				
12MDE	Transport Models and Transport Excesses	Z,ZK	3		
Parameters of the traffic	c flow and methods for their measurement. Models of the traffic flow, communications load, line and urban systems. Theory of	f queues, shock v	aves. Quality of		
transport and its assess	sment. Statistical characteristics of transport. Transport excesses, their analysis, the causes, identify and minimize the consec	quences. Improvir	g of transport		
safety and fluency.					
11TGA	Graph Theory and its Applications in Transport	Z,ZK	4		
Basic terms of graph th	eory, paths in graphs, flows in networks, location problems, design problems on graphs, optimum routing, use of graphs in oth	ner scientific disci	plines.		
18PZP	Elasticity and Strength	Z,ZK	3		
Tension and compression. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolted and welded joints of structures.					
Analysis of deflection curve of beams. Torsion of circular cross sections. Combined loading. Stability.					

20UITS	Introduction to Intelligent Transport Systems	Z,ZK	7				
Terminology and legislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamentals of information and telecommunication							
systems for ITS. Princip	les and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real examp	oles of possible ap	oplications of the				
principles of ITS.							
12PPOK	Designing Roads, Highways and Motorways	KZ	3				
Definition, types, owner	ship, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standa	ard speed. Route	in rural areas.				
Range of vision for stop	ping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. S	afety device. Cros	ssings, junctions,				
intersections.							
14DATS	Database Systems	KZ	2				
Basic concepts of datab	ase systems, conceptual model, relational data model, the principles of normal forms, relational database design, security a	nd integrity of dat	a, database				
queries, relational algeb	ra, SQL language, client / server, multilayer architectures, distributed database systems. Access to data via the WWW.						
15JZ1A	Foreign Language - English 1	Z	3				
Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and communicative skills. Elementary							
stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles of rhetoric.							
	10.77.177.00/00						

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

Name of the group: 4th Sem. Bachelor Full-Time TET-LED from 2022/23 Requirement credits in the group: In this group you have to gain 26 credits

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

Credits in the group: 26 Note on the group:

Note on the grou	۲۰					
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
11EMO	Electromagnetic Field and Optics Old ich Hykš, Jana Kuklová, Zuzana Malá, Tomáš Vít Zuzana Malá Pavel Demo (Gar.)	Z,ZK	4	2P+1C	L	Z
21LEIS	Aerodromes Ladislav Capoušek, Petr Líka , Slobodan Stoji Ladislav Capoušek Slobodan Stoji (Gar.)	Z,ZK	3	2P+1C	L	Z
21RELP	Air Traffic Control Miloš Strouhal, Terézia Pilmannová Miloš Strouhal Miloš Strouhal (Gar.)	Z,ZK	4	3P+1C	L	Z
21ZT	ATM Systems Stanislav Pleninger Stanislav Pleninger (Gar.)	ZK	2	2P+0C	Z,L	Z
21ZYT1	Principles of Flight 1 Jakub Trýb, P emysl Vávra P emysl Vávra Vladimír Socha (Gar.)	Z,ZK	3	2P+1C	L	Z
16LLA1	Aircraft 1 Vladimír Plos, Michal erný, Karel Mündel, Daniel Urban, Karel Hylmar Vladimír Plos (Gar.)	KZ	3	2P+1C	L	Z
21RIBZ	Aviation Safety Natalia Guskova, Libor Kurzweil, Libor Kurzweil, Libor Kurzweil Andrej Lališ	KZ	2	2P+0C	L	Z
14PGP	Program Resources Michal Je ábek, Vít Fábera Michal Je ábek Vít Fábera (Gar.)	Z	2	0P+2C	L	Z
21SBL1	Bachelor Thesis Seminar 1 Vladimír Socha, Lenka Hanáková Lenka Hanáková (Gar.)	Z	1	1P+0C	L	Z
15JL2A	Foreign language - English 2 (for LED) Eva Rezlerová, Markéta Vojanová, Marie Michlová, Marek Tome ek, Jan Feit, Markéta Musilová, Peter Morpuss, Lenka Monková, Jitka He manová,	KZ	2	0P+2C	L	Z

Characteristics of the courses of this group of Study Plan: Code=4S-BP-LED-22/23 Name=4th Sem. Bachelor Full-Time TET-LED from 2022/23

11EMO	Electromagnetic Field and Optics	Z,ZK	4
Electric field. Electric	current. Magnetic field. Electromagnetic field. Optics. Basics of solid-state physics.	<u> </u>	
21LEIS	Aerodromes	Z,ZK	3
Basic definitions. Ap	olicability. Airport design. Reference code. Declared distances of runways (RWY). Taxiways and aprons. Clearway. Stopway. Mai	rkings of movement	areas.
Markings. Signs. Ma	kers. Visual aids for denoting obstacles. Obstacle restriction, removal. Visual aids for navigation, lights, approach lighting system	ns. Visual approach	slope indicator
systems. Runway lig	hts. Taxiway lights. Visual aids for denoting obstacles.		
21RELP	Air Traffic Control	Z,ZK	4
21ZT	ATM Systems	ZK	2
	es classical and modern facilities, systems and technologies designated for ATS. Student obtains knowledge of technical princip gation and surveillance aviation systems are concerned.	les and solutions a	s far as
21ZYT1	Principles of Flight 1	Z,ZK	3
Aerodynamic drag, r	elation between drag and speed, streamline, boundary layer, formula of continuity, formula of Bernoulli, lift and drag, air flow an	d pressures around	wing, angle of
attack, reactions of v	ring 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, indu	ıced drag, interferer	nce, devices for
lift and drag increase	4.		
16LLA1	Aircraft 1	KZ	3
Aircraft structural and	d conceptual design types - definitions and basic knowledge of the problem. Development of requirements, aircraft definitions ar	nd categorisation. A	ircraft loadings
Systems of primary	and secondary airframe structure. Airframe and propulsion unit. Lectures are devoted to aeroplane topics.		

21RIBZ	Aviation Safety	KZ	2		
The course contains topics related to the safety management and structure of the SMS. This includes a description of the SMS mechanisms and tools, used to ensure the safe operations					
During the course, stude	ents are continuously working on the semestral assignment, which helps them to understand practical application of the SMS	3 .			
14PGP	Program Resources	Z	2		
Students will be reminde	ed of some aspects of Pythom programming, learn basic concepts and constructs from object-oriented programming and the	ir implementation	in Python. They		
will also try out the basic	es of working with data libraries in Python, namely NumPy, Pandas, Matplotlib, and practice with examples of smaller and lar	ger data sizes.			
21SBL1	Bachelor Thesis Seminar 1	Z	1		
Types of thesis (review,	applied research, basic research, thesis dealing with design proposals). Working with citation sources (citation sources, citati	on databases, cita	ation styles, how		
to cite). Analyzing the state of the art (standards of research writing). Defining the limitations of the state of the art. Introduction to the thesis methodology.					
15JL2A	Foreign language - English 2 (for LED)	KZ	2		
Grammar and technical vocabulary. Selection of conversation topics and professional topics based on students' level and their focus at Faculty of Transportation Sciences. Development					
of perceptive and communication skills, ability to give feedback, summarization of a technical text, presentation structure, technical style and its usage, language of management					

Code of the group: 5S-BP-LED-24/25

Name of the group: 5th Sem. Bachelor Full-Time TET-LED from 2024/25 Requirement credits in the group: In this group you have to gain 26 credits

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

Credits in the group: 26 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
16LLA2	Aircraft 2 Jan Slezá ek, Karel Mündel, Daniel Urban, Karel Hylmar	Z,ZK	2	2P+1C	Z	Z
21LGCE	Air Navigation Radoslav Zozu ák Radoslav Zozu ák	Z,ZK	3	2P+0C	Z	Z
21LGVP	Legislation and Operational Regulations Radoslav Zozu ák Radoslav Zozu ák	ZK	4	3P+0C	Z	Z
21ZYT2	Principles of Flight 2 Jakub Trýb, P emysl Vávra Jakub Trýb	Z,ZK	3	2P+1C	Z	Z
22SELN	Air Accident Investigation Karel Mündel, Michal Frydrýn Michal Frydrýn Karel Mündel (Gar.)	ZK	2	2P+0C	Z	Z
14ZDAL	Data processing in air transport Martin Šrotý Martin Šrotý Martin Šrotý (Gar.)	KZ	2	0P+2C	Z	Z
21MEOL	Meteorology Iveta Kameníková Iveta Kameníková	KZ	3	2P+1C	Z	Z
21SYLP	Airport Security Lukáš Popek Lukáš Popek Andrej Lališ (Gar.)	KZ	2	2P+0C	Z	Z
21LGL1	Aviation English 1 Jitka He manová Jitka He manová	Z	2	0P+2C	Z	Z
21SBL2	Bachelor Thesis Seminar 2 Vladimír Socha, Lenka Hanáková, Marta Urbanová Marta Urbanová	Z	1	1P+0C	Z	Z
15JL3A	Foreign language - English 3 (for LED) Eva Rezlerová, Markéta Vojanová, Dana Boušová, Marie Michlová, Marek Tome ek, Jan Feit, Markéta Musilová, Peter Morpuss, Lenka Monková,	KZ	2	0P+2C	Z	Z

Characteristics of the courses of this group of Study Plan: Code=5S-BP-LED-24/25 Name=5th Sem. Bachelor Full-Time TET-LED from

2024/25			
16LLA2	Aircraft 2	Z,ZK	2
Manufacturers responsi	bility, responsibilities of operator and professional supervising. Legislation in area of airworthiness. International and national s	standards. Static so	olidity of aircraft
structures. Aeroelasticit	/. Inherent and operational reliability of aircraft structure. Fatigue strength. Aircraft structure lifetime presumption.		
21LGCE	Air Navigation	Z,ZK	3
Earth - its shape, paran	eters and properties. Aeronautical charts and their use. Measuring time. Dead reckoning. Radionavigation aids. Global navig	ation satellite syste	ems. Air traffic
services routes and the	r design.		
21LGVP	Legislation and Operational Regulations	ZK	4
Introduction into aviation	n regulations. The scope of international and national organizations in civil aviation. Analysis and interpretation of the ICAO $\stackrel{.}{A}$	nnexes 1-19, ICAC) Docs. 4444,
7030, 8168. Introduction	to the European Parliament and Council Regulation (EC), Commission Regulation (EU) and the Decisions of the Executive	Director of EASA.	
21ZYT2	Principles of Flight 2	Z,ZK	3
Static & amp; dynamic lo	ingitudinal stability, neutral point, location of centre of gravity, static directional & lateral stability, dynamic directional &an	np; lateral stability,	control pitch
(longitudinal), yaw (dire	ctional) & roll (lateral), roll/yaw interaction, trimming, speed of sound, Mach number, compressibility, shock waves, critica	I Mach number, ae	rodynamic
heating, operating limita	tions, manoeuvring envelope, gust-load diagram.		
22SELN	Air Accident Investigation	ZK	2
Introduction and legislat	ion (ICAO, EU, Czechia) related to air accident investigation. Obligations arising from legislative requirements for individual Sta	tes in the event of a	an air accident,
investigation process. A	ir accident site (inspector's equipment, site security, personal protection, initial activities at the site, sketch, evidence, etc.). Ai	rcraft and crew doo	cumentation.
Final report (formalities	substantive content, contribution).		
14ZDAL	Data processing in air transport	KZ	2
Introduction to data prod	sessing and analysis tools. Practical part of the training - introduction to the working environment, applied examples of data pr	ocessing from prac	tice, advanced

methods of presentation of the results. Seminar papers on open data. Consultation hours for seminar papers. Seminar paper submission and presentation.

21MEOL	Meteorology	KZ	3
Structure of atmosphere	e. Vertical stratification. Pressures QNH, QFE, QFF, QME. Instability. Atmospherical fronts. Atmospherical rainfall, origin fissic	n. Turbulence. Po	wers causing
wind. Cyclone and antic	cyclone. Gradient wind. Geostrofical and geocyklostrofical wind. Visibilities in air transport. Dangerous meteorological aspects.	Meteorological ma	aps. Climatology.
Circulation. Intertropica	l front. Meteorological informations.		
21SYLP	Airport Security	KZ	2
Definition of aviation se	curity and unlawful acts against the civil aviation. Description of threats, risks, causes and goals of Security. Overview of nation	onal and internation	onal regulations
and their relevance to a	irport security. Security control devices. Operational efficiency factors and related variables. Basic use of queueing theory an	d optimization tas	ks.
21LGL1	Aviation English 1	Z	2
Familiarity with the term	inology used in civil aviation in the general context and emphasizing the ability to receive information only in English.		
21SBL2	Bachelor Thesis Seminar 2	Z	1
Methodology of thesis v	viriting (introduction, analysis of the current state, specification of the problem, objectives and hypotheses). Definition of mate	rials and methods	s, approach to
obtaining results, prese	ntation and discussion of results, formulation of thesis conclusions. Basics of LaTeX, working with LaTeX and Word template		
15JL3A	Foreign language - English 3 (for LED)	KZ	2
Grammar and technical	vocabulary. Selection of conversation topics and professional topics based on students' level and their focus at Faculty of Tran	sportation Scienc	es. Development
of perceptive and comn	nunication skills, ability to give feedback, summarization of a technical text, presentation structure, technical style and its usage	ge, language of m	anagement.

Code of the group: 6S-BP-LED-23/24

Name of the group: 6th Sem. Bachelor Full-Time TET-LED from 2023/24 Requirement credits in the group: In this group you have to gain 24 credits

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

Credits in the group: 24

Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11MSP	Modeling of Systems and Processes Bohumil Ková, Lucie Kárná Bohumil Ková Bohumil Ková (Gar.)	Z,ZK	4	2P+2C+12B	L	Z
21EMIL	Air Transport Economy Eva Endrizalová Peter Vittek Peter Vittek (Gar.)	Z,ZK	5	3P+1C	L	Z
21LMR1	Aircraft Engines 1 Daniel Hanus Daniel Hanus (Gar.)	ZK	3	2P+0C	L	Z
21LVYO	Human Performance and Limitations Lenka Hanáková, Boris Oniš enko Vladimír Socha (Gar.)	ZK	3	2P+0C	L	Z
21PAP	Flight Planning and Performance Ladislav Capoušek Ladislav Capoušek Anna Polánecká (Gar.)	Z,ZK	4	2P+2C+14B	L	Z
21LGL2	Aviation English 2 Jitka He manová	KZ	2	0P+2C	L	Z
21SBL3	Bachelor Thesis Seminar 3 Lenka Hanáková Lenka Hanáková (Gar.)	Z	1	1P+0C	L	Z
15JL4A	Foreign language - English 4 (for LED) Eva Rezlerová, Markéta Vojanová, Marie Michlová, Marek Tome ek, Jan Feit, Markéta Musilová, Peter Morpuss, Lenka Monková, Jitka He manová,	ZK	2	0P+2C	L	Z

Characteristics of 2023/24	f the courses of this group of Study Plan: Code=6S-BP-LED-23/24 Name=6th Sem. Bachelo	r Full-Time TE	ET-LED from
11MSP	Modeling of Systems and Processes	Z.ZK	4
System and subsysten	, external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of di	fferential and differ	ential equations.
Linear and nonlinear s	ystem, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer function	n. Stability of LTI s	ystems.
Discretization of contin	uous systems. System interconnection.		
21EMIL	Air Transport Economy	Z,ZK	5
The course focuses or	the fundamentals of economics, providing students with an understanding of accounting principles and role of financial state	ments. In the seco	nd part, the
course builds on the g	eneral knowledge acquired and applies it to the environment of air transport economics. The basic principle is the Holloway m	odel, which structu	ıres knowledge
about demand, price a	nd yield on the one hand, and supply, costs and expenses on the other.		
21LMR1	Aircraft Engines 1	ZK	3
Aircraft piston engine,	theoretical background, operational characteristics and construction schemes. Propellers, operational characterictics. Turbine	engine, theoretica	l background,
thermal cycles, constr	uction schemes, operational characteristics. Turbojet and turbofan engines, basic construction modules, and their operational	characteristics. En	gine control.
21LVYO	Human Performance and Limitations	ZK	3
Human performace &a	imp; limitations, aptibility & competence, accident statistics, flight safety, basics of flight physiology, man & environm	ent, breathing &an	np; circulation,
sensory system, healt	n & hygiene, health preservation, intoxication, incapacitation, basics of flight psychology, human information processing,	memory & lea	arning, theory
& model of huma	n error, body rhythms & sleep, stress, fatigue, working methods.		
21PAP	Flight Planning and Performance	Z,ZK	4
Mass and balance. Loa	d of aircraft. Determination of centre of gravity - loadsheet, trimsheet. Aircraft weighing. Overloading of aircraft. Basic characteris	tic speeds. Runway	/ characteristics.
Take off and landing p	erformance. Drift down. ETOPS. MEL. Flight planning and monitoring. Routing. FL and speeds selection. Charts. ICAO ATC FF	L. Aerodrom opera	ation minimums.
Fuel plan. Operational	flight plan.		
21LGL2	Aviation English 2	KZ	2
Terminology in the sph	ere of aircraft construction, principles of flight, aircraft engines, instruments and systems.		
21SBL3	Bachelor Thesis Seminar 3	Z	1
Formal and graphic de	ı sign of the thesis. Data collection and presentation, basic statistical reasoning, validation of results and designs. Achieving th	e objectives of the	thesis and
	is tests. Preparation of the presentation, principles of presentation of the thesis.	=	

Foreign language - English 4 (for LED) 15JL4A

Grammar and technical vocabulary. Selection of conversation topics and professional topics based on students' level and their focus at Faculty of Transportation Sciences. Development of perceptive and communication skills, ability to give feedback, summarization of a technical text, presentation structure, technical style and its usage, language of management.

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

The role of the block: ZP

Code of the group: X1-BP-LED-22/23

Name of the group: Research Groups Bachelor Full-Time TET-LED from 2022/23

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

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

Credits in the group: 6

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
16X31L	Project 1 LED	Z	2	0P+1C	L	ZP
15X31L	Project 1 LED	Z	2	0P+1C	L	ZP
14X31L	Project 1 LED Tomáš Brandejský, Vít Fábera, Jana Kaliková, Jan Kr ál, Mária Jánešová	Z	2	0P+1C	L	ZP
12X31L	Project 1 LED	Z	2	0P+1C	L	ZP
11X31L	Project 1 LED Michal Matowicki Michal Matowicki Michal Matowicki (Gar.)	Z	2	0P+1C	L	ZP
23X31L	Project 1 LED	Z	2	0P+1C	L	ZP
18X31L	Project 1 LED	Z	2	0P+1C	L	ZP
20X31L	Project 1 LED	Z	2	0P+1C	L	ZP
21X31L	Project 1 LED Jakub Hospodka, Slobodan Stoji , Terézia Pilmannová, Stanislav Pleninger, Natalia Guskova, Lenka Hanáková, Lukáš Popek, Andrej Lališ, Peter Vittek,	Z	2	0P+1C	L	ZP
22X31L	Project 1 LED	Z	2	0P+1C	L	ZP
17X31L	Project 1 LED	Z	2	0P+1C	L	ZP
16X32L	Project 2 LED	Z	2	0P+1C	Z	ZP
15X32L	Project 2 LED	Z	2	0P+1C	Z	ZP
14X32L	Project 2 LED Tomáš Brandejský, Vít Fábera, Jana Kaliková, Jan Kr ál, Mária Jánešová	Z	2	0P+1C	Z	ZP
12X32L	Project 2 LED	Z	2	0P+1C	Z	ZP
11X32L	Project 2 LED Magdalena Hykšová, Michal Matowicki, Jana Kuklová Jana Kuklová Michal Matowicki (Gar.)	Z	2	0P+1C	Z	ZP
17X32L	Project 2 LED	Z	2	0P+1C	Z	ZP
23X32L	Project 2 LED	Z	2	0P+1C	Z	ZP
22X32L	Project 2 LED Michal Frydrýn, Zden k Svatý	Z	2	0P+1C	Z	ZP
21X32L	Project 2 LED Jakub Hospodka, Ladislav Capoušek, Slobodan Stoji , Terézia Pilmannová, Stanislav Pleninger, Vladimír Socha, Natalia Guskova, Lenka Hanáková, Iveta Kameníková,	Z	2	0P+1C	Z	ZP
20X32L	Project 2 LED	Z	2	0P+1C	Z	ZP
18X32L	Project 2 LED	Z	2	0P+1C	Z	ZP
11X33L	Project 3 LED Magdalena Hykšová, Michal Matowicki, Jana Kuklová Jana Kuklová Michal Matowicki (Gar.)	Z	2	0P+3C	L	ZP
12X33L	Project 3 LED	Z	2	0P+3C	L	ZP
14X33L	Project 3 LED	Z	2	0P+3C	L	ZP
15X33L	Project 3 LED	Z	2	0P+3C	L	ZP
16X33L	Project 3 LED	Z	2	0P+3C	L	ZP
23X33L	Project 3 LED	Z	2	0P+3C	L	ZP
21X33L	Project 3 LED Jakub Hospodka, Tomáš Tlu ho, Sébastien Lán, Ladislav Capoušek, Slobodan Stoji, Terézia Pilmannová, Stanislav Pleninger, Michal erný, Natalia Guskova,	Z	2	0P+3C	L	ZP

20X33L	Project 3 LED	Z	2	0P+3C	L	ZP
18X33L	Project 3 LED Nela Kr má ová	Z	2	0P+3C	L	ZP
17X33L	Project 3 LED	Z	2	0P+3C	L	ZP
22X33L	Project 3 LED Michal Frydrýn, Zden k Svatý	Z	2	0P+3C	L	ZP

Characteristics of the courses of this group of Study Plan: Code=X1-BP-LED-22/23 Name=Research Groups Bachelor Full-Time TET-LED from 2022/23

IIOIII ZUZZIZU	•		
16X31L	Project 1 LED	Z	2
15X31L	Project 1 LED	Z	2
14X31L	Project 1 LED	Z	2
12X31L	Project 1 LED	Z	2
11X31L	Project 1 LED	Z	2
23X31L	Project 1 LED	Z	2
18X31L	Project 1 LED	Z	2
20X31L	Project 1 LED	Z	2
21X31L	Project 1 LED	Z	2
22X31L	Project 1 LED	Z	2
17X31L	Project 1 LED	Z	2
16X32L	Project 2 LED	Z	2
15X32L	Project 2 LED	Z	2
14X32L	Project 2 LED	Z	2
12X32L	Project 2 LED	Z	2
11X32L	Project 2 LED	Z	2
17X32L	Project 2 LED	Z	2
23X32L	Project 2 LED	Z	2
22X32L	Project 2 LED	Z	2
21X32L	Project 2 LED	Z	2
20X32L	Project 2 LED	Z	2
18X32L	Project 2 LED	Z	2
11X33L	Project 3 LED	Z	2
12X33L	Project 3 LED	Z	2
14X33L	Project 3 LED	Z	2
15X33L	Project 3 LED	Z	2
16X33L	Project 3 LED	Z	2
23X33L	Project 3 LED	Z	2
21X33L	Project 3 LED	Z	2
20X33L	Project 3 LED	Z	2
18X33L	Project 3 LED	Z	2
17X33L	Project 3 LED	Z	2
22X33L	Project 3 LED	Z	2

Name of the block: Compulsory elective courses

Minimal number of credits of the block: 6

The role of the block: PV

Code of the group: Y1-BP-LED-24/25

Name of the group: Comp. Sel. Courses Bachelor Full-Time TET-LED from 2024/25

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
21Y1AM	Aeronautical Information Management (AIM)	KZ	2	2P+0C	Z	PV
00Y1XB	Active participation in a scientific project, workshop, short-term trip abroad Patrik Horaž ovský Patrik Horaž ovský (Gar.)	KZ	2	2P+0C		PV
20Y1AF	Alternative Forms of Transportation Project Financing Mária Jánešová Mária Jánešová	KZ	2	2P+0C	Z	PV

18Y1AM	Anatomy, Mobility and Safety of Man	KZ	2	2P+0C	Z	PV
14Y1AV	Animation and Visualization	KZ	2	2P+0C	L	PV
12Y1AE	Applied Ecology Martin Jacura, Kristýna Neubergová	KZ	2	2P+0C	Z	PV
20Y1AE	Applied Electronics	KZ	2	2P+0C	Z	PV
14Y1BE	Barrierless Transport Jan Kr ál	KZ	2	2P+0C	L	PV
15Y1BO	Work Safety and Health Protection in Transportation	KZ	2	2P+0C	L	PV
11Y1BK	Petr Musil Error Detection Codes for Interlocking Systems	KZ	2	2P+0C	Z	PV
21Y1BS	Lucie Kárná Lucie Kárná Lucie Kárná (Gar.) Unmanned aircraft systems 1	KZ	2	2P+0C		PV
14Y1BM	Tomáš Tlu ho , Michal erný, Jakub Kraus Biometric Methods	KZ	2	2P+0C	Z	PV
15Y1DZ	History of Railway	KZ	2	2P+0C	L	PV
12Y1DS	Eva Rezlerová, Martin Jacura Project Documentation in Practice	KZ	2	2P+0C	Z	PV
17Y1FV	Public Sector Economy	KZ	2	2P+0C	Z	PV
23Y1EH	Electronics and hardware in security of transportation	KZ	2	2P+0C	L	PV
20Y1EK	Qualification in Electrical Engineering	KZ	2	2P+0C	L	PV
16Y1EN	Energy Requirements of Vehicles	KZ	2	2P+0C	L	PV
20Y1EA	Environmental Aspects of Transport	KZ	2	2P+0C	Z	PV
	European Integration within Historical Context		-	+		
15Y1EH	Jan Feit	KZ	2	2P+0C	Z	PV
18Y1EM	Experimental Methods in Mechanics Daniel Kytý Daniel Kytý (Gar.)	KZ	2	2P+0C	Z	PV
15Y1FD	French Area Studies and Transportation	KZ	2	2P+0C	L	PV
14Y1HW	Computer Hardware	KZ	2	2P+0C	L	PV
15Y1HL	History of Civil Aviation Vladimír Plos	KZ	2	2P+0C	L	PV
15Y1HD	History of City Mass Transport Milan Dont	KZ	2	2P+0C	Z	PV
12Y1HD	Traffic Noise Dagmar Ko árková, Libor Ládyš	KZ	2	2P+0C	L	PV
15Y1HE	Work Hygiene and Ergonomics in Traffic Petr Musil	KZ	2	2P+0C	Z	PV
16Y1IS	Interactive simulators and simulations	KZ	2	2P+0C	L	PV
12Y1KN	Combined Transportation Petr Nejedlý	KZ	2	2P+0C	Z	PV
12Y1KP	Communication and Promotion of Transport Projects Dagmar Ko árková, Ond ej Kubala	KZ	2	2P+0C	L	PV
20Y1KP	Communication and presentation skills Ji í R ži ka, Patrik Horaž ovský, Kristýna Navrátilová, Eva Haj iarová Ji í R ži ka	KZ	2	2P+0C	Z	PV
23Y1KM	Crisis Management	KZ	2	2P+0C	Z	PV
23Y1KO	Quantum Physics and Optoelectronics	KZ	2	2P+0C	L	PV
23Y1KY	Cybernality	KZ	2	2P+0C	L	PV
23Y1KB	Cyber security in transportation	KZ	2	2P+0C	L	PV
21Y1LJ	Aeronautical Radio and Flight Instruments	KZ	2	2P+0C	L	PV
21Y1LS	Air Traffic Services	KZ	2	2P+0C	L	PV
17Y1LL	Logistics of Passenger and Freight Air Transport Petra Skolilová Petra Skolilová (Gar.)	KZ	2	2P+0C	L	PV
20Y1LN	Location and Navigation Petr Bureš	KZ	2	2P+0C	L	PV
23Y1MK	Crisis Situation Management in Critical Infrastructure	KZ	2	2P+0C	L	PV
23Y1MU	Emergency Events Management Solution in Transport Infrastructure	KZ	2	2P+0C	Z	PV
17Y1MD	Marketing in Transportation	KZ	2	2P+0C	Z	PV
18Y1MT	Engineering Materials Jaroslav Valach Jaroslav Valach (Gar.)	KZ	2	2P+0C	L	PV
21Y1MP	Matlab for project-oriented study	KZ	2	2P+0C	Z	PV
14Y1MP	Vladimír Socha, Lenka Hanáková Vladimír Socha Modeling Complex Assemblies and Models in Parametric	KZ	2	2P+0C	Z	PV
15Y1MK	Modeller Modern History in Context: Every Day Life and Transport	KZ	2	2P+0C		PV
	Marie Michlová	114		2. 100	_	' '

15Y1NE	German in the Economy and Society	KZ	2	2P+0C	Z	PV
21Y1OH	Airline Business and Operations Peter Olexa, Eva Endrizalová Peter Olexa	KZ	2	2P+0C	Z	PV
23Y1OK	Protection of Critical Objects and Infrastructures	KZ	2	2P+0C	L	PV
20Y1OI	Fare Collection and Information Systems Patrik Horaž ovský, Milan Sliacky Milan Sliacky (Gar.)	KZ	2	2P+0C	L	PV
14Y1OJ	Object - oriented programming in JAVA	KZ	2	2P+0C	L	PV
14Y1OP	Operating System	KZ	2	2P+0C	Z	PV
17Y1OF	Personal Finance	KZ	2	2P+0C	Z	PV
20Y1OK	Road Lighting František Kekula	KZ	2	2P+0C	L	PV
11Y1PV	Parametrical and Multicriterial Programming Olga Vraštilová Olga Vraštilová (Gar.)	KZ	2	2P+0C	Z	PV
17Y1PM	Personnel Management	KZ	2	2P+0C	L	PV
12Y1PC	Pedestrian and Cycling Transport Denis Liutov	KZ	2	2P+0C	L	PV
14Y1PG	Computer Graphics	KZ	2	2P+0C	L	PV
14Y1P2	Computer Aid of Transportation Projecting 2	KZ	2	2P+0C	Z	PV
18Y1PS	Computer Simulations in Mechanics Petr Zlámal Petr Zlámal (Gar.)	KZ	2	2P+0C	L	PV
14Y1PI	Corporate Information System	KZ	2	2P+0C	Z	PV
14Y1PZ	Advanced Data Processing in Spreadsheets	KZ	2	2P+0C	Z	PV
21Y1PC	ATC Procedures and Activities Terézia Plimannová Terézia Pilmannová	KZ	2	2P+0C	Z	PV
12Y1PD	Assessment of Transport Structures	KZ	2	2P+0C	Z	PV
20Y1PK	Product Quality Management Processes Martin Leso Martin Leso	KZ	2	2P+0C	Z	PV
14Y1PJ	C Programming Language	KZ	2	2P+0C	Z	PV
12Y1C1	Designing Roads in Civil 3D I	KZ	2	2P+0C	L	PV
12Y1C2	Designing Roads in Civil 3D II Tomáš Honc	KZ	2	2P+0C	Z	PV
14Y1PA	3D Modeling in AutoCAD	KZ	2	2P+0C	Z	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
12Y1RU	Railway Lines Reconstruction	KZ	2	2P+0C	Z	PV
16Y1RE	Control and Electronic Vehicle Systems Josef Mík, P emysl Toman	KZ	2	2P+0C	Z	PV
21Y1RZ	Human Resources Management	KZ	2	2P+0C	L	PV
17Y1ST	Titan Simulation	KZ	2	2P+0C	L	PV
21Y1SI	ATC Simulator Terézia Pilmannová	KZ	2	2P+0C	L	PV
20Y1SC	Sensors and Actuators	KZ	2	2P+0C	L	PV
17Y1SL	Sociology of Human Resources	KZ	2	2P+0C	Z	PV
11Y1SI	Transportation Software Engineering	KZ	2	2P+0C	Z	PV
16Y1KS	Quality and Reliability of Vehicles Jan Leistner, Filip Kotas, Jaroslav Machan, David Lehet	KZ	2	2P+0C	Z	PV
12Y1SU	Road Management and Maintenance Dagmar Ko árková, Otakar Vacín	KZ	2	2P+0C	L	PV
16Y1SO	Strategy and innovation in mobility	KZ	2	2P+0C	Z	PV
17Y1SK	Urban and Regional Rail Transport Systems Ji í Pospíšil Ji í Pospíšil (Gar.)	KZ	2	2P+0C	L	PV
11Y1TG	Graph Theory Lucie Kárná Lucie Kárná (Gar.)	KZ	2	2P+0C	L	PV
23Y1TP	Criminal Law in IT and Transportation	KZ	2	2P+0C	Z	PV
14Y1TI	Creating Interactive Internet Applications	KZ	2	2P+0C	L	PV
21Y1UL	Aircraft Maintenance Tomáš T ma	KZ	2	2P+0C	L	PV
14Y1UP	Editing of Theses in MS Word	KZ	2	2P+0C	L	PV
18Y1UK	Introduction of Rail Vehicles Jitka ezní ková, Josef Kolá , Josef Kolá Josef Kolá (Gar.)	KZ	2	2P+0C	L	PV
12Y1VR	Public Transport in Cities and Regions Vladimír Pušman	KZ	2	2P+0C	Z	PV
23Y1VS	Negotiation and Cooperation	KZ	2	2P+0C	Z	PV

14Y1VM	Development of Applications for Mobile Devices	KZ	2	2P+0C	Z	PV
16Y1VT	Development in Railroad Vehicles	KZ	2	2P+0C	L	PV
14Y1WG	Webdesign	KZ	2	2P+0C	Z	PV
14Y1W1	Webdesign 1	KZ	2	2P+0C	Z	PV
14Y1W2	Webdesign 2	KZ	2	2P+0C	L	PV
16Y1ZG	Introduction into Applied Computer Graphics	KZ	2	2P+0C	L	PV
14Y1ZM	Fundamentals of parametric and adaptive modeling	KZ	2	2P+0C	L	PV
11Y1ZM	Foundation of MATLAB Programming Šárka Vorá ová Šárka Vorá ová Sárka Vorá ová (Gar.)	KZ	2	2P+0C	L	PV
14Y1ZJ	Fundamentals of programming in JAVA	KZ	2	2P+0C	Z	PV
12Y1ZU	Principles of Urbanism Karel Hájek	KZ	2	2P+0C	Z	PV
15Y1ZV	East-West dichotomy: Prelude to the Cold War Marie Michlová	KZ	2	2P+0C	Z	PV
16Y1ZL	Vehicle Testing, Legislation and Construction Zuzana Radová, Josef Mík	KZ	2	2P+0C	Z	PV

Characteristics of the courses of this group of Study Plan: Code=Y1-BP-LED-24/25 Name=Comp. Sel. Courses Bachelor Full-Time TET-LED from 2024/25

21Y1AM	Aeronautical Information Management (AIM)	l KZ	2
	Aeronautical Information Management (AIM) Verview of AIS and AIM. Transition from AIS to AIM. Regulatory base. Provision of AIS/AIM in the Czech Rep. AIP (Aeronauti		_
	cerview of Als and Aim. Transition from Als to Aim. Regulatory base. Provision of Als/Aim in the Czech Rep. AiP (Aeronauti C System. NOTAM messages.PIB (Pre-flight Informtion Bulletin). AIC (Aeoronautical Inf. Circulars). Aeronautical Charts. EAD		
	. ADQ (Aeronautical Data Quality). AIXM (Aeronautical Inf. Exchnage Format).	(Europena Alo Da	labase). Qivis
		1/7	0
00Y1XB	Active participation in a scientific project, workshop, short-term trip abroad	KZ	2
20Y1AF	Alternative Forms of Transportation Project Financing	KZ	2
•	h forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt		_
	a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of	of securities as an al	ternative source
·	elecomunication projects.		
18Y1AM	Anatomy, Mobility and Safety of Man	KZ	2
•	tomical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circul		-
	nuscular-skeletal system. Injury of human organs and musculo-skeletal system during traffic accidents. Mobility of ill and inju	ured man and his tre	eatment. Huma
	ctive means and traffic safety regulations.		
14Y1AV	Animation and Visualization	KZ	2
Advanced modification	ns and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems an	nd Space Warp objec	cts. Atmospher
and other effects, rend	dering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animat	tion using Inverse Ki	inematics.
12Y1AE	Applied Ecology	KZ	2
General ecology - eco	logical concepts and principles, ecosystem, ecological factors, energy flow through the ecosystem. Application of knowledge	e within EIA docume	ntation. Specia
ecology. Landscape e	cology - origin and historical development. Landscape definition and classification. Success. Traffic constructions in the coun	tryside. Landscape	and nature
protection. Applied ec	ology.		
20Y1AE	Applied Electronics	KZ	2
-	conductor components, their principles, characteristics and typical connection diagrams. Semiconductor PN junction diodes,	1	
	gates. Functions of basic electronic circuits and methods for their designs (rectifiers, voltage regulator with Zener diode, tran		
	5		. ,
amplifier as an invertir	ng and noninverting amplifier).		
	ng and noninverting amplifier). Barrierless Transport	K7	2
14Y1BE	Barrierless Transport	KZ	2 etical knowledo
14Y1BE The issue of barrierles	Barrierless Transport s accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Stud	dents will gain theore	etical knowledg
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14Y1BE The issue of barrierles of barrierless environn Theoretical knowledge 15Y1BO Fundamental legislative health insurance of health insurance of the 11Y1BK Safe communication approbability of undetect 21Y1BS	Barrierless Transport s accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Studient roads, railway stations, public transport stops, terminal buildings, vehicles, public transport, information and orientation systematic will be supplemented by practical examples. Work Safety and Health Protection in Transportation we, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation we and foreign business trips, statistics, working practice. Error Detection Codes for Interlocking Systems and methods for its assuring. Safety codes linear codes, cyclic codes, BCH codes, Reed-Solomon codes. Transmission channeled error. Design and assessment of detection codes; requirements of the European standard EN 50159. Unmanned aircraft systems 1	dents will gain theorestems and transportation. Health protection KZ els, detection of transportation KZ	etical knowledg ation technolog 2 n programmes, 2 asmission error
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14Y1BE The issue of barrierles of barrierless environn Theoretical knowledge 15Y1BO Fundamental legislative health insurance of hor 11Y1BK Safe communication approbability of undetect 21Y1BS Unmanned Aviation Deprocedures. Practical 14Y1BM Basic biometric terms retina recognition metrin transport application 15Y1DZ Horse-drawn railways, war II railways, railways	Barrierless Transport s accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Studient roads, railway stations, public transport stops, terminal buildings, vehicles, public transport, information and orientation system will be supplemented by practical examples. Work Safety and Health Protection in Transportation We, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation and foreign business trips, statistics, working practice. Error Detection Codes for Interlocking Systems Ind methods for its assuring. Safety codes linear codes, cyclic codes, BCH codes, Reed-Solomon codes. Transmission channel error. Design and assessment of detection codes; requirements of the European standard EN 50159. Unmanned aircraft systems 1 Evelopment. Aircraft design. Legislation in force in the Czech Republic. Planning and execution of the flight. Airspace division flights. Biometric Methods authentication methods, principles and performance measurement of biometric systems, overview of biometric technologies and 3D face recognition, vein patterns on the wrist, ear biometrics, fingerprint recognition, skin spectroscopy, behaving, safety and risks of biometric technologies. History of Railway steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First forms of the supplies o	kZ n. Operational risks a KZ s, hand geometry, ir ioral methods, the u KZ Republic", electric tr	etical knowledge ation technology 2 m programmes. 2 msmission error 2 mand operational 2 mission error 2 mand operational 2 mission error 2 mand operational 2 mission error 2 mission err
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14Y1BE The issue of barrierles of barrierless environn Theoretical knowledge 15Y1BO Fundamental legislative health insurance of hor 11Y1BK Safe communication aprobability of undetect 21Y1BS Unmanned Aviation Deprocedures. Practical 14Y1BM Basic biometric terms retina recognition met in transport application 15Y1DZ Horse-drawn railways war Il railways, railway railway accidents, railway accidents, railway 12Y1DS Project documentation creation of some project	Barrierless Transport s accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Studient roads, railway stations, public transport stops, terminal buildings, vehicles, public transport, information and orientation system will be supplemented by practical examples. Work Safety and Health Protection in Transportation re, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation me and foreign business trips, statistics, working practice. Error Detection Codes for Interlocking Systems and methods for its assuring. Safety codes linear codes, cyclic codes, BCH codes, Reed-Solomon codes. Transmission channeled error. Design and assessment of detection codes; requirements of the European standard EN 50159. Unmanned aircraft systems 1 evelopment. Aircraft design. Legislation in force in the Czech Republic. Planning and execution of the flight. Airspace division flights. Biometric Methods authentication methods, principles and performance measurement of biometric systems, overview of biometric technologies and, 2D and 3D face recognition, vein patterns on the wrist, ear biometrics, fingerprint recognition, skin spectroscopy, behaves, safety and risks of biometric technologies. History of Railway steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First of development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train corvay junctions. Excursions and projections. Project Documentation in Practice a creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process documentation parts.	dents will gain theorestems and transporterstems and transporterstems and transporterstems and transporterstems and transporterstems. HzZ els, detection of transporters and transporters are transporters and transporters are transporters. HzZ ess. Budget and priestems and transporters are transporters are transporters.	etical knowledge ation technology ation technology ation technology at a programmes 2 and operationa 2 action, World nes construction 2 cing. Practical
14Y1BE The issue of barrierles of barrierless environn Theoretical knowledge 15Y1BO Fundamental legislative health insurance of hor 11Y1BK Safe communication aprobability of undetect 21Y1BS Unmanned Aviation Deprocedures. Practical 14Y1BM Basic biometric terms retina recognition met in transport application 15Y1DZ Horse-drawn railways War II railways, railway railway accidents, railway acci	Barrierless Transport s accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Studient roads, railway stations, public transport stops, terminal buildings, vehicles, public transport, information and orientation system will be supplemented by practical examples. Work Safety and Health Protection in Transportation re, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation re and foreign business trips, statistics, working practice. Error Detection Codes for Interlocking Systems and methods for its assuring. Safety codes linear codes, cyclic codes, BCH codes, Reed-Solomon codes. Transmission channeled error. Design and assessment of detection codes; requirements of the European standard EN 50159. Unmanned aircraft systems 1 evelopment. Aircraft design. Legislation in force in the Czech Republic. Planning and execution of the flight. Airspace division flights. Biometric Methods authentication methods, principles and performance measurement of biometric systems, overview of biometric technologies hod, 2D and 3D face recognition, vein patterns on the wrist, ear biometrics, fingerprint recognition, skin spectroscopy, behave, as asfety and risks of biometric technologies. History of Railway steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First for development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train core way junctions. Excursions and projections. Project Documentation in Practice creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining processing the public project documentation types. Support materials for project documentation creating. Building permit obtaining processing the public properties and project documentation types. Support materials for project documentation	dents will gain theorestems and transporterstems and transporterstems and transporterstems and transporterstems and transporterstems and transporterstems. HzZ els, detection of transporterstems, and geometry, in iterational methods, the understanding transporterstems and transporterstems. HzZ electric transporterstems, railway limited transporterstems. HzZ electric transporterstems, railway limited transporterstems. HzZ electric transporterstems and transporterstems and transporterstems and transporterstems and transporterstems.	etical knowledge ation technology ation technology 2 m programmes. 2 m programmes construction 2 m programmes construction 2 m programmes construction 2 m programmes 2 m

23Y1EH	Electronics and hardware in security of transportation	KZ	2
''	of signals. Passive circuits, properties, basic measurements. Passive filters, semiconductors. Operational amplifiers, basic circuits	-	
'' -	ircuits. AD converters. Connection of analog and digital parts. Basic blocks of digital signal processing. Measurement processin	ng. Design and fabi	rication methods
in electronics.	Overlitte after the Electrical Electrical and	1/7	
20Y1EK	Qualification in Electrical Engineering th measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock haza	KZ	2
	in measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock haza ved currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legis		•
_	I safety and electrical engineering.	idion, standards c	and regulations
16Y1EN	Energy Requirements of Vehicles	KZ	2
	ng inertial of the vehicles. Types of energy - kinetic, static, heat, chemical and others. Ways of energy change into kinetic ene		
drive, steam engine, air	engine. Energy accumulation means, accumulator, flywheel, fuel cell. Energy recuperation. WTW analysis.		
20Y1EA	Environmental Aspects of Transport	KZ	2
· ·	e, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabil		
	nts and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transp		
15Y1EH	European Integration within Historical Context	KZ	2
· ·	ation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism		
l - '	er's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war an German relationship - a driving power of starting European integration.	a its consequence	es for Europe.
18Y1EM	Experimental Methods in Mechanics	KZ	2
!	f experimental methods in mechanical testing. Overview of experimental methods. Destructive and non-destruct	1 1	
' '	es and sample preparation. Tensile and bending tests. Electrical resistance strain gages. Optical based strain measurement.	=	
Instrumented hardness	testing. Introduction to electron microscopy. Errors in measurement.		
15Y1FD	French Area Studies and Transportation	KZ	2
	d regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air tr		erminology.
	ure. Current political system. System of education, studying in France. Selected authors of French literature. French gastronc	_	
14Y1HW	Computer Hardware	KZ	2
	basics of logical circuits design and their realization using FPGA. In detail, description of computer architecture and separate	e parts designing -	- controllers,
arithmetic and logical u			
15Y1HL	History of Civil Aviation	KZ	2
	velopment of aircrafts lighter than air. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development aviators. Helicopters. CSA airplanes. Development of aircrafts in Czechoslovakia between the years 1945-1989. Classic era	-	
· ·	civil aviation. Airline companies. Supersonic flying.	or aviation. Goide	in era or civii
15Y1HD	History of City Mass Transport	KZ	2
_	nsport in the world, development of tram, bus and trolley-bus systems. History of transport networks in the world, current trer		
	tory of city transport in Prague and Brno. History of tram, bus and trolley-bus operation systems in the Czech Republic and S	•	
12Y1HD	Traffic Noise	KZ	2
Acoustic introduction, b	iasic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regula	tions. Creation acc	oustic climate in
l : :	n acoustic, noise transmission, soundproofing. Types of noise sources in area. Determination of acoustic situation in the area	a of interest. Metho	odology of
	ement of transport noise. Acoustic studies, measuring protocol.	T	
15Y1HE	Work Hygiene and Ergonomics in Traffic	KZ	2
	cupational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of these participations and the participation of technology.		
	i of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technology to the field of transportation; relevant legislature.	.o possibilities and	i skilis oi a man.
16Y1IS	Interactive simulators and simulations	KZ	2
l	priceractive simulators and simulations application of computing models. Mechanical and dynamic systems and their mathematical n	1	
· ·	namics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulations.		, mounodo.
12Y1KN	Combined Transportation	KZ	2
	ategy and legislation. Load units. Means of transport in combined transport. Combined transport systems. Transshipping area	1	'
12Y1KP	Communication and Promotion of Transport Projects	KZ	2
Fundamentals of Public	Relations and the power of public opinion. Work and tasks of PR department and press spokesperson. Communication with	the media, the pu	ublic on social
	Communication strategy of transport projects. Systematic goodwill building. Crisis situations in communication and preparation	on for crisis commu	unication. The
	rketing and political PR on transport projects. Lobbing.		
20Y1KP	Communication and presentation skills	KZ	2
· ·	d their fulfillment, current communication networks, work with various sources, formal requirements of emails and final these		
	telligence, manipulation and way of working with it, coping with stressful situations, formal requirements of presentations, wa	ys of communicati	ion during
· · · · · · · · · · · · · · · · · · ·	ion skills, presentation skills in online environment.	V7	2
23Y1KM	Crisis Management of crisis management with direction to Rescue system (IZS). After introduction to safety domain, there are terms and knowled	KZ	position of crisis
	rgets; IZS-crisis management-crisis planning; and basic legislation. Practical part is concentrated to responsibility matrix com	-	position of crisis
23Y1KO	Quantum Physics and Optoelectronics	KZ	2
	/sics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics components.	112	_
23Y1KY	Cybernality	KZ	2
		1 1	
23Y1KB	avior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism	 Infoware and cor 	medied aspedis.
_	avior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism Cyber security in transportation	n. Infoware and cor KZ	2
Basic concepts of secu		KZ	2
· ·	Cyber security in transportation	KZ cyberspace, social	2
· ·	Cyber security in transportation rity and cyber security, virtual cyberspace and communities, taxonomy of crimes in	KZ cyberspace, social	2
engineering, cyber atta 21Y1LJ Basic definitions, histor	Cyber security in transportation rity and cyber security, legal status in the field of cyber security, virtual cyberspace and communities, taxonomy of crimes in ck technology, information security, cyber attacks on telematics systems, security of systems with artificial intelligence, normal Aeronautical Radio and Flight Instruments y of aircraft instrumentation, aerometric instrumentation, Earth magnetism, aircraft electric equipment, gyroscopic instrumentation	KZ cyberspace, social s and standards. KZ ation, airframe inst	2 I impacts, social 2 rumentation and
engineering, cyber atta 21Y1LJ Basic definitions, histor other aircraft equipmen	Cyber security in transportation rity and cyber security, legal status in the field of cyber security, virtual cyberspace and communities, taxonomy of crimes in ck technology, information security, cyber attacks on telematics systems, security of systems with artificial intelligence, normal Aeronautical Radio and Flight Instruments y of aircraft instrumentation, aerometric instrumentation, Earth magnetism, aircraft electric equipment, gyroscopic instrumentat, engine instrumentation, warning and recording systems, instrumentation operational requirements, radiocommunication are	KZ cyberspace, social s and standards. KZ ation, airframe inst nd radionavigation.	2 I impacts, social 2 rumentation and
engineering, cyber atta 21Y1LJ Basic definitions, histor other aircraft equipmen 21Y1LS	Cyber security in transportation rity and cyber security, legal status in the field of cyber security, virtual cyberspace and communities, taxonomy of crimes in ck technology, information security, cyber attacks on telematics systems, security of systems with artificial intelligence, normal Aeronautical Radio and Flight Instruments y of aircraft instrumentation, aerometric instrumentation, Earth magnetism, aircraft electric equipment, gyroscopic instrumentat, engine instrumentation, warning and recording systems, instrumentation operational requirements, radiocommunication are Air Traffic Services	KZ cyberspace, social s and standards. KZ ation, airframe inst nd radionavigation. KZ	2 I impacts, social 2 rumentation and .
engineering, cyber atta 21Y1LJ Basic definitions, histor other aircraft equipmen 21Y1LS Airspace structure in Co	Cyber security in transportation rity and cyber security, legal status in the field of cyber security, virtual cyberspace and communities, taxonomy of crimes in ck technology, information security, cyber attacks on telematics systems, security of systems with artificial intelligence, normal Aeronautical Radio and Flight Instruments y of aircraft instrumentation, aerometric instrumentation, Earth magnetism, aircraft electric equipment, gyroscopic instrumentat, engine instrumentation, warning and recording systems, instrumentation operational requirements, radiocommunication are	KZ cyberspace, social s and standards. KZ ation, airframe inst nd radionavigation. KZ	2 I impacts, social 2 rumentation and .

17Y1LL	Logistics of Passenger and Freight Air Transport	KZ	2
	ger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial to	ansport process	passengers and
	ystems in air transport. Global distribution systems.		
20Y1LN	Location and Navigation	KZ	2
	les of road networks, localization on the network. Routing algorithms, their properties and implementation. Description and ex	amples of datase	ts for finding
23Y1MK	routing algorithms, their properties and implementation.	KZ	2
	Crisis Situation Management in Critical Infrastructure Infrastructute elements on all levels, their protection systems, responsibilities of particular agencies of the state administration		
	anounce particular safety provisions. Physical and cyber protection of critical infrastructure with special attention to the soft ta	_	verninent, and
23Y1MU	Emergency Events Management Solution in Transport Infrastructure	KZ	2
	gency events with emphasis of the transport infrastructure events and their solution management. Knowledge in the emergency		
in liquidation work with	n the transport infrastructure.		
17Y1MD	Marketing in Transportation	KZ	2
General principles of m	arketing applied to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transport	t and the resultin	g differences in
the application of mark	-		
18Y1MT	Engineering Materials	KZ	2
-	main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers a		attention is paid
	and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's selection		
21Y1MP	Matlab for project-oriented study	KZ	2
	s focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exercis used on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improvem		
14Y1MP	Modeling Complex Assemblies and Models in Parametric Modeller	KZ	2
!	ng - tools and methodology of working subassemblies and assemblies, sheet metal parts modelling, welded assemblies, pipe		
	ndering - physical and material properties, lighting sources. MKP - visual example.		
15Y1MK	Modern History in Context: Every Day Life and Transport	KZ	2
Historical overview of r	nodern history of every day life, science, technology and transport in a wider context.	'	
15Y1NE	German in the Economy and Society	KZ	2
Recent economic and	social issues of German speaking countries and of the EU. Reading and listening of texts. Lexical, grammatical and semantic	analysis of texts.	Discussion on
selected topics.			
21Y1OH	Airline Business and Operations	KZ	2
1	comprehensive view of the commercial, operational and transportation activities of air transport companies. It focuses on the organical companies are companied to the commercial companies and transportation activities of air transport companies.		
I	strategy, economic and operational indicators. It introduces students in detail to operational processes and the essentials of tra	nsportation proce	sses. It provides
	nomic aspects of air transport.	1/7	
23Y1OK	Protection of Critical Objects and Infrastructures systems, critical item, risks and their courses, criticality, vulnerability, connectivity, dependability, resilience, failure, protection, s	KZ	iects and critical
infrastructures.	systems, united herr, risks and their courses, unitedity, validationly, confidentity, adjusted their field and their courses, uniteditor, s	aloty of critical of	jeets and entical
20Y1OI	Fare Collection and Information Systems	KZ	2
	in public transport and their components (on-board units, validators, turnstiles,). Information systems and their component		
panels) and operato	rs (cycles, location or current delay of vehicles,). The issue of tariff systems. Other examples of clearance systems (parking).	·
14Y1OJ	Object - oriented programming in JAVA	KZ	2
Objective thinking. Enc	apsulation. Classes. Attributes. Access modifiers. Methods and overloading. Special methods (constructors, getters / setters)	Basic object met	hods. Reference
data types. Inheritance	Polymorphism. Statics, constants, interfaces, abstract classes, enum, packages, exceptions, collections, generics, lambda ex	pressions, anony	mous functions.
14Y1OP	Operating System	KZ	2
	n GNU/Linux OS. X-window system. Rights management - users and groups, ACL rights. Filesystems and attributes. Program		
	e programs / commands. Config files. SW management, package systems. Programs in graphic shell - text, spreadsheet, grapes management. Safe and secure configuration of OS. Remote administration.	onic editors, soun	d, video and
		V7	2
17Y10F Personal finance (budd	Personal Finance et, financing of basic living needs), debt (loans and credits, payment instruments, interest and fees, debt trap), financing of ho	KZ ousing (rent. mort	
, ,	ncing), savings and investments (investment horizon, return, risk, investment strategy), insurance (insurance types, suitability a	• .	
(retirement savings and		. ,,,	Ü
20Y1OK	Road Lighting	KZ	2
Basic lighting quantities	and terms, street lighting components (luminaires, control cabinets for street lighting, street lighting cables), characteristics of luminaires, control cabinets for street lighting.	ıminaires (lifetime	of light sources,
, ,	ards, measurement of illuminance and luminance in road lighting, tunnels, conceptual approach to street lighting design, light	ing calculations in	n DIALux and
Relux, street lighting or			
11Y1PV	Parametrical and Multicriterial Programming	KZ	2
-	of linear programming with a parameter in objective function, on right sides and in the matrix of coeficients of linear constraints	. Computation of 6	
17Y1PM Human sources, work	Personnel Management	レフ	· ')
12Y1PC	Personnel Management	KZ tural communicati	2
	proup, man as personality, planning, choice, evaluation and education of human sources, work adaptation, teamwork, intercul	tural communicat	on.
_	group, man as personality, planning, choice, evaluation and education of human sources, work adaptation, teamwork, intercul Pedestrian and Cycling Transport	tural communicat	on. 2
Routes for pedestrians	proup, man as personality, planning, choice, evaluation and education of human sources, work adaptation, teamwork, intercul	tural communicati KZ oute layout and de	on. 2 sign parameters
Routes for pedestrians for cyclists. Separation	roup, man as personality, planning, choice, evaluation and education of human sources, work adaptation, teamwork, intercul Pedestrian and Cycling Transport Pedestrian crossings. Modifications for blind, dim-sighted and disabled people. Design of cycle routes network. Ways of cycle routes	tural communicati KZ oute layout and de	on. 2 sign parameters
Routes for pedestrians for cyclists. Separation	proup, man as personality, planning, choice, evaluation and education of human sources, work adaptation, teamwork, intercul- Pedestrian and Cycling Transport Pedestrian crossings. Modifications for blind, dim-sighted and disabled people. Design of cycle routes network. Ways of cycle ro of cyclists from other transport modes. Cycle tracks and its design - one way streets, reserved traffic lanes, bus stops, crossing.	tural communicati KZ oute layout and de	on. 2 sign parameters
Routes for pedestrians for cyclists. Separation crossroads. Traffic sign 14Y1PG	proup, man as personality, planning, choice, evaluation and education of human sources, work adaptation, teamwork, intercul Pedestrian and Cycling Transport Pedestrian crossings. Modifications for blind, dim-sighted and disabled people. Design of cycle routes network. Ways of cycle routes from other transport modes. Cycle tracks and its design - one way streets, reserved traffic lanes, bus stops, crossings and road marking for cyclists.	tural communicat KZ bute layout and de gs with other tran KZ	2 sign parameters asport modes,
Routes for pedestrians for cyclists. Separation crossroads. Traffic sign 14Y1PG Basic formats of graph level scope) using laye	Pedestrian and Cycling Transport Pedestrian and Cycling Transport Pedestrian crossings. Modifications for blind, dim-sighted and disabled people. Design of cycle routes network. Ways of cycle ro f cyclists from other transport modes. Cycle tracks and its design - one way streets, reserved traffic lanes, bus stops, crossing and road marking for cyclists. Computer Graphics c and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with edits, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics cards.	tural communicat KZ bute layout and de gs with other tran KZ iting programs (w	sign parameters asport modes, 2 ithin the user
Routes for pedestrians for cyclists. Separation crossroads. Traffic sign 14Y1PG Basic formats of graph level scope) using laye 14Y1P2	Pedestrian and Cycling Transport Pedestrian and Cycling Transport Pedestrian crossings. Modifications for blind, dim-sighted and disabled people. Design of cycle routes network. Ways of cycle ro of cyclists from other transport modes. Cycle tracks and its design - one way streets, reserved traffic lanes, bus stops, crossing and road marking for cyclists. Computer Graphics and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with edits, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics cards. Computer Aid of Transportation Projecting 2	tural communicat KZ bute layout and de gs with other tran KZ iting programs (w	sign parameters asport modes, 2 ithin the user
Routes for pedestrians for cyclists. Separation crossroads. Traffic sign 14Y1PG Basic formats of graph level scope) using laye 14Y1P2 Overview of CAx applic	Pedestrian and Cycling Transport Pedestrian and Cycling Transport Pedestrian crossings. Modifications for blind, dim-sighted and disabled people. Design of cycle routes network. Ways of cycle ro of cyclists from other transport modes. Cycle tracks and its design - one way streets, reserved traffic lanes, bus stops, crossing and road marking for cyclists. Computer Graphics Cand possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with edits, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics cards. Computer Aid of Transportation Projecting 2 ation for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting,	tural communicat KZ bute layout and de gs with other tran KZ iting programs (w KZ data exchange).	sign parameters asport modes, 2 ithin the user 2 Advanced blocks
Routes for pedestrians for cyclists. Separation crossroads. Traffic sign 14Y1PG Basic formats of graph level scope) using laye 14Y1P2 Overview of CAx applic	Pedestrian and Cycling Transport Pedestrian and Cycling Transport Pedestrian crossings. Modifications for blind, dim-sighted and disabled people. Design of cycle routes network. Ways of cycle routes from other transport modes. Cycle tracks and its design - one way streets, reserved traffic lanes, bus stops, crossing and road marking for cyclists. Computer Graphics Cand possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with edits, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics cards. Computer Aid of Transportation Projecting 2 ation for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic trans	tural communicat KZ bute layout and de gs with other tran KZ iting programs (w KZ data exchange).	sign parameters asport modes, 2 ithin the user 2 Advanced blocks

18Y1PS	Computer Simulations in Mechanics	KZ	2
•	of tools for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model develop	="	
· · · · · · · · · · · · · · · · · · ·	 Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary conditions modal analysis. Introduction to complex nonlinear problems. 	and application o	Tine load. Basic
14Y1PI	Corporate Information System	KZ	2
	edge, components of information system, syntatic and semantic sense of data, structure of corporate information system, pa	rticular information	n system
	on, storage, etc.), corporate information politic and information control, risks of information system operation, legal environment	nt of information sy	stem operation,
	n, information system security, data protection, safety politics.	1/7	
14Y1PZ	Advanced Data Processing in Spreadsheets with principles of working in a spreadsheet. Graphic layout of the table appearance, formatting of numbers, insertion of form	KZ	2
	with principles of working in a spreadsheet. Graphic layout of the table appearance, formatting of numbers, insertion of formattin ion. Working with large spreadsheets, filters, advanced filters, database functions. Pivot tables and charts, conditional formattin		
•	s and questions from various companies and training.	9,	,,
21Y1PC	ATC Procedures and Activities	KZ	2
	dures, basics of communication and phraseology, aircraft identification, spacing and traffic coordination. In addition, the cours		affic control at
	ibility operational procedures. Students will during the course learn basic safety management applications applied across the		
12Y1PD	Assessment of Transport Structures t structures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibilitie	KZ	2
· · · · · · · · · · · · · · · · · · ·	the landscape. Rating fragmentation and landscape connectivity in the preparation of linear structures. Practical examples of	=	
the environment.	and tallacouper talling magnitudes and tallacoupe commonly in the proparation of modification in action of actions of the control of the cont		o zananigo on
20Y1PK	Product Quality Management Processes	KZ	2
General principles of or	ganization management. Management systems and international standards; quality management systems. Quality products,	processes, syster	ns. A framework
	s management, management principles. Principles of process management, monitoring and measurement systems management	nt. Uniform framew	ork of standards
	nt. Process management principles. Metrology and testing. Product certification.	1/7	
14Y1PJ	C Programming Language ge. Preprocessor, basics of the C language (data types, syntax, commands), functions, pointes, dynamical memory allocation,	KZ	2 tres and unions
	tract data types (FIFO, LIFO, list), programming techniques (sorting, searching, recursion), using bitwise oprerators.	string, mes, structi	ares and unions.
12Y1C1	Designing Roads in Civil 3D I	KZ	2
The course is devoted t	o the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go throu	gh the complete c	lesign of this
	g, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The	ne course also inc	ludes a basic
	building design in the real-life profession.	1/7	
12Y1C2	Designing Roads in Civil 3D II o the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go throu	KZ	2
	g, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. Th	-	-
	d. Students learn to design intersections.	., , , , , , , , , , , , , , , , , , , , , , , , , , , , , , , , , , , , , , , , , , , , , , , ,	
14Y1PA	3D Modeling in AutoCAD	KZ	2
	etric modeller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup creation, obje	ct data creation, w	ork with data
	database. Basic definition of work with lights, materials and reflexes. Models presentation.	1/7	
16Y1PV	Operation, Construction and Maintenance of Vehicles duction. Vehicle maintenance. Vehicle diagnostics. Maintenence and repair plans. Engine maintenance and emission measure	KZ	2 on machanism
General principles of er		ment. nansmissi	on mechanism.
12Y1PU	Organization Disposition of Railway Stations	KZ	2
Connecting station. Pas	senger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zo	ne stations. Form	ation yards.
	ology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic railway r	etwork.	
12Y1RU	Railway Lines Reconstruction	KZ	2
	erational, maintaining lines and stations, geometrical alignment of railway line, vehicles for railway superstructure and substruons, preparation of railway lines reconstruction and maintenance, process of ralway line reconstruction.	acture maintenanc	e, scheduling
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		
and hybrid drive control	. Electric drive. Vehicle communication bus (CAN, LIN, FlexRay, ISObus, KWP2000 protocole etc.). Vehicle electronic control,	, safety, communic	cation and
comfort systems.			
21Y1RZ	Human Resources Management	KZ	2
•	resources in the organization and related disciplines file. Substance, importance and challenges of human resources manage resource management. Human resource planning. Search, recruitment and selection of employees. Motivation, evaluation and		
	esource management. Human resource planning, Search, reclutinent and selection of employees, Motivation, evaluation and ncies of employees. Education of employees. Planning career management.	remuneration of s	stan. Fositioning,
17Y1ST	Titan Simulation	KZ	2
	game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same produ		
determine the quantity	and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequer	nces of their decis	ions by the form
	ports and they use this information for other business decisions.		
21Y1SI	ATC Simulator	KZ	2 Dragtical
	simulation environment, acquiring basic habits, aircraft identification procedures, vectoring, level changes, ATC clearance, us asic vectoring, early application of vertical separation, EST and REV message passing. Practical exercises in the APPROAC	· ·	
-		rraroa, praotioning	arrivar arra
departure management	procedures, conflict resolution.		
20Y1SC	Sensors and Actuators	KZ	2
20Y1SC Principles of sensors an	Sensors and Actuators d actuators. Basics of measuring theory and actuating influence. The respective technologies and construction principles. Sensor		
20Y1SC Principles of sensors an state (temperature, hun	Sensors and Actuators d actuators. Basics of measuring theory and actuating influence. The respective technologies and construction principles. Sensor inditity), chemical and particle flow values. Electrical, pneumatic and hydraulic actuators and solid phase elements.	rs of mechanical, e	electro-magnetic,
20Y1SC Principles of sensors an state (temperature, hun 17Y1SL	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. Sociology of Human Resources	rs of mechanical, e	electro-magnetic,
20Y1SC Principles of sensors an state (temperature, hun 17Y1SL Human resources and t	Sensors and Actuators d actuators. Basics of measuring theory and actuating influence. The respective technologies and construction principles. Sensor inditity), chemical and particle flow values. Electrical, pneumatic and hydraulic actuators and solid phase elements.	rs of mechanical, e	electro-magnetic,
20Y1SC Principles of sensors an state (temperature, hun 17Y1SL Human resources and t of the organization.	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. Sociology of Human Resources heir importance, work group as a special kind of social group, communication, personal management, modern management, in the contraction of the contractio	rs of mechanical, e	electro-magnetic, 2 Dlanning, culture
20Y1SC Principles of sensors an state (temperature, hun 17Y1SL Human resources and to f the organization. 11Y1SI	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. Sociology of Human Resources	KZ KZ Numan resources p	2 Dlanning, culture

· · · · · · · · · · · · · · · · · · ·	uality and Reliability of Vehicles	KZ	2
	r in design, development, production and operation of vehicles. Definition and possible approach to quality and reliability.		
	, QFD (Quality Function Deployment), DFx (Design for Assamly, Manufacturying, Quality, Services) and other methods of quality and reliability, data collection.	used in industria	l applications.
	pad Management and Maintenance	KZ	2
	thip of roads in the Czech Republic and the administration of the road at the state and county level. It is presented develop	1	
	egy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and rep		
classroom as well as investi	ment activity in highway engineering.		
	rategy and innovation in mobility	KZ	2
	lefinition. Innovation strategy. Innovation life cycle and ecosystem, main sources and funding opportunities. Successful inr		_
	rint method and its use. Innovative business model - main patterns and examples, design, strategy, processes and outloc ion strategy. Customer and value map, design and testing.	ok (business plan	and possibilities
	ban and Regional Rail Transport Systems	KZ	2
	demand, modal-split, distribution of passenger flows on public regional transport lines. Optimization of line management, l	1	
- ·	Vehicle circulation creation. Optimizing driver shifts and arranging them in turnus. Effects of barrier-free and public transport	_	_
marketing.			
11Y1TG Gr	raph Theory	KZ	2
•	ology of graph theory, graph representation. Problems of graph theory, problem instance. Graph search algorithms, trees,		-
	, bipartite graph matching, flow networks, circulations, critical path method, traveling salesman problem. Problem of existence	e and optimization	n and algorithms
	onal complexity, dealing with NP-complete problems, heuristic approach.	V7	2
	riminal Law in IT and Transportation into legal order, conception of culpability and criminal delict, consequency of other legal standards. international treaty an	KZ	2 vestigation of
	minal court cases, practical examples.	ia ciiiiiiai iaw, iii	vestigation of
· · · · · · · · · · · · · · · · · · ·	reating Interactive Internet Applications	KZ	2
	guage PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions.		
in PHP language.			
21Y1UL Air	rcraft Maintenance	KZ	2
Aircraft operations and techn	nical operations. Maintenance and work processes. Defects search methods, status check diagnostic tools. Selection and o	qualification of avi	ation personnel.
	aintenance. Optimization of time maintenance intervals. Regulation no. 1321/2014 Part 145. Human factors of aircraft main	ntenance. Regula	tion of director
	nce. Seminars will be focused on practical application.	1/7	
	diting of Theses in MS Word	KZ	2
	to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, created Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless		
	centrate mainly on writing a thesis.	outing alooolium	0.10 0.10 0.10000,
18Y1UK Int	troduction of Rail Vehicles	KZ	2
1011010	iroduotion of rail vonioloo	I\Z	_
	arameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion	1	· -
Basic characteristics and patrack resistance. Total running	arameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion in gresistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehicle.	train and unit trair	ns. Rolling and
Basic characteristics and pa track resistance. Total running and electric drive. Design co	arameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion of motion of gresistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehicles oncept rail vehicles and drive of wheel set.	train and unit trair e - hydromechani	ns. Rolling and c, hydrodynamic
Basic characteristics and patrack resistance. Total running and electric drive. Design contact and Patrack Pt. Pt. 12Y1VR Pt. Pt. 12Y1VR	arameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion in gresistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehicle oncept rail vehicles and drive of wheel set. ublic Transport in Cities and Regions	train and unit trair e - hydromechani KZ	ns. Rolling and c, hydrodynamic
Basic characteristics and patrack resistance. Total running and electric drive. Design contact and Patrack Possible Poss	arameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion in gresistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehicle oncept rail vehicles and drive of wheel set. Ublic Transport in Cities and Regions	train and unit trair e - hydromechani KZ nes. Principles of	ns. Rolling and c, hydrodynamic 2 line tracing.
Basic characteristics and patrack resistance. Total running and electric drive. Design of 12Y1VR Professional and political pill Basic operating parameters	arameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion in gresistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehicle concept rail vehicles and drive of wheel set. Jubic Transport in Cities and Regions Ilars of public transport. Accessibility of public transport. Transport demand management and directional coordination of lies and transport variations. Types of lines according to their routing and basic operating parameters. Time coordination of lies	train and unit trair e - hydromechani KZ nes. Principles of	ns. Rolling and c, hydrodynamic 2 line tracing.
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Basic characteristics and patrack resistance. Total running and electric drive. Design of 12Y1VR Professional and political pill Basic operating parameters Organization of tram operations of tram operations. The trust. 14Y1VM Description of negotiation, the trust. 14Y1WG Students will learn the basic webdesign, content manager of the trust of trust of the trust of	arameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion in gresistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehicle procept rail vehicles and drive of wheel set. ### Accessibility of public transport in Cities and Regions ### Coordination of lice and transport variations. Types of lines according to their routing and basic operating parameters. Time coordination of lice and transport variations. Types of lines according to their routing and basic operating parameters. Time coordination of lice ion in Prague. Tram safety. #### Coordination and Cooperation ### Cooperation and Cooperation ### Cooperation and Cooperation are sessence of negotiation, the differences in negotiation. Negotiation and commanding. Teamwork. Variants teams. Info a sessence of negotiation, the differences in negotiation in business and in crisis situations, the principle of "win both", specially a programming language, development environment, operating system Android, development application - widgets are programming language, development environment, operating system Android, development application - widgets are design and senior training and	train and unit train e - hydromechanic e - hydro	as. Rolling and c, hydrodynamic 2 line tracing. traffic control. 2 ole in the team. dding, the role of 2 ads, menu, 2 sal situation 2 cal situation 2 crinciples. 2 crinciples of 2D 2D and 3D 2 aport and export 2

14Y1ZJ	Fundamentals of programming in JAVA	KZ	2
	SE Platform. IDE Installation and First Project. Comments. Variables and Type System. Operators. User Inpu	•	
	Methods. Terms. Relational Operators and Switches. Cycles for, while, foreach. Field - declaration, initializat	tion, methods for field work. ASCII.	Functions,
parameters, return value	e, recursion. Program creation.		
12Y1ZU	Principles of Urbanism	KZ	2
	and settlement building. Functional components and their mutual relations (working, living, recreation, trans	portation). Spacial arrangement of	settlements.
Types of towns or cities	with a certain prevailing function, forms of their development. Brief overview of land-use planning.		
15Y1ZV	East-West dichotomy: Prelude to the Cold War	KZ	2
Historical prologue, evol	ution of the "West" and "East" from the 1500s. Focus on the history in the period between 1850 nad 1950. Mile	stones and continuity of the internation	ational relations
	ry and the beginning of the 20th century. Revolutions, the causes and consequences. Scientific and technology	gical progress, the causes and co	nsequences.
Economic and financial	history. Social changes. Discussions on texts, sources.		
16Y1ZL	Vehicle Testing, Legislation and Construction	KZ	2
Vehicle, bus and motorbi	ke costruction, aggregate computing, driving resistance, build and parameters of traction, constructional arrang	gement of personal cars, trucks, bus	ses, motorbikes
legislation in the EU and	I in the world, technical legislation creation, testing methods, vehicle tests, accelerated tests, mathematical n	nodelling in testing.	
	ock: Elective courses er of credits of the block: 0 block: V		
Code of the gr	oup: VP-BP-TET-20/21		
Name of the gi	oup: Bachelor Full-Time TET voluntary		
Requirement c	redits in the group:		
Requirement c	ourses in the group:		
Credits in the g	group: 0		
Note on the gre	oup:		
	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their		

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
14DPK	Digital Support for Designing of Roads and Highways Libor Žídek, Drahomír Schmidt Drahomír Schmidt Drahomír Schmidt (Gar.)	Z	0	0P+2C	Z	V
14DZT	Digital Support for Railway Lines Martin Brumovský Martin Brumovský (Gar.)	Z	0	0P+2C	L	V
11SCFZ	Seminar of Physics Old ich Hykš, Jana Kuklová, Zuzana Malá, Tomáš Vít Zuzana Malá Zuzana Malá (Gar.)	Z	0	0P+2C	Z	V
21SLD	Seminar of Air Transport Vladimír Plos, Natalia Guskova, Jakub Kraus Vladimír Plos	Z	0	0P+2C	L	V
18SPP	Seminary from Elasticity and Strength Jan Vy ichl, Tomáš Doktor Jan Vy ichl Jan Vy ichl (Gar.)	Z	0	0P+2C	Z	V
18STD	Seminary from Technical Documentation	Z	0	0P+2C	Z	V
18SS	Seminary from Structural Analysis Jan Vy ichi	Z	0	0P+2C	L	V
11SSF	Secondary School Physics Course Zuzana Malá Zuzana Malá Zuzana Malá (Gar.)	Z	0	0P+2C	L	V
TVKLV	Physical Education Course	Z	0	7dní	L	V
TVKZV	Physical Education Course	Z	0	7dní	Z	V

14DPK	Digital Support for Designing of Roads and Highways	Z	0
Seminars possibilit	ties of technical processing problems focused on designing of roads and highways.		•
14DZT	Digital Support for Railway Lines	Z	0
Seminars possibilit	ties of technical processing problems solved in the field of railway lines.	•	•
11SCFZ	Seminar of Physics	Z	0
Solving problems of	on kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermodynamics.	'	•
21SLD	Seminar of Air Transport	Z	0
History definitions	terminalary, hasis rules VED /IED Design of garadynamics Dranulaion of girarett Aircraft design Design of nevigation radio se		L _1
mistory, delimitions,	, terminology, basic rules. VFR / IFR. Basics of aerodynamics. Propulsion of aircraft. Aircraft design. Basics of navigation, radio na	avigation, vveignt,	baiance,
	, terminology, basic rules. VPR 7 IPR. basics of aerodynamics. Propulsion of aircraft. Aircraft design, basics of havigation, radio ha It planning, optimization of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic	-	
performance. Fligh		-	
performance. Fligh	t planning, optimization of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic	-	
performance. Fligh security. Air crew. A	It planning, optimization of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic Airlines and economics. Space technologies.	management, gro	und handling,
performance. Fligh security. Air crew. A 18SPP Excersise for pract	It planning, optimization of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic Airlines and economics. Space technologies. Seminary from Elasticity and Strength	management, gro	und handling,
performance. Fligh security. Air crew. A 18SPP Excersise for pract	It planning, optimization of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic Airlines and economics. Space technologies. Seminary from Elasticity and Strength ice. Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam.	management, gro	und handling,
performance. Fligh security. Air crew. A 18SPP Excersise for pract of beam. Torsion of 18STD	It planning, optimization of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic Airlines and economics. Space technologies. Seminary from Elasticity and Strength icc. Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of before cross section. Combined loading. Stability of compressed bar and buckling.	Z Deam. Analysis of	und handling, 0 deflection curve
performance. Fligh security. Air crew. A 18SPP Excersise for pract of beam. Torsion of 18STD	It planning, optimization of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic Airlines and economics. Space technologies. Seminary from Elasticity and Strength idea. Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of being circle cross section. Combined loading. Stability of compressed bar and buckling. Seminary from Technical Documentation Is, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimension	Z Deam. Analysis of	und handling, 0 deflection curve
performance. Fligh security. Air crew. A 18SPP Excersise for pract of beam. Torsion of 18STD Technical standard	It planning, optimization of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic Airlines and economics. Space technologies. Seminary from Elasticity and Strength idea. Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of being circle cross section. Combined loading. Stability of compressed bar and buckling. Seminary from Technical Documentation Is, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimension	Z Deam. Analysis of	und handling, 0 deflection curve
performance. Fligh security. Air crew. A 18SPP Excersise for pract of beam. Torsion of 18STD Technical standard arrangement of dra 18SS	It planning, optimization of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic Airlines and economics. Space technologies. Seminary from Elasticity and Strength	Z Deam. Analysis of C Z nal and geometric	und handling, 0 deflection curv 0 cal accuracy,
performance. Fligh security. Air crew. A 18SPP Excersise for pract of beam. Torsion of 18STD Technical standard arrangement of dra 18SS Examples for pract	It planning, optimization of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic Airlines and economics. Space technologies. Seminary from Elasticity and Strength	Z Deam. Analysis of Z Inal and geometric Z and simple frame	und handling, 0 deflection curv 0 cal accuracy, 0 work. Applicat

11SSF	Secondary School Physics Course	Z	0
Basics of kinematics, of	Basics of kinematics, dynamics, thermodynamics, electric field and magnetic field.		
TVKLV	Physical Education Course	Z	0
TVKZV	Physical Education Course	_	_

Code of the group: VP-BP-TET-LED

Name of the group: Bachelor Full-Time TET-LED voluntary

Requirement credits in the group: Requirement courses in the group:

Credits in the group: 0 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11SEMO	Seminar of Electromagnetic Field and Optics	Z	0	0P+2C	L	V

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

11SEMO | Seminar of Electromagnetic Field and Optics | Z | 0

Solving problems on electric and magnetic field, electromagnetic field, optics and basics of solid-state physics.

List of courses of this pass:

00)/4)/5	Name of the course	Completion	Credits
00Y1XB	Active participation in a scientific project, workshop, short-term trip abroad	KZ	2
11CAL1	Calculus 1	Z,ZK	7
Sequence of real no	mbers and its limit. Basic properties of mappings. Function of one real variable, its limit and derivative. Indefinite integral, Newton inte	gral, Riemann integi	al, improper
	Riemann integral. First-order differential equations, linear differential equations.		
11CAL2	Calculus 2	Z,ZK	5
Linea	r differential equations and their systems, differential calculus of functions of several real variables. Riemann integral in Rn. Line and	d surface integrals.	1
11EMO	Electromagnetic Field and Optics	Z,ZK	4
	Electric field. Electric current. Magnetic field. Electromagnetic field. Optics. Basics of solid-state physics.	,	ļ
11FYZ	Physics	Z,ZK	5
	Kinematics, dynamics, Newton's laws, force fields, mechanics of continuum, thermodynamics, introduction to electrostatics and ele	1 '	1
11GIE	Geometry	KZ	3
	try of curves - parameterization, the arc of the curve, torsion and curvature, Frenet's trihedron. Kinematics - a curve as a trajectory		elocity, and
Ū	acceleration of a particle moving on a curved path.		•
11LA	Linear Algebra	Z,ZK	3
	ar combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and th	,	minants and
	their applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classifica	ation.	
11MSP	Modeling of Systems and Processes	Z,ZK	4
	tem, external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of diffe		al equations.
	linear system, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer funct		
	Discretization of continuous systems. System interconnection.		
11SCFZ	Seminar of Physics		
		Z	0
	Solving problems on kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermo-		0
11SEMO		dynamics.	0
11SEMO	Seminar of Electromagnetic Field and Optics		-
	Seminar of Electromagnetic Field and Optics Solving problems on electric and magnetic field, electromagnetic field, optics and basics of solid-state physics.	dynamics.	
11SEMO 11SSF	Seminar of Electromagnetic Field and Optics	dynamics.	0
11SSF	Seminar of Electromagnetic Field and Optics Solving problems on electric and magnetic field, electromagnetic field, optics and basics of solid-state physics. Secondary School Physics Course Basics of kinematics, dynamics, thermodynamics, electric field and magnetic field.	dynamics. Z Z	0
11SSF 11STAT	Seminar of Electromagnetic Field and Optics Solving problems on electric and magnetic field, electromagnetic field, optics and basics of solid-state physics. Secondary School Physics Course Basics of kinematics, dynamics, thermodynamics, electric field and magnetic field. Statistics	dynamics. Z Z Z,ZK	0 0
11SSF 11STAT	Seminar of Electromagnetic Field and Optics Solving problems on electric and magnetic field, electromagnetic field, optics and basics of solid-state physics. Secondary School Physics Course Basics of kinematics, dynamics, thermodynamics, electric field and magnetic field.	dynamics. Z Z Z,ZK	0 0
11SSF 11STAT Basics of probabil	Seminar of Electromagnetic Field and Optics Solving problems on electric and magnetic field, electromagnetic field, optics and basics of solid-state physics. Secondary School Physics Course Basics of kinematics, dynamics, thermodynamics, electric field and magnetic field. Statistics ity Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Param Regression and correlation analysis	dynamics. Z Z Z,ZK etric tests Nonparar	0 0
11SSF 11STAT Basics of probabil	Seminar of Electromagnetic Field and Optics Solving problems on electric and magnetic field, electromagnetic field, optics and basics of solid-state physics. Secondary School Physics Course Basics of kinematics, dynamics, thermodynamics, electric field and magnetic field. Statistics ity Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Param	dynamics. Z Z,ZK etric tests Nonparar	0 0 4 netric tests 4
11SSF 11STAT Basics of probabil	Seminar of Electromagnetic Field and Optics Solving problems on electric and magnetic field, electromagnetic field, optics and basics of solid-state physics. Secondary School Physics Course Basics of kinematics, dynamics, thermodynamics, electric field and magnetic field. Statistics ity Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Param Regression and correlation analysis Graph Theory and its Applications in Transport	dynamics. Z Z,ZK etric tests Nonparar	0 0 4 netric tests 4
11SSF 11STAT Basics of probabil 11TGA Basic terms of 11X31L	Seminar of Electromagnetic Field and Optics Solving problems on electric and magnetic field, electromagnetic field, optics and basics of solid-state physics. Secondary School Physics Course Basics of kinematics, dynamics, thermodynamics, electric field and magnetic field. Statistics ity Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Param Regression and correlation analysis 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 Project 1 LED	z Z,ZK etric tests Nonparar Z,ZK other scientific disc	0 0 4 netric tests 4 iplines. 2
11SSF 11STAT Basics of probabil 11TGA Basic terms of 11X31L 11X32L	Seminar of Electromagnetic Field and Optics Solving problems on electric and magnetic field, electromagnetic field, optics and basics of solid-state physics. Secondary School Physics Course Basics of kinematics, dynamics, thermodynamics, electric field and magnetic field. Statistics ity Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Param Regression and correlation analysis 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 Project 1 LED Project 2 LED	z Z Z,ZK etric tests Nonparar Z,ZK other scientific disc	0 0 4 netric tests 4 iplines. 2 2
11SSF 11STAT Basics of probabil 11TGA Basic terms of 11X31L 11X32L 11X33L	Seminar of Electromagnetic Field and Optics Solving problems on electric and magnetic field, electromagnetic field, optics and basics of solid-state physics. Secondary School Physics Course Basics of kinematics, dynamics, thermodynamics, electric field and magnetic field. Statistics ity Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Param Regression and correlation analysis 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 Project 1 LED Project 2 LED Project 3 LED	dynamics. Z Z,ZK etric tests Nonparar Z,ZK other scientific disc Z Z Z	0 0 4 netric tests 4 iplines. 2 2 2
11SSF 11STAT Basics of probabil 11TGA Basic terms of 11X31L 11X32L 11X33L 11Y1BK	Seminar of Electromagnetic Field and Optics Solving problems on electric and magnetic field, electromagnetic field, optics and basics of solid-state physics. Secondary School Physics Course Basics of kinematics, dynamics, thermodynamics, electric field and magnetic field. Statistics ity Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Param Regression and correlation analysis 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 Project 1 LED Project 2 LED	z,ZK etric tests Nonparar Z,ZK other scientific disc Z Z KZ	0 0 4 netric tests 4 iplines. 2 2 2 2 2

11Y1PV	Parametrical and Multicriterial Programming	KZ	2
	lem of linear programming with a parameter in objective function, on right sides and in the matrix of coeficients of linear constraints. Co		
11Y1SI	Transportation Software Engineering oftware engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and implemer	KZ	2 I tochniques
basic concepts of s	and practical usuage.	nation using torma	rtechniques
11Y1TG	Graph Theory	KZ	2
'	d terminology of graph theory, graph representation. Problems of graph theory, problem instance. Graph search algorithms, trees, min		
patri problem, Eulei	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.	ind optimization and	u aigoritiiris
11Y1ZM	Foundation of MATLAB Programming	KZ	2
	iple of algorithmization, flow charts, description of MATLAB environment and its settings, MATLAB help, mathematical operators, mati	1	l
	control flow, inputs and outputs, graphics, optimization and program code debugging.		
12MDE	Transport Models and Transport Excesses	Z,ZK	3
	traffic flow and methods for their measurement. Models of the traffic flow, communications load, line and urban systems. Theory of quantities of the traffic flow and methods for their measurement.		·=
transport and its a	assessment. Statistical characteristics of transport. Transport excesses, their analysis, the causes, identify and minimize the consequences safety and fluency.	ences. Improving o	or transport
12PPOK	Designing Roads, Highways and Motorways	KZ	3
	pwnership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard	1	I
	stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet	-	
	intersections.		
12X31L	Project 1 LED	Z	2
12X32L	Project 2 LED	Z	2
12X33L	Project 3 LED	Z	2
12Y1AE	Applied Ecology	KZ	2
	ecological concepts and principles, ecosystem, ecological factors, energy flow through the ecosystem. Application of knowledge with		-
ecology. Landsc	ape ecology - origin and historical development. Landscape definition and classification. Success. Traffic constructions in the country: protection. Applied ecology.	side. Landscape ar	nd nature
12Y1C1	Designing Roads in Civil 3D I	KZ	2
	roted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through		l
	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.		
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 bi	uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The improved and developed. Students learn to design intersections.	previously acquire	d skills are
12Y1DS	Project Documentation in Practice	KZ	2
	ation creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process.	1	l
	creation of some project documentation parts.		
12Y1HD	Traffic Noise	KZ	2
	on, basic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regulation		
area, principies	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.	of interest. Method	dology of
12Y1KN	Combined Transportation	KZ	2
	ort strategy and legislation. Load units. Means of transport in combined transport. Combined transport systems. Transshipping areas	1	
12Y1KP	Communication and Promotion of Transport Projects	KZ	2
Fundamentals of	Public Relations and the power of public opinion. Work and tasks of PR department and press spokesperson. Communication with th	ne media, the publi	c on social
networks and bey	ond. Communication strategy of transport projects. Systematic goodwill building. Crisis situations in communication and preparation to	for crisis communic	cation. The
40V4DC	influence of political marketing and political PR on transport projects. Lobbing.	1/7	
12Y1PC	Pedestrian and Cycling Transport ans. Pedestrian crossings. Modifications for blind, dim-sighted and disabled people. Design of cycle routes network. Ways of cycle route	KZ	2 narameters
<u>-</u>	ation of cyclists from other transport modes. Cycle tracks and its design - one way streets, reserved traffic lanes, bus stops, crossing:	· -	-
	crossroads. Traffic signs and road marking for cyclists.		
12Y1PD	Assessment of Transport Structures	KZ	2
	sport structures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibilities of	•	
transport structures	s on the landscape. Rating fragmentation and landscape connectivity in the preparation of linear structures. Practical examples of ass	sessment of traffic	buildings on
12Y1PU	the environment.	KZ	2
	Organization Disposition of Railway Stations on. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zor	1	I
_	ve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic		o yarao.
12Y1RU	Railway Lines Reconstruction	KZ	2
Keeping railway lii	ne operational, maintaining lines and stations, geometrical alignment of railway line, vehicles for railway superstructure and substruct		scheduling
	and organising possesions, preparation of railway lines reconstruction and maintenance, process of railway line reconstruction		Т
12Y1SU	Road Management and Maintenance	KZ	2
_	rith ownership of roads in the Czech Republic and the administration of the road at the state and county level. It is presented develop erm strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and repair		
oaiam ana iong-ti	classroom as well as investment activity in highway engineering.		
12Y1VR	Public Transport in Cities and Regions	KZ	2
	political pillars of public transport. Accessibility of public transport. Transport demand management and directional coordination of lin		
Basic operating p	arameters and transport variations. Types of lines according to their routing and basic operating parameters. Time coordination of lines	es. Operational traf	fic control.
	Organization of tram operation in Prague Tram safety		

12Y1ZU	D	1.77	
	Principles of Urbanism	KZ	2
Survey on history	of city and settlement building. Functional components and their mutual relations (working, living, recreation, transportation). Spacial	arrangement of se	ettlements.
	Types of towns or cities with a certain prevailing function, forms of their development. Brief overview of land-use planning.		
12ZTS	Railway Lines and Stations	Z,ZK	4
Rail transport. Ra	ilway track geometry parameters. Route layout of railway lines. Railway line construction - railway substructure and superstructure. S	patial layout of rails	way lines.
	Railway control systems in relation to infrastructure. Operating and carriage points. Railway lines net and category. Traction in rail tr	ransport.	
12ZYDI	Introduction to Transportation Engineering	Z,ZK	2
Role of transportati	on in land-use planning. Basic terms in transportation engineering. Traffic survey and traffic prognosis. Introduction to topic of roads, pi	ublic mass transpo	rt. Negative
	impacts of transportation to environment and safety.		
14ASD	Algorithm and Data Structures	KZ	3
	e problems, design a theoretical solution to a given problem and write the resulting algorithm using flowcharts, practice reading algori		_
	ean algebra to construct constraints in algorithms. Students will be introduced to the basics of the Python programming language - va		
a.i.a acc bacic 200.	will learn to work with variables of basic data types (integer, floating point and string) and the list data structure in their program		,
14DATS	Database Systems	KZ	2
	ا i database systems, conceptual model, relational data model, the principles of normal forms, relational database design, security and		
Dasic concepts o	queries, relational algebra, SQL language, client / server, multilayer architectures, distributed database systems. Access to data via t		ualabase
44000	· · · · · · · · · · · · · · · · · · ·		
14DPK	Digital Support for Designing of Roads and Highways	Z	0
	Seminars possibilities of technical processing problems focused on designing of roads and highways.		
14DZT	Digital Support for Railway Lines	Z	0
	Seminars possibilities of technical processing problems solved in the field of railway lines.		
14KSP	Constructing with Computer Aid	KZ	2
"CAD systems" ter	n determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic common worl	k rules in graphic a	applications
	Co-ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting possib		
,	profiles, drawings with raster foundaments).	,	
14PGP	Program Resources	7	2
	inded of some aspects of Pythom programming, learn basic concepts and constructs from object-oriented programming and their in		
	y out the basics of working with data libraries in Python, namely NumPy, Pandas, Matplotlib, and practice with examples of smaller a	•	
14PRG	Programming	KZ	2
_	amming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python program		-
here so that the par	ticipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and searcl	hing, tuples, sets, o	dictionaries,
	working with date and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML).		
14X31L	Project 1 LED	Z	2
14X32L	Project 2 LED	Z	2
14X33L	Project 3 LED	Z	2
	•	KZ	
14Y1AV	Animation and Visualization		2
	ions and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and Spa		
	s, rendering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animation		
14Y1BE	Barrierless Transport	KZ	2
	ess accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students v		
of barrierless enviro	nment roads, railway stations, public transport stops, terminal buildings, vehicles, public transport, information and orientation systems		l knowledge
			l knowledge
	Theoretical knowledge will be supplemented by practical examples.		l knowledge
14Y1BM	Theoretical knowledge will be supplemented by practical examples. Biometric Methods		l knowledge
		and transportation	I knowledge technology.
Basic biometric te	Biometric Methods	and transportation KZ Ind geometry, iris re	knowledge technology. 2 ecognition,
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14Y1PI	Corporate Information System	KZ	2
Data-information	n-knowledge, components of information system, syntatic and semantic sense of data, structure of corporate information system, pa	rticular information	system
(personalistic, produ	uction, storage, etc.), corporate information politic and information control, risks of information system operation, legal environment of	information system	n operation,
	state information system, information system security, data protection, safety politics.		
14Y1PJ	C Programming Language	KZ	2
C programming lang	guage. Preprocessor, basics of the C language (data types, syntax, commands), functions, pointes, dynamical memory allocation, strir	-	and unions.
	Implementations of abstract data types (FIFO, LIFO, list), programming techniques (sorting, searching, recursion), using bitwise op		_
14Y1PZ	Advanced Data Processing in Spreadsheets	KZ	2
	familiar with principles of working in a spreadsheet. Graphic layout of the table appearance, formatting of numbers, insertion of formula to the control of		
addressing, error de	etection. Working with large spreadsheets, filters, advanced filters, database functions. Pivot tables and charts, conditional formatting, s	olution finding, solv	/er, macros,
4.43/4.T.I	data analysis. Examples and questions from various companies and training.	1/7	
14Y1TI	Creating Interactive Internet Applications ting language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions. You	KZ	2
rossibilities of scrip	in PHP language.	own application p	rogrammeu
14Y1UP	Editing of Theses in MS Word	KZ	2
	ntroduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, creat		
	ohs, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless ed		
3,, 3 -1	so that they are able to concentrate mainly on writing a thesis.	3	,
14Y1VM	Development of Applications for Mobile Devices	KZ	2
ı	programming, Java programming language, development environment, operating system Android, development application - widgets,	I	ds, menu,
	permissions, services, GUI.		
14Y1W1	Webdesign 1	KZ	2
Students will learn t	he basics of communication HTTP, URL and addressing, markup languages HTML and XHTML, HTML tags, rules of web accessibility	and usability, CS	S properties
and selectors,	the issue of web browsers, creating one to three column layout pages, sites validation, conditional comments. Topics will be practice	d on practical exar	mples.
14Y1W2	Webdesign 2	KZ	2
Students will learn	advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, web ser	ver installation + c	onfiguration
	directives. Topics will be practiced on practical examples.		
14Y1WG	Webdesign	KZ	2
Students will learn	n the basics of HTTP communication, URL and addressing, HTML5 markup language, advanced CSS3 techniques, accessible and u		esponsive
	webdesign, content management systems, web server installation + configuration directives. The subject matter will be trained on e		
14Y1ZJ	Fundamentals of programming in JAVA	KZ	2
	Java SE Platform. IDE Installation and First Project. Comments. Variables and Type System. Operators. User Input and Parsing. Chai		
Chain and Mathe	matical Methods. Terms. Relational Operators and Switches. Cycles for, while, foreach. Field - declaration, initialization, methods for the parameters, return value, recursion. Program creation.	ieia work. ASCII. F	·unctions,
14Y1ZM	Fundamentals of parametric and adaptive modeling	KZ	2
	roducts and parts creation. Sketch drawing by help of geometric relations, parametric dimensions, creation of adaptive models from 2		
	from and to another systems. Fundamentals of assemblies creation.		
14ZDAL	Data processing in air transport	KZ	2
	processing and analysis tools. Practical part of the training - introduction to the working environment, applied examples of data proce		e, advanced
metho	ods of presentation of the results. Seminar papers on open data. Consultation hours for seminar papers. Seminar paper submission a	nd presentation.	
15DPLG	Transportation Psychology	Z	2
	gy and its basic concepts. Information intake, decision-making and behaviour. Performance. Engineering psychology and vehicle const		ical aspects
of trave	el route and traffic conditions, accidents and traffic incidents. Selection and training of the staff. Work and leisure. Age as a factor in training of the staff.	ansport operation.	
15JL2A	Foreign language - English 2 (for LED)	KZ	2
	nical vocabulary. Selection of conversation topics and professional topics based on students' level and their focus at Faculty of Transpol		
	communication skills, ability to give feedback, summarization of a technical text, presentation structure, technical style and its usage		
15JL3A	Foreign language - English 3 (for LED)	KZ	2
	nical vocabulary. Selection of conversation topics and professional topics based on students' level and their focus at Faculty of Transpol		
	communication skills, ability to give feedback, summarization of a technical text, presentation structure, technical style and its usage		
15JL4A	Foreign language - English 4 (for LED)	ZK	2 ovolonment
	nical vocabulary. Selection of conversation topics and professional topics based on students' level and their focus at Faculty of Transpoll communication skills, ability to give feedback, summarization of a technical text, presentation structure, technical style and its usage		
15JZ1A	Foreign Language - English 1	Z	3
		l l	-
	stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles of		
15X31L	Project 1 LED	Z	2
15X32L	Project 2 LED	Z	2
15X32L	Project 3 LED	Z	2
15X33L 15Y1BO	·	KZ	2
	Work Safety and Health Protection in Transportation lative, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation. H		
. andamonia legis	health insurance of home and foreign business trips, statistics, working practice.	cam protoction pro	- grammos,
15Y1DZ	History of Railway	KZ	2
	ritstory of Railway ays, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repu	l l	
	vay development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connecti		
, -,	railway accidents, railway junctions. Excursions and projections.	, ,	- '
15Y1EH	European Integration within Historical Context	KZ	2
	formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism. Li		
goals. Europe afte	er Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and it	s consequences fo	or Europe.
	New quality of French-German relationship - a driving power of starting European integration.		

15Y1FD	French Area Studies and Transportation	KZ	. 2
	by and regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air traf nch society and culture. Current political system. System of education, studying in France. Selected authors of French literature. Frenc		minology.
15Y1HD	History of City Mass Transport	KZ	2
History of city mas	s transport in the world, development of tram, bus and trolley-bus systems. History of transport networks in the world, current trends and trolley-bus peration systems in the Czech Reput	· · · · · · · · · · · · · · · · · · ·	of tariff and
15Y1HE	Work Hygiene and Ergonomics in Traffic	KZ	2
	of occupational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of these		
	ction of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technology to portion of techno		
15Y1HL	History of Civil Aviation	KZ	2
	g, development of aircrafts lighter than air. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of a		
	amous aviators. Helicopters. CSA airplanes. Development of aircrafts in Czechoslovakia between the years 1945-1989. Classic era of aviation. Modern era of civil aviation. Airline companies. Supersonic flying.		
15Y1MK	Modern History in Context: Every Day Life and Transport	KZ	2
	Historical overview of modern history of every day life, science, technology and transport in a wider context.		
15Y1NE	German in the Economy and Society	KZ	. 2
Recent economic	and social issues of German speaking countries and of the EU. Reading and listening of texts. Lexical, grammatical and semantic an selected topics.	alysis of texts. Disc	cussion on
15Y1ZV	East-West dichotomy: Prelude to the Cold War	KZ	2
	evolution of the "West" and "East" from the 1500s. Focus on the history in the period between 1850 nad 1950. Milestones and continuing	ity of the internation	nal relations
in the end of 19th	century and the beginning of the 20th century. Revolutions, the causes and consequences. Scientific and technological progress, the	causes and cons	equences.
	Economic and financial history. Social changes. Discussions on texts, sources.		
16LLA1	Aircraft 1	KZ	3
Aircraft structural a	nd conceptual design types - definitions and basic knowledge of the problem. Development of requirements, aircraft definitions and ca Systems of primary and secondary airframe structure. Airframe and propulsion unit. Lectures are devoted to aeroplane topic	-	aft loadings.
16LLA2	Aircraft 2	Z,ZK	2
	All Claft 2 consibility, responsibilities of operator and professional supervising. Legislation in area of airworthiness. International and national star		
Warranaotar or o roop	structures. Aeroelasticity. Inherent and operational reliability of aircraft structure. Fatigue strength. Aircraft structure lifetime presui		ity of diffordit
16UDOP	Introduction into Vehicles	Z	2
	portation systems. Functionality and setup. Movement and drive principles. Engines and their characteristics. Rail, road, air and wate	r transport. Alterna	l .
	of transport. Lifting equipment and conveyors. Legislation.		
16X31L	Project 1 LED	Z	2
16X32L	Project 2 LED	Z	2
16X33L	Project 3 LED	Z	2
16Y1EN	Energy Requirements of Vehicles	KZ	2
Dynamics and the	driving inertial of the vehicles. Types of energy - kinetic, static, heat, chemical and others. Ways of energy change into kinetic energy drive, steam engine, air engine. Energy accumulation means, accumulator, flywheel, fuel cell. Energy recuperation. WTW anal		ne, electric
16Y1IS	Interactive simulators and simulations	KZ	2
Simulation theo	ry and application of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical m lation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and intera		l
16Y1KS	Quality and Reliability of Vehicles	KZ	2
	ility theory in design, development, production and operation of vehicles. Definition and possible approach to quality and reliability. Ki		A (Failure
Mode and Effects	Analysis), QFD (Quality Function Deployment), DFx (Design for Assamly, Manufacturying, Quality, Services) and other methods u	sed in industrial ap	oplications.
	Knowledge-based systems of quality and reliability, data collection.		1
16Y1PV	Operation, Construction and Maintenance of Vehicles	KZ	2
Methods of vehicle	e production. Vehicle maintenance. Vehicle diagnostics. Maintenence and repair plans. Engine maintenance and emission measureme	ent. Transmission n	nechanism.
	General principles of engine diagnostics.		
16Y1RE	Control and Electronic Vehicle Systems ts of regulation. Tools for analytical solution, linear system description. Basic types of a regulator (PID), properties, advantages, disadva	KZ	2
	e control. Electric drive. Vehicle communication bus (CAN, LIN, FlexRay, ISObus, KWP2000 protocole etc.). Vehicle electronic control,	•	
	comfort systems.		_
16Y1SO	Strategy and innovation in mobility	KZ	2
	novation, definition. Innovation strategy. Innovation life cycle and ecosystem, main sources and funding opportunities. Successful innovation.		_
co-financing, evalu	ation. Sprint method and its use. Innovative business model - main patterns and examples, design, strategy, processes and outlook (l of use). Creating an innovation strategy. Customer and value map, design and testing.	ousiness pian and	possibilities
16Y1VT	Development in Railroad Vehicles	KZ	2
	s traction. Railroad vehicle parametres regulation. Control and driving of railroad vehicles. Importance in heavy duty and personal trar	nsportation. Critical	situation
	assesment. New materials in design. International standardization.		
16Y1ZG	Introduction into Applied Computer Graphics	KZ	2
	s, division and applications with emphasis on transport, including development and research. Colours, colour perception, colour sche		-
and 3D generation	on, elementary algorithms for graphic data workout. Visualisation principles and tasks, technics, graphics and visualisation HW basics graphics software.	3. Introduction to 21	ບ and 3D
16Y1ZL	Vehicle Testing, Legislation and Construction	KZ	2
	ptorbike costruction, aggregate computing, driving resistance, build and parameters of traction, constructional arrangement of personal c		l
	slation in the EU and in the world, technical legislation creation, testing methods, vehicle tests, accelerated tests, mathematical mode		
17TEDL	Transport Technology and Logistics	KZ	3
	sport technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and freight tran		
	odus, technologic factors of the side of operator and client, organisation of city transport, logistic technologies and their aplication usi		
17X31L	Project 1 LED	Z	2

17X33L	Project 2 LED	Z	2
	Project 3 LED	Z	2
17Y1EV	Public Sector Economy	KZ	2
conomic and financia	I theory of public sector, public choice theory, externalites, decisions about public finance allocation, economic assesment of public	c projects (CBA,	MCA, CEA
ax system of the CR, s	tate budget, management of public projects a their economic efficiency assessment, way of elaboration of PPP projects, funding from	m EU funds, pro	gram HDM-
17Y1LL	Logistics of Passenger and Freight Air Transport	KZ	2
ogistics airline passer	nger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial trans	port process pas	ssengers ar
	air cargo. Information systems in air transport. Global distribution systems.		
17Y1MD	Marketing in Transportation	KZ	2
Jeneral principles of r	narketing applied to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transport an	id the resulting d	lifferences i
47)/405	the application of marketing.	1/7	
17Y1OF	Personal Finance	KZ	2
	ncing), savings and investments (investment horizon, return, risk, investment strategy), insurance (insurance types, suitability and a		-
onoumer loane, round	(retirement savings and insurance).	acquacy), cocur	ing ino rata
17Y1PM	Personnel Management	KZ	2
	work group, man as personality, planning, choice, evaluation and education of human sources, work adaptation, teamwork, interc		1
17Y1SK	Urban and Regional Rail Transport Systems	KZ	2
-	nsport demand, modal-split, distribution of passenger flows on public regional transport lines. Optimization of line management, lin		eating and
evaluation of the tin	netable. Vehicle circulation creation. Optimizing driver shifts and arranging them in turnus. Effects of barrier-free and public transpo	rt preferences. T	he role of
	marketing.		
17Y1SL	Sociology of Human Resources	KZ	2
uman resources and	their importance, work group as a special kind of social group, communication, personal management, modern management, huma	an resources plar	nning, cultu
	of the organization.		
17Y1ST	Titan Simulation	KZ	2
•	ent game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same produc		•
etermine the quantity	and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequences	of their decisions	s by the for
40MTV/	of financial corporate reports and they use this information for other business decisions.	7 71/	
18MTY	Materials Science and Engineering als science and engineering explains mechanical properties of structural materials based on their bonding forces and microstructure.	Z,ZK	3
	ans science and engineering explains mechanical properties of structural materials based on their boriding forces and microstructure e most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and com		
paid to metals as the	to degradation processes in materials, to defectoscopy and to main mechanical tests.	posites. Attention	1 13 0130 pc
18PZP	Elasticity and Strength	Z,ZK	3
1	ion. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolted ar	,	
	Analysis of deflection curve of beams. Torsion of circular cross sections. Combined loading. Stability.		
18SAT	Structural Analysis	Z,ZK	4
General system of fc	rces in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determinate	beams and simp	ple girders.
rinciple of virtual work	. Kinematic method for calculation of reactions of statically determinate systems. Determination of axial forces in truss constructions. C	Cross-sectional cl	haracteristi
	of planar shapes. Fiber polygons and chains.		
18SPP	Seminary from Elasticity and Strength	Z	0
	Seminary from Elasticity and Strength Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam		-
Excersise for practice.	Seminary from Elasticity and Strength Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling.	. Analysis of defl	ection curv
Excersise for practice.	Seminary from Elasticity and Strength Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Seminary from Structural Analysis	. Analysis of defl	ection curv
18SS xamples for practice.	Seminary from Elasticity and Strength Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Seminary from Structural Analysis General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and statically determinated beam and statically determin	. Analysis of defl Z simple frameworl	ection curv
18SS xamples for practice.	Seminary from Elasticity and Strength Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Seminary from Structural Analysis General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and storks for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of journal systems.	. Analysis of defl Z simple frameworl	ection curv
18SS xamples for practice.	Seminary from Elasticity and Strength Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Seminary from Structural Analysis General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and syorks for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of journal of the compound systems. Plane fiber polygons.	. Analysis of defl Z simple frameworl	0 k. Applicati
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18SS xamples for practise. 18STD	Seminary from Elasticity and Strength Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Seminary from Structural Analysis General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and syorks for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of journal of the compound systems. Plane fiber polygons. Seminary from Technical Documentation international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional	. Analysis of defl Z simple frameworl ints and method	0 k. Applicati
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18SS xamples for practice. 18SS xamples for practise. 18TD Technical standards. 18TED Technical standards. 18X31L 18X32L 18X33L	Seminary from Elasticity and Strength Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Seminary from Structural Analysis General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and syorks for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of journal of the polygons. Seminary from Technical Documentation International standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional arrangement of drawing sheets. Technical Documentation International standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional arrangement of drawing sheets. Project 1 LED Project 2 LED Project 3 LED	. Analysis of deflection Z simple framework Z and geometrica KZ and geometrica Z Z Z Z Z	0 of section of section of section of section of section of accuracy, accura
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18SS xamples for practice. 18SS xamples for practise. the principle of virtual was a standard of the principle of the princip	Seminary from Elasticity and Strength Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Seminary from Structural Analysis General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and syorks for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of journal of the polygons. Seminary from Technical Documentation International standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional arrangement of drawing sheets. Technical Documentation International standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional arrangement of drawing sheets. Project 1 LED Project 2 LED Project 3 LED Anatomy, Mobility and Safety of Man	. Analysis of deflexible Z simple framework ints and method and geometrica KZ and geometrica Z Z Z KZ und nervous systematical systematical XZ Z Z KZ kz sind nervous systematical xx	0 k. Application of section of section of section accuracy, 2 l accuracy, 2 l 2 l accuracy, 3
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18Y1UK	Introduction of Rail Vehicles	KZ	2
	ics and parameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion tra tal running resistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehicle -		
track resistance. To	and electric drive. Design concept rail vehicles and drive of wheel set.	nyuromechanic, ny	yurouyriairiic
20SYSA	Systems Analysis	Z,ZK	5
	em sciences, system viewpoint, terminology, typical system analysis tasks, system identification, system interface and interface tasks		1
and its analysis,	strong functions and processes, genetic code, system identity, system architecture. Tools for system analysis - Petri nets, decision tal	oles, algorithms for	r structural
	tasks. Soft and hard systems, methods for soft system analysis.		
20UITS	Introduction to Intelligent Transport Systems	Z,ZK	7
	gislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamentals of infor		
systems for 115. Ph	inciples and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real examples principles of ITS.	or possible applic	ations of the
20X31L	Project 1 LED	Z	2
20X31L	Project 2 LED	Z	2
20X33L	Project 3 LED	Z	2
20Y1AE	Applied Electronics	KZ	2
	Applied Electronics semiconductor components, their principles, characteristics and typical connection diagrams. Semiconductor PN junction diodes, tran		
	ogic gates. Functions of basic electronic circuits and methods for their designs (rectifiers, voltage regulator with Zener diode, transisto	-	•
, , , , , , , , , , , , , , , , , , , ,	amplifier as an inverting and noninverting amplifier).	, ,	
20Y1AF	Alternative Forms of Transportation Project Financing	KZ	2
In will be specifed s	such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt paym	ents come from its	s budget but
the final debtor is n	ot a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of sections and the companies in a project.	urities as an altern	ative source
20)/454	of transportation and telecomunication projects.	1/7	
20Y1EA	Environmental Aspects of Transport bere, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilistic	KZ	2
	n pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transp		
20Y1EK	Qualification in Electrical Engineering	KZ	2
-	e with measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock hazard,	I	- 1
voltage, maximum	allowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legislation	on, standards and	regulations
	in relation to health and safety and electrical engineering.		
20Y1KP	Communication and presentation skills	KZ	2
· · · · · · · · · · · · · · · · · · ·	es and their fulfillment, current communication networks, work with various sources, formal requirements of emails and final theses, b		
teamwork, emot	tional intelligence, manipulation and way of working with it, coping with stressful situations, formal requirements of presentations, way presentation, presentation skills, presentation skills in online environment.	/s of communication	on auring
20Y1LN		KZ	2
-	Location and Navigation examples of road networks, localization on the network. Routing algorithms, their properties and implementation. Description and exa	I	1
Description and e	transport connections, routing algorithms, their properties and implementation.	imples of datasets	ioi iiiidiiig
20Y1OI	Fare Collection and Information Systems	KZ	2
	stems in public transport and their components (on-board units, validators, turnstiles,). Information systems and their components	I	1 1
par	nels) and operators (cycles, location or current delay of vehicles,). The issue of tariff systems. Other examples of clearance systems	ems (parking).	
20Y1OK	Road Lighting	KZ	2
	tities and terms, street lighting components (luminaires, control cabinets for street lighting, street lighting cables), characteristics of luminaires.	•	٠
light distribution),	standards, measurement of illuminance and luminance in road lighting, tunnels, conceptual approach to street lighting design, lighting	g calculations in D	DIALux and
00)/4 DI/	Relux, street lighting control systems.	1/7	
20Y1PK	Product Quality Management Processes of organization management. Management systems and international standards; quality management systems. Quality products, pro	KZ	1 2
	tems management, management principles. Principles of process management, monitoring and measurement systems management. L	· · · · · · · · · · · · · · · · · · ·	
o. o.aaa. ao .o. o, o	for systems management. Process management principles. Metrology and testing. Product certification.		or otarradrao
20Y1SC	Sensors and Actuators	KZ	2
Principles of sensor	's and actuators. Basics of measuring theory and actuating influence. The respective technologies and construction principles. Sensors of	I	1
	state (temperature, humidity), chemical and particle flow values. Electrical, pneumatic and hydraulic actuators and solid phase electrical	ements.	
21EMIL	Air Transport Economy	Z,ZK	5
	ses on the fundamentals of economics, providing students with an understanding of accounting principles and role of financial statem		
course builds on th	ne general knowledge acquired and applies it to the environment of air transport economics. The basic principle is the Holloway mode	I, which structures	s knowledge
241 EIC	about demand, price and yield on the one hand, and supply, costs and expenses on the other.	7.71/	
21LEIS Basic definition	Aerodromes s. Applicability. Airport design. Reference code. Declared distances of runways (RWY). Taxiways and aprons. Clearway. Stopway. Mai	Z,ZK	at areas
	arkers. Visual aids for denoting obstacles. Obstacle restriction, removal. Visual aids for navigation, lights, approach lighting systems. V	-	
0 0	systems. Runway lights. Taxiway lights. Visual aids for denoting obstacles.		
21LGCE	Air Navigation	Z,ZK	3
Earth - its shape, p	parameters and properties. Aeronautical charts and their use. Measuring time. Dead reckoning. Radionavigation aids. Global navigation	on satellite system	ns. Air traffic
	services routes and their design.		
21LGL1	Aviation English 1	Z	2
	Familiarity with the terminology used in civil aviation in the general context and emphasizing the ability to receive information only in		
21LGL2	Aviation English 2	KZ	2
241.01/5	Terminology in the sphere of aircraft construction, principles of flight, aircraft engines, instruments and systems.	71/	
21LGVP	Legislation and Operational Regulations viation regulations. The scope of international and national organizations in civil aviation. Analysis and interpretation of the ICAO Ann	ZK	0000 4444
	viation regulations. The scope of international and national organizations in civil aviation. Analysis and interpretation of the ICAO Ann . Introduction to the European Parliament and Council Regulation (EC), Commission Regulation (EU) and the Decisions of the Exect		
, 000, 0100	5335.5. 15 and European's amanders and Sounds regulation (EO), Commission Regulation (EO) and the Decisions of the Exect	Director of LF	,

21LMR1	Aircraft Engines 1	ZK	3
	ine, theoretical background, operational characteristics and construction schemes. Propellers, operational characterictics. Turbine en onstruction schemes, operational characteristics. Turbojet and turbofan engines, basic construction modules, and their operational cha		
21LVYO	Human Performance and Limitations	ZK	3
	e & limitations, aptibility & competence, accident statistics, flight safety, basics of flight physiology, man & environment,		
•	lealth & Description and the second s	• •	
	& amp; model of human error, body rhythms & amp; sleep, stress, fatigue, working methods.		
21MEOL	Meteorology	KZ	3
	sphere. Vertical stratification. Pressures QNH, QFE, QFF, QME. Instability. Atmospherical fronts. Atmospherical rainfall, origin fission.		- 1
wind. Cyclone and a	anticyclone. Gradient wind. Geostrofical and geocyklostrofical wind. Visibilities in air transport. Dangerous meteorological aspects. Meteorological informations.	orological maps. C	limatology.
21PAP	Circulation. Intertropical front. Meteorological informations. Flight Planning and Performance	Z,ZK	4
	Fight Flaming and Ferromance Load of aircraft. Determination of centre of gravity - loadsheet, trimsheet. Aircraft weighing. Overloading of aircraft. Basic characteristic sp		
	g performance. Drift down. ETOPS. MEL. Flight planning and monitoring. Routing. FL and speeds selection. Charts. ICAO ATC FPL. A		
	Fuel plan. Operational flight plan.	•	
21RELP	Air Traffic Control	Z,ZK	4
21RIBZ	Aviation Safety	KZ	2
	s topics related to the safety management and structure of the SMS. This includes a description of the SMS mechanisms and tools, used		operations.
	ring the course, students are continuously working on the semestral assignment, which helps them to understand practical application		
21SBL1	Bachelor Thesis Seminar 1	Z	1
	iew, applied research, basic research, thesis dealing with design proposals). Working with citation sources (citation sources, citation c e). Analyzing the state of the art (standards of research writing). Defining the limitations of the state of the art. Introduction to the thes		Styles, now
21SBL2	Bachelor Thesis Seminar 2	Z	1
	esis writing (introduction, analysis of the current state, specification of the problem, objectives and hypotheses). Definition of material		-
	taining results, presentation and discussion of results, formulation of thesis conclusions. Basics of LaTeX, working with LaTeX and We	· · · · · · · · · · · · · · · · · · ·	.
21SBL3	Bachelor Thesis Seminar 3	Z	1
Formal and grap	hic design of the thesis. Data collection and presentation, basic statistical reasoning, validation of results and designs. Achieving the	objectives of the th	esis and
	evaluation of hypothesis tests. Preparation of the presentation, principles of presentation of the thesis.		
21SLD	Seminar of Air Transport	Z	0
=	ons, terminology, basic rules. VFR / IFR. Basics of aerodynamics. Propulsion of aircraft. Aircraft design. Basics of navigation, radio na ht planning, optimization of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic mai	-	
periormance. Filg	security. Air crew. Airlines and economics. Space technologies.	lagement, ground	riariding,
21SYLP	Airport Security	KZ	2
-	n security and unlawful acts against the civil aviation. Description of threats, risks, causes and goals of Security. Overview of national	ı	
and their rele	evance to airport security. Security control devices. Operational efficiency factors and related variables. Basic use of queueing theory	and optimization ta	isks.
21X31L	Project 1 LED	Z	2
21X32L	Project 2 LED	Z	2
21X33L	Project 3 LED	Z	2
21Y1AM	Aeronautical Information Management (AIM)	KZ	2
	c overview of AIS and AIM. Transition from AIS to AIM. Regulatory base. Provision of AIS/AIM in the Czech Rep. AIP (Aeronautical Int RAC System. NOTAM messages.PIB (Pre-flight Informtion Bulletin). AIC (Aeoronautical Inf. Circulars). Aeronautical Charts. EAD (Eur	,	
the Ozech Nep. Al	(Quality Mng. System). ADQ (Aeronautical Data Quality). AIXM (Aeronautical Inf. Exchnage Format).	opena Alo Dalaba	ise). Qivio
21Y1BS	Unmanned aircraft systems 1	KZ	2
	n Development. Aircraft design. Legislation in force in the Czech Republic. Planning and execution of the flight. Airspace division. Ope	rational risks and o	
	procedures. Practical flights.		
21Y1LJ	Aeronautical Radio and Flight Instruments	KZ	2
	story of aircraft instrumentation, aerometric instrumentation, Earth magnetism, aircraft electric equipment, gyroscopic instrumentation		
21Y1LS	ft equipment, engine instrumentation, warning and recording systems, instrumentation operational requirements, radiocommunication Air Traffic Services	KZ	2
	n Czech Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, APP		
opass su astars	at USA and Czechoslovakia. ATS - Model of financing. Training System of Air Traffic Controllers. Future development of ATS		10.7 0.7.1.0
21Y1MP	Matlab for project-oriented study	KZ	2
	bus is focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exercises	will he prepared a	ccording to
	ous is locused on the problem-solving during bachelors thesis preparation and it is based on students requests. Individual exercises	wiii be prepared at	ah skills
particular examp	les, based on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improvement	nt of students' Matl	ab skiiis.
21Y1OH	les, based on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improvement Airline Business and Operations	nt of students' Matl	2
21Y1OH The course provide	les, based on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improvement Airline Business and Operations a comprehensive view of the commercial, operational and transportation activities of air transport companies. It focuses on the organization	t of students' Matl	2 companies,
21Y1OH The course provide	les, based on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improvement Airline Business and Operations a comprehensive view of the commercial, operational and transportation activities of air transport companies. It focuses on the organization strategy, economic and operational indicators. It introduces students in detail to operational processes and the essentials of transport	t of students' Matl	2 companies,
21Y1OH The course provider various aspects of t	les, based on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improvement Airline Business and Operations a comprehensive view of the commercial, operational and transportation activities of air transport companies. It focuses on the organization strategy, economic and operational indicators. It introduces students in detail to operational processes and the essentials of transport a basic view of the economic aspects of air transport.	KZ KITCH KZ KITCH KZ KITCH KZ KITCH	2 companies, . It provides
21Y1OH The course provides various aspects of t	les, based on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improvement Airline Business and Operations a comprehensive view of the commercial, operational and transportation activities of air transport companies. It focuses on the organization strategy, economic and operational indicators. It introduces students in detail to operational processes and the essentials of transport	nt of students' Mati KZ utional structure of ortation processes	2 companies, . It provides
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21Y1UL			
Aircraft aparations	Aircraft Maintenance	KZ	2
•	and technical operations. Maintenance and work processes. Defects search methods, status check diagnostic tools. Selection and qua		
Basic documentat	ion for maintenance. Optimization of time maintenance intervals. Regulation no. 1321/2014 Part 145. Human factors of aircraft maintenance	enance. Regulation	of director
	EASA for aircraft maintenance. Seminars will be focused on practical application.		
21ZALD	Basics of Air Transport	KZ	2
-	terminology, basic rules. VFR/IFR. Basics of aerodynamics. Propulsion of aircraft. Aircraft design. Basics of navigation, radio navigation.		
Flight planning, op	timization of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic management, ground the control of th	nd handling, secur	ty. Air crew.
	Airlines and economics. Space technologies.		
21ZT	ATM Systems	ZK	, 2
The course inti	oduces classical and modern facilities, systems and technologies designated for ATS. Student obtains knowledge of technical princip	les and solutions a	is far as
0.473.477.4	communication, navigation and surveillance aviation systems are concerned.	7.71	
21ZYT1	Principles of Flight 1	Z,ZK	3
-	relation between drag and speed, streamline, boundary layer, formula of continuity, formula of Bernoulli, lift and drag, air flow and pro		
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, interrerence,	devices for
047\/T0	lift and drag increase.	7.71/	
21ZYT2	Principles of Flight 2	Z,ZK	3
	amic longitudinal stability, neutral point, location of centre of gravity, static directional & p; lateral stability, dynamic directional & amp	-	
(longitudinal), ya	w (directional) & mp; roll (lateral), roll/yaw interaction, trimming, speed of sound, Mach number, compressibility, shock waves, critical heating, operating limitations, manoeuvring envelope, gust-load diagram.	Mach number, aer	bdynamic
220ELN		71/	
22SELN	Air Accident Investigation	ZK	2
	gislation (ICAO, EU, Czechia) related to air accident investigation. Obligations arising from legislative requirements for individual States ess. Air accident site (inspector's equipment, site security, personal protection, initial activities at the site, sketch, evidence, etc.). Airci		
investigation proc	Final report (formalities, substantive content, contribution).	rait and crew docu	nentation.
22X31L		Z	2
	Project 1 LED		2
22X32L	Project 2 LED	Z	2
22X33L	Project 3 LED	Z	2
23X31L	Project 1 LED	Z	2
23X32L	Project 2 LED	Z	2
23X33L	Project 3 LED	Z	2
23Y1EH	Electronics and hardware in security of transportation	KZ	2
	eters of signals. Passive circuits, properties, basic measurements. Passive filters, semiconductors. Operational amplifiers, basic circui		
	gic circuits. AD converters. Connection of analog and digital parts. Basic blocks of digital signal processing. Measurement processing. D	•	
	in electronics.	_	
23Y1KB		KZ	2
	Cyber security in transportation security and cyber security, legal status in the field of cyber security, virtual cyberspace and communities, taxonomy of crimes in cyber		
Basic concepts of	Cyber security in transportation	erspace, social imp	acts, social
Basic concepts of	Cyber security in transportation security and cyber security, legal status in the field of cyber security, virtual cyberspace and communities, taxonomy of crimes in cyber	erspace, social imp	acts, social
Basic concepts of engineering	Cyber security in transportation security and cyber security, legal status in the field of cyber security, virtual cyberspace and communities, taxonomy of crimes in cyber g, cyber attack technology, information security, cyber attacks on telematics systems, security of systems with artificial intelligence, n	erspace, social imp norms and standard KZ	acts, social ds.
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