Study plan

Name of study plan: Bachelor TET-LED Full-Time from 2023/24

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 grou	http://www.abi.					
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+22B	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+10B	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+10B	Z	Z
11GIE	Geometry Pavel Provinský, Old ich Hykš, Šárka Vorá ová Old ich Hykš Old ich Hykš (Gar.)	КZ	3	2P+2C+12B	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.)	КZ	3	0P+2C+8B	Z	Z
14KSP	Constructing with Computer Aid Vít Fábera, Radek Kratochvíl Lukáš Svoboda	KZ	2	0P+2C+8B	Z	Z
18TED	Technical Documentation Jitka ezní ková, Vít Malinovský Jitka ezní ková Jitka ezní ková (Gar.)	KZ	2	1P+1C+8B	Z	Z
15DPLG	Transportation Psychology Eva Rezlerová, Jana Štikarová	Z	2	2P+0C+6B	Z	Z
16UDOP	Introduction into Vehicles Zuzana Radová, Petr Bouchner	Z	2	2P+0C+8B	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,

12ZYDI	Introduction to Transportation Engineering	7 71/	2
	Introduction to Transportation Engineering	Z,ZK	-
	I land-use planning. Basic terms in transportation engineering. Traffic survey and traffic prognosis. Introduction to topic of road in to environment and safety.	s, public mass tra	insport. Negative
<u> </u>		/	
18MTY	Materials Science and Engineering	Z,ZK	3
	Is science and engineering explains mechanical properties of structural materials based on their bonding forces and microstru		
1 ·	most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and	composites. Atter	ntion is also paid
to degradation process	es in materials, to defectoscopy and to main mechanical tests.		
11GIE	Geometry	KZ	3
Differential geometry of	curves - parameterization, the arc of the curve, torsion and curvature, Frenet's trihedron. Kinematics - a curve as a trajector	y of the motion, th	ne velocity, and
acceleration of a particl	e moving on a curved path.		
14ASD	Algorithm and Data Structures	KZ	3
Students will analyze pr	volumes, design a theoretical solution to a given problem and write the resulting algorithm using flowcharts, practice reading a	gorithms written	using flowcharts,
and use basic Boolean	algebra to construct constraints in algorithms. Students will be introduced to the basics of the Python programming language	- variable, branc	hing, loops, they
will learn to work with v	ariables 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 de	termination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic common	work rules in grap	hic applications
and CA systems. Co-or	dinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting poss	ibilites, AutoCAD	environment
profiles, drawings with r	aster foundaments).		
18TED	Technical Documentation	KZ	2
Technical standards, int	, ernational standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensior	al and geometric	al accuracy,
arrangement of drawing	j sheets.		
15DPLG	Transportation Psychology	Z	2
Subject of psychology a	nd its basic concepts. Information intake, decision-making and behaviour. Performance. Engineering psychology and vehicle or	onstruction. Psych	ological aspects
of travel route and traffi	c conditions, accidents and traffic incidents. Selection and training of the staff. Work and leisure. Age as a factor in transport of	peration.	
16UDOP	Introduction into Vehicles	Z	2
Vehicles and transporta	, tion systems. Functionality and setup. Movement and drive principles. Engines and their characteristics. Rail, road, air and w	ater transport. Alt	ernative means
of transport. Lifting equi	pment and conveyors. Legislation.		
TV-1	Physical Education	Z	1
1 V 1		2	I

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:

	group.					
Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11CAL2	Calculus 2 Olga Vraštilová, Tomáš Tasák, Magdalena Hykšová, Ond ej Navrátil, Old ich Hykš Magdalena Hykšová Ond ej Navrátil (Gar.)	Z,ZK	5	2P+3C+20B	3 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	B L	Z
12ZTS	Railway Lines and Stations Lukáš Týfa, Martin Jacura, Petr Šatra, Tornáš Javo ík, Ond ej Trešl Lukáš Týfa (Gar.)	Z,ZK	4	2P+2C+10B	B 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	S 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	3 L	Z
14PRG	Programming Alena Kubá ová, Jan Procházka, Martin Fiala, Jana Kaliková, Jan Kr ál, Lukáš Svoboda Jana Kaliková Jana Kaliková (Gar.)	КZ	2	0P+2C+8B	3 L	Z
17TEDL	Transport Technology and Logistics Vít Janoš, Michal Drábek, Zden k Michl, Rudolf Vávra, Stanislav Metelka Zden k Michl Vít Janoš (Gar.)	КZ	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	κz	2	0P+2C+8B	B 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

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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	egrals.		1

11STAT	Statistics	Z,ZK	4
Basics of probability De	scriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Param	netric tests Nonpa	rametric tests
Regression and correla	tion analysis		
12ZTS	Railway Lines and Stations	Z,ZK	4
Rail transport. Railway t	rack geometry parameters. Route layout of railway lines. Railway line construction - railway substructure and superstructure.	Spatial layout of	ailway lines.
Railway control systems	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 determina	ate beams and sir	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 ta	sks, processes, s	ystem behaviour
and its analysis, strong	functions and processes, genetic code, system identity, system architecture. Tools for system analysis - Petri nets, decision t	ables, algorithms	for structural
tasks. Soft and hard sys	stems, methods for soft system analysis.		
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 progr	amming language	e is expanded
	ant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and se	earching, tuples, s	ets, dictionaries,
working with date and ti	me, regular expressions, functions and procedures, working with files (CSV, JSON, XML).		
17TEDL	Transport Technology and Logistics	KZ	3
Basic terms in transport	t technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and freight t	ransport, organis	ation of traffic in
each transport modus,	echnologic factors of the side of operator and client, organisation of city transport, logistic technologies and their aplication u	ising various trans	sport modus.
21ZALD	Basics of Air Transport	KZ	2
History, definitions, term	nology, basic rules. VFR/IFR. Basics of aerodynamics. Propulsion of aircraft. Aircraft design. Basics of navigation, radio navigat	ion. Weight, balan	ce, performance.
Flight planning, optimiza	ation of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic management, c	round handling, s	ecurity. Air crew.
Airlines and economics	Space technologies.		
TV-2	Physical Education	Z	1

Code of the group: 3S-BP-TET-20/21

Name of the group: 3rd 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 8 courses

Credits in the group: 30

Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11FYZ	Physics 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
17TGA	Graph Theory and its Applications in Transport Alena Rybi ková, Denisa Mocková, Dušan Teichmann	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-20/21 Name=3rd Sem. Bachelor Full-Time TET from 2020/21

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	flow and methods for their measurement. Models of the traffic flow, communications load, line and urban systems. Theory of	f queues, shock w	vaves. Quality of		
transport and its assess	ment. Statistical characteristics of transport. Transport excesses, their analysis, the causes, identify and minimize the consec	quences. Improvin	ig of transport		
safety and fluency.					
17TGA	Graph Theory and its Applications in Transport	Z,ZK	4		
Basic terms of graph the	eory, paths in graphs, flows in networks, location problems, design problems on graphs, optimum routing, use of graphs in ot	her 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 cu	rve 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. Principl	es and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real examp	oles of possible a	oplications of the		
principles of ITS.					
12PPOK	Designing Roads, Highways and Motorways	KZ	3		
Definition, types, owners	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	d communicative s	kills. Elementary		
systems for ITS. Principles and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real examples of possible applications of the principles of ITS. 12PPOK Designing Roads, Highways and Motorways KZ 3 Definition, types, ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard speed. Route in rural areas. Range of vision for stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safety device. Crossings, junctions, intersections. 14DATS Database Systems KZ 2 Basic concepts of database systems, conceptual model, relational data model, the principles of normal forms, relational database design, security and integrity of data, database queries, relational algebra, SQL language, client / server, multilayer architectures, distributed database systems. Access to data via the WWW.					

Code of the group: 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 gr	oup.					
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.)	КZ	3	2P+1C	L	Z
21RIBZ	Aviation Safety Natalia Guskova, Libor Kurzweil, Libor Kurzweil, Libor Kurzweil, Libor Kurzweil Andrej Lališ	КZ	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,	КZ	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 cu	rrent. Magnetic field. Electromagnetic field. Optics. Basics of solid-state physics.					
21LEIS	Aerodromes	Z,ZK	3			
Basic definitions. Applic	Basic definitions. Applicability. Airport design. Reference code. Declared distances of runways (RWY). Taxiways and aprons. Clearway. Stopway. Markings of movement areas.					
Markings. Signs. Marke	rs. Visual aids for denoting obstacles. Obstacle restriction, removal. Visual aids for navigation, lights, approach lighting system	ns. Visual approac	h slope indicator			
systems. Runway lights	Taxiway lights. Visual aids for denoting obstacles.					
21RELP	Air Traffic Control	Z,ZK	4			
21ZT	ATM Systems	ZK	2			
The course introduces of	classical and modern facilities, systems and technologies designated for ATS. Student obtains knowledge of technical princip	les and solutions	as far as			
communication, navigat	ion and surveillance aviation systems are concerned.					
21ZYT1	Principles of Flight 1	Z,ZK	3			
Aerodynamic drag, rela	tion between drag and speed, streamline, boundary layer, formula of continuity, formula of Bernoulli, lift and drag, air flow and	d pressures aroun	d wing, angle of			
attack, reactions of wing	g 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	ced drag, interfere	ence, devices for			
lift and drag increase.	ft and drag increase.					
16LLA1	Aircraft 1	KZ	3			
Aircraft structural and co	nceptual design types - definitions and basic knowledge of the problem. Development of requirements, aircraft definitions an	d categorisation.	Aircraft 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 top	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, students are continuously working on the semestral assignment, which helps them to understand practical application of the SMS.						
14PGP	Program Resources	Z	2			
Students will be remind	Students will be reminded of some aspects of Pythom programming, learn basic concepts and constructs from object-oriented programming and their implementation in Python. They					
will also try out the basi	cs 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, cit	ation styles, how			
to cite). Analyzing the s	tate of the art (standards of research writing). Defining the limitations of the state of the art. Introduction to the thesis method	ology.				
15JL2A	5JL2A 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 Trans	sportation Scienc	es. Development			
of perceptive and comm	nunication skills, ability to give feedback, summarization of a technical text, presentation structure, technical style and its usag	ge, language of m	nanagement.			

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	tandards. Static s	olidity of aircraft
structures. Aeroelasticity	y. Inherent and operational reliability of aircraft structure. Fatigue strength. Aircraft structure lifetime presumption.		
21LGCE	Air Navigation	Z,ZK	3
Earth - its shape, param	neters and properties. Aeronautical charts and their use. Measuring time. Dead reckoning. Radionavigation aids. Global naviga	ation satellite sys	tems. Air traffic
services routes and the	ir 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 A	nnexes 1-19, ICA	O Docs. 4444,
7030, 8168. Introduction	n to the European Parliament and Council Regulation (EC), Commission Regulation (EU) and the Decisions of the Executive I	Director of EASA	
21ZYT2	Principles of Flight 2	Z,ZK	3
Static & amp; dynamic lo	ngitudinal stability, neutral point, location of centre of gravity, static directional & amp; lateral stability, dynamic directional & am	p; lateral stability	, control pitch
(longitudinal), yaw (dired	ctional) & roll (lateral), roll/yaw interaction, trimming, speed of sound, Mach number, compressibility, shock waves, critica	l Mach number, a	erodynamic
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	an air accident,
investigation process. A	ir accident site (inspector's equipment, site security, personal protection, initial activities at the site, sketch, evidence, etc.). Air	craft and crew do	ocumentation.
Final report (formalities,	substantive content, contribution).		
14ZDAL	Data processing in air transport	KZ	2
Introduction to data prod	cessing and analysis tools. Practical part of the training - introduction to the working environment, applied examples of data pro	ocessing from pra	ctice, advanced
methods of presentation	of the results. Seminar papers on open data. Consultation hours for seminar papers. Seminar paper submission and present	tation.	

21MEOL	Meteorology	KZ	3						
Structure of atmosphere	Vertical stratification. Pressures QNH, QFE, QFF, QME. Instability. Atmospherical fronts. Atmospherical rainfall, origin fission	n. Turbulence. Po	wers causing						
wind. Cyclone and anticy	rclone. Gradient wind. Geostrofical and geocyklostrofical wind. Visibilities in air transport. Dangerous meteorological aspects. I	Meteorological ma	aps. Climatology.						
Circulation. Intertropical	front. Meteorological informations.								
21SYLP	1SYLP Airport Security KZ 2								
Definition of aviation sec	urity and unlawful acts against the civil aviation. Description of threats, risks, causes and goals of Security. Overview of natio	onal and internation	onal regulations						
and their relevance to ai	rport security. Security control devices. Operational efficiency factors and related variables. Basic use of queueing theory and	d optimization tas	ks.						
21LGL1	Aviation English 1	Z	2						
Familiarity with the term	nology 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 w	riting (introduction, analysis of the current state, specification of the problem, objectives and hypotheses). Definition of mater	ials and methods	, approach to						
obtaining results, preser	tation and discussion of results, formulation of thesis conclusions. Basics of LaTeX, working with LaTeX and Word template.								
15JL3A	Foreign language - English 3 (for LED)	ΚZ	2						
Grammar and technical	vocabulary. Selection of conversation topics and professional topics based on students' level and their focus at Faculty of Trans	sportation Science	es. Development						
of perceptive and comm	unication skills, ability to give feedback, summarization of a technical text, presentation structure, technical style and its usage	je, 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	6 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	6 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 the courses of this group of Study Plan: Code=6S-BP-LED-23/24 Name=6th Sem. Bachelor Full-Time TET-LED from 2023/24

2023/24									
11MSP	Modeling of Systems and Processes	Z,ZK	4						
System and subsystem,	System and subsystem, external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of differential and differential equations.								
Linear and nonlinear system, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer function. Stability of LTI systems.									
Discretization of continu	ious systems. System interconnection.								
21EMIL	Air Transport Economy	Z,ZK	5						
The course focuses on	the fundamentals of economics, providing students with an understanding of accounting principles and role of financial state	ments. In the seco	ond part, the						
course builds on the ge	neral knowledge acquired and applies it to the environment of air transport economics. The basic principle is the Holloway m	odel, which struct	ures knowledge						
about demand, price an	d yield on the one hand, and supply, costs and expenses on the other.								
21LMR1	Aircraft Engines 1	ZK	3						
Aircraft piston engine, th	neoretical background, operational characteristics and construction schemes. Propellers, operational characterictics. Turbine	engine, theoretica	al background,						
thermal cycles, construct	ction schemes, operational characteristics. Turbojet and turbofan engines, basic construction modules, and their operational	characteristics. Er	igine control.						
21LVYO	Human Performance and Limitations	ZK	3						
Human performace &an	n; limitations, aptibility & competence, accident statistics, flight safety, basics of flight physiology, man & environm	ent, breathing &ar	np; circulation,						
sensory system, health	& hygiene, health preservation, intoxication, incapacitation, basics of flight psychology, human information processing, i	memory & le	arning, theory						
& model of human	error, body rhythms & amp; sleep, stress, fatigue, working methods.								
21PAP	Flight Planning and Performance	Z,ZK	4						
Mass and balance. Load	of aircraft. Determination of centre of gravity - loadsheet, trimsheet. Aircraft weighing. Overloading of aircraft. Basic characterist	ic speeds. Runwa	y characteristics.						
Take off and landing per	formance. Drift down. ETOPS. MEL. Flight planning and monitoring. Routing. FL and speeds selection. Charts. ICAO ATC FP	L. Aerodrom oper	ation minimums.						
Fuel plan. Operational f	light plan.								
21LGL2	Aviation English 2	KZ	2						
Terminology in the sphe	re of aircraft construction, principles of flight, aircraft engines, instruments and systems.								
21SBL3	Bachelor Thesis Seminar 3	Z	1						
Formal and graphic des	ign of the thesis. Data collection and presentation, basic statistical reasoning, validation of results and designs. Achieving the	e objectives of the	thesis and						
evaluation of hypothesis	tests. Preparation of the presentation, principles of presentation of the thesis.								

15JL4A	Foreign language - English 4 (for LED)	ZK	2
Grammar and technica	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 comr	nunication skills, ability to give feedback, summarization of a technical text, presentation structure, technical style and its usa	ge, language of m	anagement.

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 Note on the group:

Tutors, authors and guarantors (gar.)	t of codes of their	Completion	Credits	Scope	Semester	Role
6X31L Project 1 LED		Z	2	0P+1C	L	ZP
5X31L Project 1 LED		Z	2	0P+1C	L	ZP
4X31L Project 1 LED Tomáš Brandejský, Vít Fábera, Jana Kaliková,	Jan Kr ál, Mária Jánešová	Z	2	0P+1C	L	ZP
2X31L Project 1 LED		Z	2	0P+1C	L	ZP
1X31L Project 1 LED Michal Matowicki Michal Matowicki Michal	Matowicki (Gar.)	Z	2	0P+1C	L	ZP
3X31L Project 1 LED		Z	2	0P+1C	L	ZP
8X31L Project 1 LED		Z	2	0P+1C	L	ZP
0X31L Project 1 LED		Z	2	0P+1C	L	ZP
1X31L Project 1 LED Jakub Hospodka, Slobodan Stoji , Terézia Piln Natalia Guskova, Lenka Hanáková, Lukáš Pop		z	2	0P+1C	L	ZP
2X31L Project 1 LED		Z	2	0P+1C	L	ZP
7X31L Project 1 LED		Z	2	0P+1C	L	ZP
6X32L Project 2 LED		Z	2	0P+1C	Z	ZP
5X32L Project 2 LED		Z	2	0P+1C	Z	ZP
4X32L Project 2 LED Tomáš Brandejský, Vít Fábera, Jana Kaliková,	Jan Kr ál, Mária Jánešová	Z	2	0P+1C	Z	ZP
2X32L Project 2 LED		Z	2	0P+1C	Z	ZP
1X32L Project 2 LED Magdalena Hykšová, Michal Matowicki, Jana K Matowicki (Gar.)	uklová Jana Kuklová Michal	Z	2	0P+1C	z	ZP
7X32L Project 2 LED		Z	2	0P+1C	Z	ZP
3X32L Project 2 LED		Z	2	0P+1C	Z	ZP
2X32L Project 2 LED Michal Frydrýn, Zden k Svatý		Z	2	0P+1C	Z	ZP
1X32L RTOject 2 LED Jakub Hospodka, Ladislav Capoušek, Slobodal Stanislav Pleninger, Vladimír Socha, Natalia G Kameníková,		Z	2	0P+1C	z	ZP
0X32L Project 2 LED		Z	2	0P+1C	Z	ZP
8X32L Project 2 LED		Z	2	0P+1C	Z	ZP
1X33L Project 3 LED Magdalena Hykšová, Michal Matowicki, Jana K Matowicki (Gar.)	uklová Jana Kuklová Michal	z	2	0P+3C	L	ZP
2X33L Project 3 LED		Z	2	0P+3C	L	ZP
4X33L Project 3 LED		Z	2	0P+3C	L	ZP
5X33L Project 3 LED		Z	2	0P+3C	L	ZP
6X33L Project 3 LED		Z	2	0P+3C	L	ZP
3X33L Project 3 LED		Z	2	0P+3C	L	ZP
1X33L Project o LED Jakub Hospodka, Tomáš Tlu ho, Sébastien Lár Stoji , Terézia Pilmannová, Stanislav Pleninger,		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

from 2022/23			
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-23/24 Name of the group: Comp. Sel. Courses Bachelor Full-Time TET-LED from 2023/24 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 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 Solaty of Man	KZ	2	2P+0C	Z	PV
14Y1AV	Anatomy, Mobility and Safety of Man Animation and Visualization	KZ KZ	2	2P+0C 2P+0C	L	PV PV
12Y1AE	Applied Ecology	KZ	2	2P+0C	Z	PV
20Y1AE	Martin Jacura, Kristýna Neubergová					
	Applied Electronics Barrierless Transport	KZ	2	2P+0C	Z	PV
14Y1BE	Jan Král	KZ	2	2P+0C	L	PV
15Y1BO	Work Safety and Health Protection in Transportation Petr Musil	KZ	2	2P+0C	L	PV
11Y1BK	Error Detection Codes for Interlocking Systems Lucie Kárná Lucie Kárná Lucie Kárná (Gar.)	KZ	2	2P+0C	Z	PV
21Y1BS	Unmanned aircraft systems 1 Tomáš Tlu ho, Michal erný, Jakub Kraus	KZ	2	2P+0C	L	PV
14Y1BM	Biometric Methods	KZ	2	2P+0C	Z	PV
15Y1DZ	History of Railway Eva Rezlerová, Martin Jacura	KZ	2	2P+0C	L	PV
12Y1DS	Project Documentation in Practice	KZ	2	2P+0C	Z	PV
17Y1EV	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
15Y1EH	European Integration within Historical Context	KZ	2	2P+0C	Z	PV
18Y1EM	Experimental Methods in Mechanics Daniel Kytý 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	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	KZ	2	2P+0C	Z	PV
16Y1IS	Interactive simulators and simulations	KZ	2	2P+0C	L	PV
12Y1KN	Combined Transportation	KZ	2	2P+0C	Z	PV
12Y1KP	Communication and Promotion of Transport Projects Dagmar Ko árková, Ond ej Kubala	KZ	2	2P+0C	L	PV
20Y1KP	Comunication 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	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 Vladimír Socha, Lenka Hanáková Vladimír Socha	KZ	2	2P+0C	Z	PV
	Modeling Complex Assemblies and Models in Parametric	KZ	2	2P+0C	Z	PV
14Y1MP	Modeller	ĸΖ	<u> </u>	21 +00	2	· •

15Y1NE	German in the Economy and Society	KZ	2	2P+0C	Z	PV
21Y10H	Eva Rezlerová Airline Business and Operations	KZ	2	2P+0C	 Z	PV
	Peter Olexa, Eva Endrizalová Peter Olexa	KZ KZ				
23Y1OK	Protection of Critical Objects and Infrastructures Fare Collection and Information Systems		2	2P+0C	L	PV
20Y1OI	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
17Y10F	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 Olga Vraštilová (Gar.)	KZ	2	2P+0C	Z	PV
17Y1PM	Personnel Management	KZ	2	2P+0C	L	PV
12Y1PC	Pedestrian and Cycling Transport	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 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 Pilmannová Terézia Pilmannová	KZ	2	2P+0C	Z	PV
12Y1PD	Assessment of Transport Structures	KZ	2	2P+0C	Z	PV
20Y1PK	Product Quality Management Processes	KZ	2	2P+0C	Z	PV
14Y1PJ	C Programming Language	KZ	2	2P+0C	Z	PV
12Y1C1	Designing Roads in Civil 3D I Tomáš Honc	KZ	2	2P+0C	L	PV
12Y1C2	Designing Roads in Civil 3D II	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 Mik, P emysl Toman	KZ	2	2P+0C	Z	PV
21Y1RZ	Human Resources Management	KZ	2	2P+0C	L	PV
17Y1ST	Titan Simulation	KZ	2	2P+0C	L	PV
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	KZ	2	2P+0C	L	PV
23Y1TP	Lucie Kárná Lucie Kárná Lucie Kárná (Gar.) 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	KZ	2	2P+0C	L	PV
14Y1UP	Tomáš T ma Editing of Theses in MS Word	KZ	2	2P+0C	L	PV
18Y1UK	Introduction of Rail Vehicles	KZ	2	2P+0C	L	PV
12Y1VR	Jitka ezní ková, Josef Kolá , Josef Kolá Josef Kolá (Gar.) Public Transport in Cities and Regions	KZ	2	2P+0C	Z	PV
23Y1VS	Vladimír Pušman Negotiation and Cooperation	KZ	2	2P+0C	Z	PV PV
201100			~	21 +00	4	ΓV

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-23/24 Name=Comp. Sel. Courses Bachelor Full-Time TET-LED from 2023/24

21Y1AM	Aeronautical Information Management (AIM)	KZ	2
Definition and basic over	rview of AIS and AIM. Transition from AIS to AIM. Regulatory base. Provision of AIS/AIM in the Czech Rep. AIP (Aeronautica	al Inf. Publication).	VFR Manual of
the Czech Rep. AIRAC	System. NOTAM messages. PIB (Pre-flight Informtion Bulletin). AIC (Aeoronautical Inf. Circulars). Aeronautical Charts. EAD (Europena AIS Da	tabase). QMS
(Quality Mng. System).	ADQ (Aeronautical Data Quality). AIXM (Aeronautical Inf. Exchnage Format).		
00Y1XB	Active participation in a scientific project, workshop, short-term trip abroad	KZ	2
20Y1AF	Alternative Forms of Transportation Project Financing	KZ	2
In will be specifed such	forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt p	ayments come fro	m its budget but
the final debtor is not a	direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of	securities as an a	Iternative source
of transportation and te	lecomunication projects.		
18Y1AM	Anatomy, Mobility and Safety of Man	KZ	2
Survey of tissues. Anato	mical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circulat	ion and nervous s	ystem. Structure
and biomechanics of m	uscular-skeletal system. Injury of human organs and musculo-skeletal system during traffic accidents. Mobility of ill and injure	ed man and his tre	eatment. Human
joint prostheses. Protec	tive means and traffic safety regulations.		
14Y1AV	Animation and Visualization	KZ	2
Advanced modifications	and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and	Space Warp obje	cts. Atmospheric
and other effects, rende	ring filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animatio	n using Inverse K	inematics.
12Y1AE	Applied Ecology	KZ	2
General ecology - ecolo	gical concepts and principles, ecosystem, ecological factors, energy flow through the ecosystem. Application of knowledge v	vithin EIA docume	entation. Special
ecology. Landscape eco	plogy - origin and historical development. Landscape definition and classification. Success. Traffic constructions in the country	vside. Landscape	and nature
protection. Applied ecol	ogy.		
20Y1AE	Applied Electronics	KZ	2
Basic electronic semico	nductor components, their principles, characteristics and typical connection diagrams. Semiconductor PN junction diodes, tra	ansistors, thyristor	, operational
amplifiers, basic logic g	ates. Functions of basic electronic circuits and methods for their designs (rectifiers, voltage regulator with Zener diode, transi	stor as an amplifi	er, operational
amplifier as an inverting	and noninverting amplifier).		
14Y1BE	Barrierless Transport	KZ	2
The issue of barrierless	accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Stude	nts will gain theor	etical knowledge
of barrierless environme	ent roads, railway stations, public transport stops, terminal buildings, vehicles, public transport, information and orientation syste	ems and transport	ation technology.
	will be supplemented by practical examples.		
15Y1BO	Work Safety and Health Protection in Transportation	KZ	2
Fundamental legislative	, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation	. Health protection	n programmes,
health insurance of hom	e and foreign business trips, statistics, working practice.		
11Y1BK	Error Detection Codes for Interlocking Systems	KZ	2
Safe communication an	d methods for its assuring. Safety codes linear codes, cyclic codes, BCH codes, Reed-Solomon codes. Transmission channels	s, detection of trar	smission errors,
probability of undetecte	d error. Design and assessment of detection codes; requirements of the European standard EN 50159.		
21Y1BS	Unmanned aircraft systems 1	KZ	2
Unmanned Aviation Dev	velopment. Aircraft design. Legislation in force in the Czech Republic. Planning and execution of the flight. Airspace division.	Operational risks	and operational
procedures. Practical fli	ghts.		
14Y1BM	Biometric Methods	KZ	2
Basic biometric terms, a	uthentication methods, principles and performance measurement of biometric systems, overview of biometric technologies,	hand geometry, ir	is recognition,
retina recognition metho	od, 2D and 3D face recognition, vein patterns on the wrist, ear biometrics, fingerprint recognition, skin spectroscopy, behavio	ral methods, the u	use of biometrics
in transport applications	s, safety and risks of biometric technologies.		
15Y1DZ	History of Railway	KZ	2
Horse-drawn railways, s	team railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Re	public", electric tr	action, World
	levelopment in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train conn		
railway accidents, railwa	ay junctions. Excursions and projections.		
12Y1DS	Project Documentation in Practice	KZ	2
Project documentation	creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining proces		cing. Practical
creation of some projec	t documentation parts.		
17Y1EV	Public Sector Economy	KZ	2
	theory of public sector, public choice theory, externalites, decisions about public finance allocation, economic assesment of		BA, MCA, CEA),
tax system of the CR, st	ate budget, management of public projects a their economic efficiency assessment, way of elaboration of PPP projects, fundin	g from EU funds, j	program HDM-4.

23Y1EH Electronics and hardware in security of transportation	KZ	2
Types and parameters of signals. Passive circuits, properties, basic measurements. Passive filters, semiconductors. Operational amplifiers, basic cir	1	
Power supplies. Logic circuits. AD converters. Connection of analog and digital parts. Basic blocks of digital signal processing. Measurement processir	-	
in electronics.	0 0	
20Y1EK Qualification in Electrical Engineering	KZ	2
Practical experience with measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock haza	1	1
voltage, maximum allowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legis	-	-
in relation to health and safety and electrical engineering.		-
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	ergy. Combustion e	engine, electric
drive, steam engine, air engine. Energy accumulation means, accumulator, flywheel, fuel cell. Energy recuperation. WTW analysis.		-
20Y1EA Environmental Aspects of Transport	KZ	2
State of the atmosphere, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabil	listic forecasts, for	ecast evaluation.
Air quality, main pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transp	portation in climate	e change.
15Y1EH European Integration within Historical Context	KZ	2
Versailles system, formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism	n. Little Entente, it:	s principles and
goals. Europe after Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war an	d its consequence	es for Europe.
New quality of French-German relationship - a driving power of starting European integration.		
18Y1EM Experimental Methods in Mechanics	KZ	2
The purpose and role of experimental mechanics. Sensors for mechanical testing. Overview of experimental methods. Destructive and non-destruct	tive testing of mate	erials. Design of
experimental procedures and sample preparation. Tensile and bending tests. Electrical resistance strain gages. Optical based strain measurement.	Fatigue and lifetim	ne prediction.
Instrumented hardness testing. Introduction to electron microscopy. Errors in measurement.		
15Y1FD French Area Studies and Transportation	KZ	2
France - geography and regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air tr	raffic, specialised f	terminology.
French society and culture. Current political system. System of education, studying in France. Selected authors of French literature. French gastronomic	omy.	
14Y1HW Computer Hardware	KZ	2
Computer architecture, 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 units, I/O subsystem.		
15Y1HL History of Civil Aviation	KZ	2
Beginnings of flying, development of aircrafts lighter than air. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development	1	Zzech Republic.
World airports. Famous aviators. Helicopters. CSA airplanes. Development of aircrafts in Czechoslovakia between the years 1945-1989. Classic era	of aviation. Golde	en era of civil
aviation. Modern era of civil aviation. Airline companies. Supersonic flying.		
15Y1HD History of City Mass Transport	KZ	2
History of city mass transport in the world, development of tram, bus and trolley-bus systems. History of transport networks in the world, current trer	nds and developm	ents of tariff and
clearance systems. History 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, basic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regula	1	oustic climate in
area, principles 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.		
15Y1HE Work Hygiene and Ergonomics in Traffic	KZ	2
Basic knowledge of occupational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of thes	se factors on healt	h of workers.
Creation and protection of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technology to	to possibilities and	skills of a man.
Practical examples from the field of transportation; relevant legislature.		
16Y1IS Interactive simulators and simulations	KZ	2
Simulation theory and application of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical n	1	methods.
Simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simu	ulators.	
12Y1KN Combined Transportation	KZ	2
Combined transport strategy and legislation. Load units. Means of transport in combined transport. Combined transport systems. Transshipping area	1	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	1	. – .
networks and beyond. Communication strategy of transport projects. Systematic goodwill building. Crisis situations in communication and preparation		
influence of political marketing and political PR on transport projects. Lobbing.		
20Y1KP Communication and presentation skills	KZ	2
Motivation, priorities and their fulfillment, current communication networks, work with various sources, formal requirements of emails and final these	1	1
teamwork, emotional intelligence, manipulation and way of working with it, coping with stressful situations, formal requirements of presentations, wa		
presentation, presentation skills, presentation skills in online environment.		Ū.
23Y1KM Crisis Management	KZ	2
Theory and legal frame of crisis management with direction to Rescue system (IZS). After introduction to safety domain, there are terms and knowled	1	
management and its targets; IZS-crisis management-crisis planning; and basic legislation. Practical part is concentrated to responsibility matrix corr	-	
23Y1KO Quantum Physics and Optoelectronics	KZ	2
Ground of quantum physics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics components.		
23Y1KY Cybernality	KZ	2
Juridical aspects of behavior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism	1	
23Y1KB Cyber security in transportation	KZ	2
Basic concepts of security and cyber security, legal status in the field of cyber security, virtual cyberspace and communities, taxonomy of crimes in	1	
engineering, cyber attack technology, information security, cyber attacks on telematics systems, security of systems with artificial intelligence, normal		
21Y1LJ Aeronautical Radio and Flight Instruments	KZ	2
Basic definitions, history of aircraft instrumentation, aerometric instrumentation, Earth magnetism, aircraft electric equipment, gyroscopic instrumentation	1	
other aircraft equipment, engine instrumentation, warning and recording systems, instrumentation operational requirements, radiocommunication ar		
	KZ	. 2
21Y1LS Air Traffic Services	1	1
Airspace structure in Czech Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, at USA and Czechoslovakia. ATS - Model of financing. Training System of Air Traffic Controllers. Future development of ATS		JI. THISTOLY ULATS
at USA and Czechoslovakia. ATS - Model of financing. Training System of Air Traffic Controllers. Future development of ATS.		

17Y1LL Logistics of Passenger and Freight Air Transport	KZ	2
Logistics airline passenger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial t	ransport process	passengers and
air cargo. Information systems in air transport. Global distribution systems.		
20Y1LN Location and Navigation	KZ	2
Description and examples of road networks, localization on the network. Routing algorithms, their properties and implementation. Description and ex	camples of datase	ets for finding
transport connections, routing algorithms, their properties and implementation.	KZ	2
23Y1MK Crisis Situation Management in Critical Infrastructure Determination of critical infrastructute elements on all levels, their protection systems, responsibilities of particular agencies of the state administration	1	_
their responsibilities to anounce particular safety provisions. Physical and cyber protection of critical infrastructure with special attention to the soft ta	-	werninent, and
23Y1MU Emergency Events Management Solution in Transport Infrastructure	KZ	2
Basic solutions of emergency events with emphasis of the transport infrastructure events and their solution management. Knowledge in the emergence		
in liquidation work within the transport infrastructure.		
17Y1MD Marketing in Transportation	KZ	2
General principles of marketing applied to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transpo	rt and the resultin	g differences in
the application of marketing.		
18Y1MT Engineering Materials	KZ	2
Systematic overview of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers	-	attention is paid
to biological materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's selection 21Y1MP Matlab for project-oriented study		2
21Y1MP Matlab for project-oriented study The subject's syllabus is focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exerci	KZ	_
particular examples, based on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improven		-
14Y1MP Modeling Complex Assemblies and Models in Parametric Modeller	KZ	2
Assemblies programming - tools and methodology of working subassemblies and assemblies, sheet metal parts modelling, welded assemblies, pipe		
Photorealistic output rendering - physical and material properties, lighting sources. MKP - visual example.		
15Y1MK Modern History in Context: Every Day Life and Transport	KZ	2
Historical overview of modern history of every day life, science, technology and transport in a wider context.		
15Y1NE German in the Economy and Society	KZ	2
Recent economic and social issues of German speaking countries and of the EU. Reading and listening of texts. Lexical, grammatical and semantic	analysis of texts.	Discussion on
selected topics.		
21Y1OH Airline Business and Operations	KZ	2
The course provides a comprehensive view of the commercial, operational and transportation activities of air transport companies. It focuses on the organized experimentation of the companies and the companies and the companies of the companies		-
various aspects of their strategy, economic and operational indicators. It introduces students in detail to operational processes and the essentials of tra a basic view of the economic aspects of air transport.	insponation proce	esses. It provides
23Y1OK Protection of Critical Objects and Infrastructures	KZ	2
Types of technological systems, critical item, risks and their courses, criticality, vulnerability, connectivity, dependability, resilience, failure, protection, s	1	_
infrastructures.		jooto and onloar
20Y10I Fare Collection and Information Systems	KZ	2
Fare collection systems in public transport and their components (on-board units, validators, turnstiles,). Information systems and their component	ts for users (timet	ables, maps,
panels) and operators (cycles, location or current delay of vehicles,). The issue of tariff systems. Other examples of clearance systems (parking	ı).	
14Y1OJ Object - oriented programming in JAVA	KZ	2
Objective thinking. Encapsulation. Classes. Attributes. Access modifiers. Methods and overloading. Special methods (constructors, getters / setters)	-	
data types. Inheritance. Polymorphism. Statics, constants, interfaces, abstract classes, enum, packages, exceptions, collections, generics, lambda e		
14Y1OP Operating System	KZ	2
Distributions. Installation GNU/Linux OS. X-window system. Rights management - users and groups, ACL rights. Filesystems and attributes. Program runlevels. Basic console programs / commands. Config files. SW management, package systems. Programs in graphic shell - text, spreadsheet, gra	-	
communication. Services management. Safe and secure configuration of OS. Remote administration.		
17Y1OF Personal Finance	KZ	2
Personal finance (budget, financing of basic living needs), debt (loans and credits, payment instruments, interest and fees, debt trap), financing of he	1 1	
consumer loans, refinancing), savings and investments (investment horizon, return, risk, investment strategy), insurance (insurance types, suitability a		
(retirement savings and insurance).		
20Y1OK Road Lighting	KZ	2
Basic lighting quantities and terms, street lighting components (luminaires, control cabinets for street lighting, street lighting cables), characteristics of l	uminaires (lifetime	of light sources,
light distribution), standards, measurement of illuminance and luminance in road lighting, tunnels, conceptual approach to street lighting design, ligh	ting calculations in	n DIALux and
Relux, street lighting control systems.		
11Y1PV Parametrical and Multicriterial Programming	KZ	2
Solution to the problem of linear programming with a parameter in objective function, on right sides and in the matrix of coeficients of linear constraints		
17Y1PM Personnel Management Human sources, work group, man as personality, planning, choice, evaluation and education of human sources, work adaptation, teamwork, intercul	KZ	2
12Y1PC Pedestrian and Cycling Transport	KZ	2
Routes for pedestrians. Pedestrian crossings. Modifications for blind, dim-sighted and disabled people. Design of cycle routes network. Ways of cycle routes network.	1 1	
for cyclists. Separation of cyclists from other transport modes. Cycle tracks and its design - one way streets, reserved traffic lanes, bus stops, crossin	-	
crossroads. Traffic signs and road marking for cyclists.		,
14Y1PG Computer Graphics	KZ	2
Basic formats of graphic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with ec		
level scope) using layers, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics cards.		
14Y1P2 Computer Aid of Transportation Projecting 2	KZ	2
Overview of CAx application for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting,		
modification (attributes, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic trans	sition curve, cross-	and longitudinal
section). Basics of 3D modelling.		

18Y1PS Computer Simulations in Mechanics	KZ	2
Principles and overview of tools for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model develo from other CAE systems. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary condition		• ,
tasks of structural and modal analysis. Introduction to complex nonlinear problems.	s and application o	n the load. Dasie
14Y1PI Corporate Information System	KZ	2
Data-information-knowledge, components of information system, syntatic and semantic sense of data, structure of corporate information system, p	articular informatio	n system
(personalistic, production, storage, etc.), corporate information politic and information control, risks of information system operation, legal environment	ent of information s	ystem operation,
state information system, information system security, data protection, safety politics.		
14Y1PZ Advanced Data Processing in Spreadsheets	KZ	2
Students will be familiar with principles of working in a spreadsheet. Graphic layout of the table appearance, formatting of numbers, insertion of form		-
addressing, error detection. Working with large spreadsheets, filters, advanced filters, database functions. Pivot tables and charts, conditional formatt	ing, solution finding	, solver, macros,
data analysis. Examples and questions from various companies and training.	1/7	2
21Y1PC ATC Procedures and Activities Air traffic control procedures, basics of communication and phraseology, aircraft identification, spacing and traffic coordination. In addition, the court	KZ	2
the airports and low visibility operational procedures. Students will during the course learn basic safety management applications applied across th		and control at
12Y1PD Assessment of Transport Structures	KZ	2
Assessment of transport structures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibilit	1	
transport structures on the landscape. Rating fragmentation and landscape connectivity in the preparation of linear structures. Practical examples of	-	
the environment.		0
20Y1PK Product Quality Management Processes	KZ	2
General principles of organization management. Management systems and international standards; quality management systems. Quality products	, processes, syster	ms. A framework
of standards for systems management, management principles. Principles of process management, monitoring and measurement systems management	ent. Uniform framev	vork of standards
for systems management. Process management principles. Metrology and testing. Product certification.		
14Y1PJ C Programming Language	KZ	2
C programming language. Preprocessor, basics of the C language (data types, syntax, commands), functions, pointes, dynamical memory allocation	, string, files, struct	ures and unions.
Implementations of abstract data types (FIFO, LIFO, list), programming techniques (sorting, searching, recursion), using bitwise oprerators.		
12Y1C1 Designing Roads in Civil 3D I	KZ	2
The course is devoted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go thro		-
particular linear building, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. T	The course also inc	cludes a basic
explanation of the traffic building design in the real-life profession.	1/7	0
12Y1C2 Designing Roads in Civil 3D II The course is devoted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go thro	KZ	2
particular linear building, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation.		-
improved and developed. Students learn to design intersections.	no providuoly doqu	
14Y1PA 3D Modeling in AutoCAD	KZ	2
Work in 3D non-parametric modeller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup creation, obj	1	-
connected with external database. Basic definition of work with lights, materials and reflexes. Models presentation.	, -	
16Y1PV Operation, Construction and Maintenance of Vehicles	KZ	2
Methods of vehicle production. Vehicle maintenance. Vehicle diagnostics. Maintenence and repair plans. Engine maintenance and emission measu		on mechanism.
General principles of engine diagnostics.		
12Y1PU Organization Disposition of Railway Stations	KZ	2
Connecting station. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. 2		nation yards.
Reserve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic railway	network.	
12Y1RU Railway Lines Reconstruction	KZ	2
Keeping railway line operational, maintaining lines and stations, geometrical alignment of railway line, vehicles for railway superstructure and subst	ructure maintenanc	ce, scheduling
and organising possesions, preparation of railway lines reconstruction and maintenance, process of ralway line reconstruction.		
16Y1RE Control and Electronic Vehicle Systems	KZ	2
Elementary concepts of regulation. Tools for analytical solution, linear system description. Basic types of a regulator (PID), properties, advantages, dis	-	
and hybrid drive control. Electric drive. Vehicle communication bus (CAN, LIN, FlexRay, ISObus, KWP2000 protocole etc.). Vehicle electronic contro comfort systems.	n, salety, communic	cation and
21Y1RZ Human Resources Management	KZ	2
The position of human resources in the organization and related disciplines file. Substance, importance and challenges of human resources management		
environment of human resource management. Human resource planning. Search, recruitment and selection of employees. Motivation, evaluation an	5	
dismissal and redundancies of employees. Education of employees. Planning career management.		0,
17Y1ST Titan Simulation	KZ	2
Titan is a management game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same produce	1 1	1
determine the quantity and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequence	ences of their decis	sions by the form
of financial corporate reports and they use this information for other business decisions.		
21Y1SI ATC Simulator	KZ	2
Familiarization with the simulation environment, acquiring basic habits, aircraft identification procedures, vectoring, level changes, ATC clearance, u	-	
exercises focusing on basic vectoring, early application of vertical separation, EST and REV message passing. Practical exercises in the APPROA	CH area, practicing	g arrival and
departure management procedures, conflict resolution.		
20Y1SC Sensors and Actuators	KZ	2
Principles of sensors and actuators. Basics of measuring theory and actuating influence. The respective technologies and construction principles. Sensors	ors of mechanical, e	electro-magnetic,
state (temperature, humidity), chemical and particle flow values. Electrical, pneumatic and hydraulic actuators and solid phase elements.	1/7	2
17Y1SL Sociology of Human Resources Human resources and their importance, work group as a special kind of social group, communication, personal management, modern management,	KZ	2
of the organization.	numan resources	Planning, culture
11Y1SI Transportation Software Engineering	KZ	2
Basic concepts of software engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and impl	1	1
and practical usuage.		

16Y1KS Quality and Reliability of Vehicles		
	KZ	2
Quality and reliability theory in design, development, production and operation of vehicles. Definition and possible approach to quality and reliab	ility. Key legislation. FN	MEA (Failure
Mode and Effects Analysis), QFD (Quality Function Deployment), DFx (Design for Assamly, Manufacturying, Quality, Services) and other met	thods used in industria	l applications.
Knowledge-based systems of quality and reliability, data collection.		
	1/7	
12Y1SU Road Management and Maintenance	KZ	2
Getting familiar with ownership of roads in the Czech Republic and the administration of the road at the state and county level. It is presented de	evelopment of road net	work, short,
medium and long-term strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities ar	nd repair methods are	discussed in the
classroom as well as investment activity in highway engineering.		
		-
16Y1SO Strategy and innovation in mobility	KZ	2
Introduction to innovation, definition. Innovation strategy. Innovation life cycle and ecosystem, main sources and funding opportunities. Successf	ul innovation project,	(Pls, budget;
co-financing, evaluation. Sprint method and its use. Innovative business model - main patterns and examples, design, strategy, processes and o	utlook (business plan	and possibilities
of use). Creating an innovation strategy. Customer and value map, design and testing.		
17Y1SK Urban and Regional Rail Transport Systems	KZ	2
Factors affecting transport demand, modal-split, distribution of passenger flows on public regional transport lines. Optimization of line managem	ent. line networking. C	reating and
	-	-
evaluation of the timetable. Vehicle circulation creation. Optimizing driver shifts and arranging them in turnus. Effects of barrier-free and public tra	ansport preierences. I	ne role ol
marketing.		
11Y1TG Graph Theory	KZ	2
Basic concepts and terminology of graph theory, graph representation. Problems of graph theory, problem instance. Graph search algorithms, tr	1 1	a tree shortest
	-	-
path problem, Eulerian path, bipartite graph matching, flow networks, circulations, critical path method, traveling salesman problem. Problem of exist	stence and optimization	n and algorithms
for their solving. Computational complexity, dealing with NP-complete problems, heuristic approach.		
23Y1TP Criminal Law in IT and Transportation	KZ	2
	1 1	
Introduction of criminal law into legal order, conception of culpability and criminal delict, consequency of other legal standards. international trea	ity and criminal law, inv	vestigation of
crime, specific indicia of criminal court cases, practical examples.		
	KZ	2
	1 1	_
Possibilities of scripting language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solution	ons. Your own applicati	ion programmed
in PHP language.		
	1/7	
21Y1UL Aircraft Maintenance	KZ	2
Aircraft operations and technical operations. Maintenance and work processes. Defects search methods, status check diagnostic tools. Selection	and qualification of avi	ation personnel.
Basic documentation for maintenance. Optimization of time maintenance intervals. Regulation no. 1321/2014 Part 145. Human factors of aircraft	t maintenance. Regula	tion of director
EASA for aircraft maintenance. Seminars will be focused on practical application.		
14Y1UP Editing of Theses in MS Word	KZ	2
Students will be introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles	create tables of conte	ents lists of
figures, tables, graphs, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for sean	niess ealling dissertau	ons and theses,
so that they are able to concentrate mainly on writing a thesis.		
18Y1UK Introduction of Rail Vehicles	KZ	2
	1 1	
Basic characteristics and parameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of mo		- 1
track resistance. Total running resistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail v	ehicle - hydromechani	c, hydrodynamic
and electric drive. Design concept rail vehicles and drive of wheel set.		
	V7	
12Y1VR Public Transport in Cities and Regions	KZ	2
12Y1VR Public Transport in Cities and Regions Professional and political pillars of public transport. Accessibility of public transport. Transport demand management and directional coordination	1 1	
Professional and political pillars of public transport. Accessibility of public transport. Transport demand management and directional coordination	n of lines. Principles of	line tracing.
Professional and political pillars of public transport. Accessibility of public transport. Transport demand management and directional coordination Basic operating parameters and transport variations. Types of lines according to their routing and basic operating parameters. Time coordination	n of lines. Principles of	line tracing.
Professional and political pillars of public transport. Accessibility of public transport. Transport demand management and directional coordination Basic operating parameters and transport variations. Types of lines according to their routing and basic operating parameters. Time coordination Organization of tram operation in Prague. Tram safety.	n of lines. Principles of n of lines. Operational t	line tracing. traffic control.
Professional and political pillars of public transport. Accessibility of public transport. Transport demand management and directional coordination Basic operating parameters and transport variations. Types of lines according to their routing and basic operating parameters. Time coordination	n of lines. Principles of	line tracing.
Professional and political pillars of public transport. Accessibility of public transport. Transport demand management and directional coordination Basic operating parameters and transport variations. Types of lines according to their routing and basic operating parameters. Time coordination Organization of tram operation in Prague. Tram safety. 23Y1VS Negotiation and Cooperation	n of lines. Principles of n of lines. Operational t	line tracing. traffic control. 2
Professional and political pillars of public transport. Accessibility of public transport. Transport demand management and directional coordination Basic operating parameters and transport variations. Types of lines according to their routing and basic operating parameters. Time coordination Organization of tram operation in Prague. Tram safety. 23Y1VS Negotiation and Cooperation Code of conduct for negotiation. The influence of personality traits on the negotiations. Negotiation and commanding. Teamwork. Variants teams	n of lines. Principles of n of lines. Operational t KZ . Informal and formal r	line tracing. traffic control. 2 ole in the team.
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14Y1ZJ	Fundamentals of programming in JAVA	KZ	2
Introduction to the Java	SE Platform. IDE Installation and First Project. Comments. Variables and Type System. Operators. User Input and Parsing. C	hain and Chain C	Conversion. Text
Chain and Mathematica	I Methods. Terms. Relational Operators and Switches. Cycles for, while, foreach. Field - declaration, initialization, methods fo	r field work. ASCI	I. Functions,
parameters, return value	e, recursion. Program creation.		
12Y1ZU	Principles of Urbanism	KZ	2
Survey on history of city	and settlement building. Functional components and their mutual relations (working, living, recreation, transportation). Space	ial arrangement o	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. Milestones and con	tinuity of the interi	national relations
in the end of 19th centu	ry and the beginning of the 20th century. Revolutions, the causes and consequences. Scientific and technological progress, i	the causes and co	onsequences.
Economic and financial	history. Social changes. Discussions on texts, sources.		
16Y1ZL	Vehicle Testing, Legislation and Construction	KZ	2
Vehicle, bus and motorb	ke costruction, aggregate computing, driving resistance, build and parameters of traction, constructional arrangement of persor	hal cars, trucks, bι	ises, motorbikes,
legislation in the EU and	I in the world, technical legislation creation, testing methods, vehicle tests, accelerated tests, mathematical modelling in testi	ing.	

Name of the block: Elective courses Minimal number of credits of the block: 0 The role of the block: V

Code of the group: VP-BP-TET-20/21 Name of the group: Bachelor Full-Time TET 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
14DPK	Digital Support for Designing of Roads and Highways Libor Žídek, Drahomír Schmidt Drahomír Schmidt (Gar.)	Z	0	0P+2C	Z	V
14DZT	Digital Support for Railway Lines Martin Brumovský 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

Characteristics of the courses of this group of Study Plan: Code=VP-BP-TET-20/21 Name=Bachelor Full-Time TET voluntary

14DPK	Digital Support for Designing of Roads and Highways	Z	0
Seminars possibilities of	f technical processing problems focused on designing of roads and highways.		
14DZT	Digital Support for Railway Lines	Z	0
Seminars possibilities of	f technical processing problems solved in the field of railway lines.		
11SCFZ	Seminar of Physics	Z	0
Solving problems on kir	nematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermodynamics.		
21SLD	Seminar of Air Transport	Z	0
History, definitions, tern	inology, basic rules. VFR / IFR. Basics of aerodynamics. Propulsion of aircraft. Aircraft design. Basics of navigation, radio nav	vigation. Weight, I	balance,
performance. Flight plan	nning, optimization of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic m	nanagement, grou	und handling,
security. Air crew. Airline	es and economics. Space technologies.		
18SPP	Seminary from Elasticity and Strength	Z	0
Excersise for practice. T	ension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of be	am. Analysis of c	deflection curve
of beam. Torsion of circ	e cross section. Combined loading. Stability of compressed bar and buckling.		
18STD	Seminary from Technical Documentation	Z	0
Technical standards, inf	ernational standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimension	al and geometric	al accuracy,
arrangement of drawing	sheets.		
18SS	Seminary from Structural Analysis	Z	0
Examples for practise.	Seneral system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam a	and simple frame	work. Application
of principle of virtual wo	rks for calculation of reactions of staticaly determinate systems. Determination of axial forces in truss construction - method of	of joints and meth	nod of sections.
Geometry of cross sect	ions. Plane fiber polygons		

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

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 Old ich Hykš, Zuzana Malá, Tomáš Vít Zuzana Malá Zuzana Malá (Gar.)	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 ele	ectric and magnetic field, electromagnetic field, optics and basics of solid-state physics.		

List of courses of this pass:

Code	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
	humbers and its limit. Basic properties of mappings. Function of one real variable, its limit and derivative. Indefinite integral, Newton in		al, imprope
	Riemann integral. First-order differential equations, linear differential equations.		
11CAL2	Calculus 2	Z,ZK	5
Line	a' adifferential equations and their systems, differential calculus of functions of several real variables. Riemann integral in Rn. Line a	nd 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.		1
11FYZ	Physics	Z,ZK	5
	Kinematics, dynamics, Newton's laws, force fields, mechanics of continuum, thermodynamics, introduction to electrostatics and e		-
11GIE	Geometry	KZ	3
Differential geom	erry of curves - parameterization, the arc of the curve, torsion and curvature, Frenet`s trihedron. Kinematics - a curve as a trajecto	ry of the motion, the v	elocity, and
	acceleration of a particle moving on a curved path.		
11LA	Linear Algebra	Z,ZK	3
Vector spaces (lir	ear combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and	their solvability. Deterr	minants and
	their applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classifi	cation.	
11MSP	Modeling of Systems and Processes	Z,ZK	4
System and subsy	stem, external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of dif	ferential and differentia	al equations
Linear and no	nlinear system, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer fun	ction. Stability of LTI s	systems.
	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, therm	-	
	Seminar of Electromagnetic Field and Optics	Z	0
11SEMO	Commar of Elocation agricult i ford and Optico	L 2	
11SEMO	Solving problems on electric and magnetic field, electromagnetic field, optics and basics of solid-state physics.	Z	1
11SEMO 11SSF	0	Z	0
	Solving problems on electric and magnetic field, electromagnetic field, optics and basics of solid-state physics.		0
	Solving problems on electric and magnetic field, electromagnetic field, optics and basics of solid-state physics. Secondary School Physics Course		0
11SSF 11STAT	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.	Z Z,ZK	4
11SSF 11STAT	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 Statistics	Z Z,ZK	4
11SSF 11STAT	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 ility Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Para	Z Z,ZK metric tests Nonparan	4
11SSF 11STAT Basics of probat	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 ility Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Para Regression and correlation analysis	Z Z,ZK Metric tests Nonparan	4 netric tests
11SSF 11STAT Basics of probat 11X31L	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 ility Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Para Regression and correlation analysis Project 1 LED Project 2 LED	Z Z,ZK metric tests Nonparan	4 netric tests 2
11SSF 11STAT Basics of probat 11X31L 11X32L 11X33L	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 ility Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Para Regression and correlation analysis Project 1 LED Project 2 LED Project 3 LED	Z,ZK metric tests Nonparan Z Z Z	4 netric tests 2 2 2
11SSF 11STAT Basics of probat 11X31L 11X32L 11X33L 11Y1BK	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 ility Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Para Regression and correlation analysis Project 1 LED Project 2 LED	Z,ZK metric tests Nonparan Z Z Z KZ	4 netric tests 2 2 2 2 2
11SSF 11STAT Basics of probat 11X31L 11X32L 11X33L 11Y1BK	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 ility Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Para Regression and correlation analysis Project 1 LED Project 2 LED Project 3 LED Error Detection Codes for Interlocking Systems	Z,ZK metric tests Nonparan Z Z Z KZ s, detection of transmis	4 netric tests 2 2 2 2 2
11SSF 11STAT Basics of probat 11X31L 11X32L 11X33L 11Y1BK	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 ility Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Para Regression and correlation analysis Project 1 LED Project 2 LED Project 3 LED Error Detection Codes for Interlocking Systems on and methods for its assuring. Safety codes linear codes, cyclic codes, BCH codes, Reed-Solomon codes. Transmission channels	Z,ZK metric tests Nonparan Z Z Z KZ s, detection of transmis	4 netric tests 2 2 2 2 2

11Y1SI Basic concepts of soft	Transportation Software Engineering	KZ	2
	ware engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and implement		1
	and practical usuage.		
11Y1TG	Graph Theory	KZ	2
-	erminology of graph theory, graph representation. Problems of graph theory, problem instance. Graph search algorithms, trees, mini n path, bipartite graph matching, flow networks, circulations, critical path method, traveling salesman problem. Problem of existence an		
	for their solving. Computational complexity, dealing with NP-complete problems, heuristic approach.		-
11Y1ZM	Foundation of MATLAB Programming	KZ	2
o explain the princip	e of algorithmization, flow charts, description of MATLAB environment and its settings, MATLAB help, mathematical operators, matri control flow, inputs and outputs, graphics, optimization and program code debugging.	ces and element	s operations
12MDE	Transport Models and Transport Excesses	Z,ZK	3
	ffic flow and methods for their measurement. Models of the traffic flow, communications load, line and urban systems. Theory of que essment. Statistical characteristics of transport. Transport excesses, their analysis, the causes, identify and minimize the conseque safety and fluency.		-
400001/		KZ	
12PPOK	Designing Roads, Highways and Motorways		3
	nership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard opping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safety		
12X31L	intersections. Project 1 LED	Z	2
-	-		
12X32L	Project 2 LED	<u>Z</u>	2
12X33L	Project 3 LED	Z	2
12Y1AE	Applied Ecology	KZ	2
	blogical concepts and principles, ecosystem, ecological factors, energy flow through the ecosystem. Application of knowledge with e ecology - origin and historical development. Landscape definition and classification. Success. Traffic constructions in the countrysi protection. Applied ecology.		
12Y1C1	Designing Roads in Civil 3D I	KZ	2
-	ed to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through		
	ding, 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
1	ed to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through		
		-	-
particular intear built	ling, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The p improved and developed. Students learn to design intersections.	neviously acquire	eu skills ale
40)(400		1/7	0
12Y1DS	Project Documentation in Practice	KZ	2
Project documentati	on creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process. E	Budget and pricin	ig. Practical
	creation of some project documentation parts.		1
12Y1HD	Traffic Noise	KZ	2
Acoustic introduction	basic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regulations	. Creation acous	tic climate ir
area, principles of	urban acoustic, noise transmission, soundproofing. Types of noise sources in area. Determination of acoustic situation in the area of	of interest. Metho	dology of
	computing and measurement of transport noise. Acoustic studies, measuring protocol.		
12Y1KN	Combined Transportation	KZ	2
Combined transpor	strategy and legislation. Load units. Means of transport in combined transport. Combined transport systems. Transshipping areas.	Multimodal logist	tic centres.
12Y1KP	Communication and Promotion of Transport Projects	KZ	2
Fundamentals of Pu	blic Relations and the power of public opinion. Work and tasks of PR department and press spokesperson. Communication with the	e media, the publ	ic on social
networks and beyor	d. Communication strategy of transport projects. Systematic goodwill building. Crisis situations in communication and preparation for influence of political marketing and political PR on transport projects. Lobbing.	or crisis communi	ication. The
12Y1PC	Pedestrian and Cycling Transport	KZ	2
	s. Pedestrian crossings. Modifications for blind, dim-sighted and disabled people. Design of cycle routes network. Ways of cycle route		1
	on of cyclists from other transport modes. Cycle tracks and its design - one way streets, reserved traffic lanes, bus stops, crossings		-
			Joir moues,
	crossroads Traffic signs and road marking for cyclists		
	crossroads. Traffic signs and road marking for cyclists.		2
12Y1PD	Assessment of Transport Structures	KZ	2
12Y1PD	Assessment of Transport Structures ort structures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibilities of n the landscape. Rating fragmentation and landscape connectivity in the preparation of linear structures. Practical examples of asse	KZ	assessme
12Y1PD seessment of transp sansport structures c	Assessment of Transport Structures ort structures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibilities of n the landscape. Rating fragmentation and landscape connectivity in the preparation of linear structures. Practical examples of asse the environment.	KZ its protection and essment of traffic	buildings o
12Y1PD	Assessment of Transport Structures ort structures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibilities of in the landscape. Rating fragmentation and landscape connectivity in the preparation of linear structures. Practical examples of asse the environment. Organization Disposition of Railway Stations	KZ its protection and essment of traffic KZ	buildings o
12Y1PD Assessment of transp ransport structures of 12Y1PU Connecting station	Assessment of Transport Structures ort structures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibilities of n the landscape. Rating fragmentation and landscape connectivity in the preparation of linear structures. Practical examples of asse the environment. Organization Disposition of Railway Stations Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zone	KZ its protection and essment of traffic KZ e stations. Forma	buildings o
12Y1PD Assessment of transp ransport structures of 12Y1PU Connecting station. Reserve	Assessment of Transport Structures ort structures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibilities of in the landscape. Rating fragmentation and landscape connectivity in the preparation of linear structures. Practical examples of asse the environment. Organization Disposition of Railway Stations Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zone stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic	KZ its protection and essment of traffic KZ e stations. Forma railway network.	assessmer buildings o 2 tion yards.
12Y1PD	Assessment of Transport Structures ort structures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibilities of n the landscape. Rating fragmentation and landscape connectivity in the preparation of linear structures. Practical examples of asse the environment. Organization Disposition of Railway Stations Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zone	KZ its protection and essment of traffic KZ e stations. Forma	buildings o
12Y1PD assessment of transpransport structures of 12Y1PU Connecting station. Reserve 12Y1RU	Assessment of Transport Structures ort structures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibilities of in the landscape. Rating fragmentation and landscape connectivity in the preparation of linear structures. Practical examples of asse the environment. Organization Disposition of Railway Stations Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zone stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic Railway Lines Reconstruction operational, maintaining lines and stations, geometrical alignment of railway line, vehicles for railway superstructure and substructure	KZ its protection and assment of traffic KZ e stations. Forma railway network. KZ ire maintenance,	assessmer buildings o 2 tion yards.
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12Y1PD Assessment of transpransport structures of 12Y1PU Connecting station. Reserve 12Y1RU Keeping railway line 12Y1SU	Assessment of Transport Structures ort structures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibilities of in the landscape. Rating fragmentation and landscape connectivity in the preparation of linear structures. Practical examples of asse the environment. Organization Disposition of Railway Stations Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zone stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic Railway Lines Reconstruction operational, maintaining lines and stations, geometrical alignment of railway line, vehicles for railway superstructure and substructur and organising possesions, preparation of railway lines reconstruction and maintenance, process of ralway line reconstruction Road Management and Maintenance	KZ its protection and essment of traffic KZ e stations. Forma railway network. KZ ire maintenance, n. KZ	assessmer buildings of 2 tion yards. 2 scheduling 2
12Y1PD Assessment of transpransport structures of 12Y1PU Connecting station. Reserve 12Y1RU Keeping railway line 12Y1SU Getting familiar with	Assessment of Transport Structures ort structures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibilities of in the landscape. Rating fragmentation and landscape connectivity in the preparation of linear structures. Practical examples of asse the environment. Organization Disposition of Railway Stations Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zone stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic Railway Lines Reconstruction operational, maintaining lines and stations, geometrical alignment of railway line, vehicles for railway superstructure and substructur and organising possesions, preparation of railway lines reconstruction and maintenance, process of ralway line reconstruction Road Management and Maintenance	KZ its protection and essment of traffic KZ e stations. Forma railway network. KZ ire maintenance, n. KZ nent of road netw	assessmer buildings o 2 tion yards. 2 scheduling 2 vork, short,
12Y1PD Assessment of transp ransport structures of 12Y1PU Connecting station. Reserve 12Y1RU Keeping railway line 12Y1SU Getting familiar with	Assessment of Transport Structures ort structures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibilities of in the landscape. Rating fragmentation and landscape connectivity in the preparation of linear structures. Practical examples of asse the environment. Organization Disposition of Railway Stations Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zone stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic Railway Lines Reconstruction operational, maintaining lines and stations, geometrical alignment of railway line, vehicles for railway superstructure and substructur and organising possesions, preparation of railway lines reconstruction and maintenance, process of ralway line reconstruction Road Management and Maintenance ownership of roads in the Czech Republic and the administration of the road at the state and county level. It is presented developm in strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and repair	KZ its protection and essment of traffic KZ e stations. Forma railway network. KZ ire maintenance, n. KZ nent of road netw	assessmer buildings o 2 tion yards. 2 scheduling 2 vork, short,
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12Y1PD Assessment of transpransport structures of 12Y1PU Connecting station. Reserve 12Y1RU Keeping railway line 12Y1SU Getting familiar with nedium and long-terr 12Y1VR	Assessment of Transport Structures ort structures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibilities of in the landscape. Rating fragmentation and landscape connectivity in the preparation of linear structures. Practical examples of asse the environment. Organization Disposition of Railway Stations Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zone stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic Railway Lines Reconstruction operational, maintaining lines and stations, geometrical alignment of railway line, vehicles for railway superstructure and substructur and organising possesions, preparation of railway lines reconstruction and maintenance, process of ralway line reconstruction Road Management and Maintenance ownership of roads in the Czech Republic and the administration of the road at the state and county level. It is presented developm in strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and repair classroom as well as investment activity in highway engineering. Public Transport in Cities and Regions	KZ its protection and essment of traffic KZ e stations. Forma railway network. KZ irre maintenance, n. KZ nent of road netw methods are disc	assessmer buildings o 2 tion yards. 2 scheduling 2 vork, short, cussed in th 2
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12Y1PD Assessment of transpransport structures of 12Y1PU Connecting station. Reserve 12Y1PU Keeping railway line 12Y1SU Getting familiar with nedium and long-terr 12Y1VR Professional and por	Assessment of Transport Structures ort structures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibilities of in the landscape. Rating fragmentation and landscape connectivity in the preparation of linear structures. Practical examples of asse the environment. Organization Disposition of Railway Stations Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zone stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic Railway Lines Reconstruction operational, maintaining lines and stations, geometrical alignment of railway line, vehicles for railway superstructure and substructur and organising possesions, preparation of railway lines reconstruction and maintenance, process of ralway line reconstruction Road Management and Maintenance ownership of roads in the Czech Republic and the administration of the road at the state and county level. It is presented developm in strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and repair classroom as well as investment activity in highway engineering. Public Transport in Cities and Regions Nitical pillars of public transport. Accessibility of public transport. Transport demand management and directional coordination of line ameters and transport variations. Types of lines according to their routing and basic operating parameters. Time coordination of line ameters and transport variations. Types of lines according to their routing and basic operating parameters. Time coordination of line ameters and transport variations. Types of lines according to their routing and basic operating parameters. Time coordination of line	KZ its protection and essment of traffic KZ e stations. Forma railway network. KZ ure maintenance, n. KZ nent of road netw methods are disc KZ es. Principles of li	assessmer buildings o 2 tion yards. 2 scheduling 2 vork, short, cussed in th 2 ne tracing.
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12Y1PD Assessment of transp ransport structures of 12Y1PU Connecting station. Reserve 12Y1RU Keeping railway line 12Y1SU Getting familiar with nedium and long-terr 12Y1VR Professional and port	Assessment of Transport Structures ort structures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibilities of in the landscape. Rating fragmentation and landscape connectivity in the preparation of linear structures. Practical examples of asse the environment. Organization Disposition of Railway Stations Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zone stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic Railway Lines Reconstruction operational, maintaining lines and stations, geometrical alignment of railway line, vehicles for railway superstructure and substructur and organising possesions, preparation of railway lines reconstruction and maintenance, process of ralway line reconstruction Road Management and Maintenance ownership of roads in the Czech Republic and the administration of the road at the state and county level. It is presented developm in strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and repair classroom as well as investment activity in highway engineering. Public Transport in Cities and Regions Nitical pillars of public transport. Accessibility of public transport. Transport demand management and directional coordination of line ameters and transport variations. Types of lines according to their routing and basic operating parameters. Time coordination of line ameters and transport variations. Types of lines according to their routing and basic operating parameters. Time coordination of line ameters and transport variations. Types of lines according to their routing and basic operating parameters. Time coordination of line	KZ its protection and essment of traffic KZ e stations. Forma railway network. KZ ure maintenance, n. KZ nent of road netw methods are disc KZ es. Principles of li	assessmer buildings of 2 tion yards. 2 scheduling 2 vork, short, cussed in the 2 ne tracing.
12Y1PD Assessment of transpransport structures of 12Y1PU Connecting station. Reserver 12Y1RU Keeping railway line 12Y1SU Getting familiar with nedium and long-terr 12Y1VR Professional and por Basic operating para 12Y1ZU	Assessment of Transport Structures ort structures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibilities of in the landscape. Rating fragmentation and landscape connectivity in the preparation of linear structures. Practical examples of asse the environment. Organization Disposition of Railway Stations Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zone stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic Railway Lines Reconstruction operational, maintaining lines and stations, geometrical alignment of railway line, vehicles for railway superstructure and substructur and organising possesions, preparation of railway lines reconstruction and maintenance, process of ralway line reconstruction Road Management and Maintenance ownership of roads in the Czech Republic and the administration of the road at the state and county level. It is presented developm in strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and repair classroom as well as investment activity in highway engineering. Public Transport in Cities and Regions Mitical pillars of public transport. Accessibility of public transport. Transport demand management and directional coordination of lines areters and transport variations. Types of lines according to their routing and basic operating parameters. Time coordination of lines Organization of tram operation in Prague. Tram safety.	KZ its protection and essment of traffic KZ e stations. Forma railway network. KZ ure maintenance, n. KZ ment of road netw methods are disc KZ s. Principles of li s. Operational tra KZ	assessmer buildings o 2 tion yards. 2 scheduling 2 ork, short, cussed in th 2 ne tracing. ffic control.

			r
12ZTS	Railway Lines and Stations	Z,ZK	4
Rail transport. Ra	ailway track geometry parameters. Route layout of railway lines. Railway line construction - railway substructure and superstructure. S	Spatial layout of rai	lway lines.
	Railway control systems in relation to infrastructure. Operating and carriage points. Railway lines net and category. Traction in rail t	ransport.	
12ZYDI	Introduction to Transportation Engineering	Z,ZK	2
	ion in land-use planning. Basic terms in transportation engineering. Traffic survey and traffic prognosis. Introduction to topic of roads, p		1
	impacts of transportation to environment and safety.		g
14ASD		KZ	3
	Algorithm and Data Structures		1
-	rze problems, design a theoretical solution to a given problem and write the resulting algorithm using flowcharts, practice reading algorithm and the basics of the Ditting and the second		-
and use basic Boo	blean algebra to construct constraints in algorithms. Students will be introduced to the basics of the Python programming language - v	-	, loops, they
	will learn to work with variables of basic data types (integer, floating point and string) and the list data structure in their progra		
14DATS	Database Systems	KZ	2
Basic concepts of	of database systems, conceptual model, relational data model, the principles of normal forms, relational database design, security an	d integrity of data,	database
	queries, relational algebra, SQL language, client / server, multilayer architectures, distributed database systems. Access to data via	the WWW.	
14DPK	Digital Support for Designing of Roads and Highways	Z	0
	Seminars possibilities of technical processing problems focused on designing of roads and highways.	1	
14DZT	Digital Support for Railway Lines	Z	0
		2	
	Seminars possibilities of technical processing problems solved in the field of railway lines.	1/7	
14KSP	Constructing with Computer Aid	KZ	2
	rm determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic common wo		
and CA systems.	. Co-ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting possib	oilites, AutoCAD er	nvironment
	profiles, drawings with raster foundaments).		
14PGP	Program Resources	Z	2
Students will be rea	minded of some aspects of Pythom programming, learn basic concepts and constructs from object-oriented programming and their in	nplementation in F	ython. They
	try 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
	programming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python program	1	
-	articipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and searc		
l liele so that the pa		ming, tupies, sets,	ulcuonaries,
	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
14Y1AV	Animation and Visualization	KZ	2
	ations and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and Spa		-
	ts, rendering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animation	n using inverse Kir	iematics.
			-
14Y1BE	Barrierless Transport	KZ	2
	Barrierless Transport rless accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students		-
The issue of barrie		will gain theoretica	al knowledge
The issue of barrie	rless accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students	will gain theoretica	al knowledge
The issue of barries of barrierless enviro	rless accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students onment roads, railway stations, public transport stops, terminal buildings, vehicles, public transport, information and orientation systems	will gain theoretica	al knowledge
The issue of barries of barrierless enviro 14Y1BM	rless accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students onment roads, railway stations, public transport stops, terminal buildings, vehicles, public transport, information and orientation systems Theoretical knowledge will be supplemented by practical examples.	will gain theoretica and transportation	al knowledge n technology.
The issue of barrier of barrierless enviro 14Y1BM Basic biometric te	rless accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students onment roads, railway stations, public transport stops, terminal buildings, vehicles, public transport, information and orientation systems Theoretical knowledge will be supplemented by practical examples. Biometric Methods erms, authentication methods, principles and performance measurement of biometric systems, overview of biometric technologies, ha	will gain theoretica and transportation KZ and geometry, iris r	al knowledge a technology.
The issue of barrier of barrierless enviro 14Y1BM Basic biometric te	rless accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students onment roads, railway stations, public transport stops, terminal buildings, vehicles, public transport, information and orientation systems Theoretical knowledge will be supplemented by practical examples. Biometric Methods erms, authentication methods, principles and performance measurement of biometric systems, overview of biometric technologies, ha method, 2D and 3D face recognition, vein patterns on the wrist, ear biometrics, fingerprint recognition, skin spectroscopy, behavioral i	will gain theoretica and transportation KZ and geometry, iris r	al knowledge a technology.
The issue of barrier of barrierless enviro 14Y1BM Basic biometric te retina recognition r	rless accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students onment roads, railway stations, public transport stops, terminal buildings, vehicles, public transport, information and orientation systems Theoretical knowledge will be supplemented by practical examples. Biometric Methods erms, authentication methods, principles and performance measurement of biometric systems, overview of biometric technologies, ha method, 2D and 3D face recognition, vein patterns on the wrist, ear biometrics, fingerprint recognition, skin spectroscopy, behavioral i in transport applications, safety and risks of biometric technologies.	will gain theoretica and transportation KZ and geometry, iris r methods, the use o	al knowledge a technology. 2 ecognition, of biometrics
The issue of barrier of barrierless environ 14Y1BM Basic biometric te retina recognition r 14Y1HW	rless accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students onment roads, railway stations, public transport stops, terminal buildings, vehicles, public transport, information and orientation systems Theoretical knowledge will be supplemented by practical examples. Biometric Methods erms, authentication methods, principles and performance measurement of biometric systems, overview of biometric technologies, ha method, 2D and 3D face recognition, vein patterns on the wrist, ear biometrics, fingerprint recognition, skin spectroscopy, behavioral in transport applications, safety and risks of biometric technologies. Computer Hardware	will gain theoretica and transportation KZ and geometry, iris r methods, the use o KZ	al knowledge n technology. 2 recognition, of biometrics
The issue of barrier of barrierless environ 14Y1BM Basic biometric te retina recognition r 14Y1HW	rless accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students onment roads, railway stations, public transport stops, terminal buildings, vehicles, public transport, information and orientation systems Theoretical knowledge will be supplemented by practical examples. Biometric Methods erms, authentication methods, principles and performance measurement of biometric systems, overview of biometric technologies, ha method, 2D and 3D face recognition, vein patterns on the wrist, ear biometrics, fingerprint recognition, skin spectroscopy, behavioral in transport applications, safety and risks of biometric technologies. Computer Hardware ecture, basics of logical circuits design and their realization using FPGA. In detail, description of computer architecture and separate	will gain theoretica and transportation KZ and geometry, iris r methods, the use o KZ	al knowledge n technology. 2 recognition, of biometrics
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14Y1PJ	C Programming Language	KZ	2
C programming lar	nguage. Preprocessor, basics of the C language (data types, syntax, commands), functions, pointes, dynamical memory allocation, stri	1 1	
	Implementations of abstract data types (FIFO, LIFO, list), programming techniques (sorting, searching, recursion), using bitwise of	prerators.	
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 formu	1 1	
addressing, error d	letection. Working with large spreadsheets, filters, advanced filters, database functions. Pivot tables and charts, conditional formatting, s	solution finding, solv	ver, macros,
	data analysis. Examples and questions from various companies and training.		
14Y1TI	Creating Interactive Internet Applications	KZ	2
Possibilities of scri	pting language PHP Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions. You	r own application p	rogrammed
	in PHP language.		
14Y1UP	Editing of Theses in MS Word	KZ	2
	introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, creating and editing large documents and basic typographic rules.		
figures, tables, gra	phs, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless ec	diting dissertations	and theses,
	so that they are able to concentrate mainly on writing a thesis.		
14Y1VM	Development of Applications for Mobile Devices	KZ	2
Object oriented	programming, Java programming language, development environment, operating system Android, development application - widgets	, containers, thread	ds, menu,
	permissions, services, GUI.		
14Y1W1	Webdesign 1	KZ	2
	the basics of communication HTTP, URL and addressing, markup languages HTML and XHTML, HTML tags, rules of web accessibilit		
	s, the issue of web browsers, creating one to three column layout pages, sites validation, conditional comments. Topics will be practice		-
14Y1W2	Webdesign 2	KZ	2
Students will learn	advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, web set	rver installation + c	onfiguration
	directives. Topics will be practiced on practical examples.		
14Y1WG	Webdesign	KZ	2
Students will lear	rn the basics of HTTP communication, URL and addressing, HTML5 markup language, advanced CSS3 techniques, accessible and i		esponsive
	webdesign, content management systems, web server installation + configuration directives. The subject matter will be trained on e	examples.	
14Y1ZJ	Fundamentals of programming in JAVA	KZ	2
	e Java SE Platform. IDE Installation and First Project. Comments. Variables and Type System. Operators. User Input and Parsing. Cha		
Chain and Math	ematical Methods. Terms. Relational Operators and Switches. Cycles for, while, foreach. Field - declaration, initialization, methods for	field work. ASCII. F	unctions,
	parameters, return value, recursion. Program creation.		
14Y1ZM	Fundamentals of parametric and adaptive modeling	KZ	2
Basics of work at p	products and parts creation. Sketch drawing by help of geometric relations, parametric dimensions, creation of adaptive models from 2	2D sketches. Import	t and export
	from and to another systems. Fundamentals of assemblies creation.		
14ZDAL	Data processing in air transport	KZ	2
	a processing and analysis tools. Practical part of the training - introduction to the working environment, applied examples of data proce		e, advanced
	ods of presentation of the results. Seminar papers on open data. Consultation hours for seminar papers. Seminar paper submission a		-
15DPLG	Transportation Psychology	Z	2
Subject of psychol		turretiene Derrehenten	
, , , ,	ogy and its basic concepts. Information intake, decision-making and behaviour. Performance. Engineering psychology and vehicle cons	, ,	ical aspects
of trav	rel route and traffic conditions, accidents and traffic incidents. Selection and training of the staff. Work and leisure. Age as a factor in tr	ansport operation.	
of trav 15JL2A	el route and traffic conditions, accidents and traffic incidents. Selection and training of the staff. Work and leisure. Age as a factor in tr Foreign language - English 2 (for LED)	ansport operation.	2
of trav 15JL2A Grammar and tech	el route and traffic conditions, accidents and traffic incidents. Selection and training of the staff. Work and leisure. Age as a factor in tr Foreign language - English 2 (for LED) Inical vocabulary. Selection of conversation topics and professional topics based on students' level and their focus at Faculty of Transpo	ransport operation. KZ prtation Sciences. D	2 evelopment
of trav 15JL2A Grammar and tech of perceptive and	el route and traffic conditions, accidents and traffic incidents. Selection and training of the staff. Work and leisure. Age as a factor in tr Foreign language - English 2 (for LED) inical vocabulary. Selection of conversation topics and professional topics based on students' level and their focus at Faculty of Transpo d communication skills, ability to give feedback, summarization of a technical text, presentation structure, technical style and its usage	Ansport operation. KZ Dirtation Sciences. D e, language of man	2 evelopment agement.
of trav 15JL2A Grammar and tech of perceptive and 15JL3A	el route and traffic conditions, accidents and traffic incidents. Selection and training of the staff. Work and leisure. Age as a factor in tr Foreign language - English 2 (for LED) inical vocabulary. Selection of conversation topics and professional topics based on students' level and their focus at Faculty of Transpo d communication skills, ability to give feedback, summarization of a technical text, presentation structure, technical style and its usage Foreign language - English 3 (for LED)	Ansport operation. KZ ortation Sciences. D e, language of man KZ	2 evelopment agement. 2
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15Y1HE	Work Hygiene and Ergonomics in Traffic	KZ	1
•	occupational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of these		
Creation and protection	on of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technology to p	ossibilities and sk	ills of a mai
	Practical examples from the field of transportation; relevant legislature.		
15Y1HL	History of Civil Aviation	KZ	2
	development of aircrafts lighter than air. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of a	-	
wond airports. Fairi	ous aviators. Helicopters. CSA airplanes. Development of aircrafts in Czechoslovakia between the years 1945-1989. Classic era c aviation. Modern era of civil aviation. Airline companies. Supersonic flying.	or aviation. Golden	
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.		2
15Y1NE	German in the Economy and Society	KZ	2
1	d social issues of German speaking countries and of the EU. Reading and listening of texts. Lexical, grammatical and semantic a		1
	selected topics.		
15Y1ZV	East-West dichotomy: Prelude to the Cold War	KZ	2
	olution of the "West" and "East" from the 1500s. Focus on the history in the period between 1850 nad 1950. Milestones and continu		
in the end of 19th ce	ntury and the beginning of the 20th century. Revolutions, the causes and consequences. Scientific and technological progress, th	e causes and con	sequences.
	Economic and financial history. Social changes. Discussions on texts, sources.		
16LLA1	Aircraft 1	KZ	3
Aircraft structural and	conceptual design types - definitions and basic knowledge of the problem. Development of requirements, aircraft definitions and c	-	raft loading
	Systems of primary and secondary airframe structure. Airframe and propulsion unit. Lectures are devoted to aeroplane topi		
16LLA2	Aircraft 2	Z,ZK	2
lanufacturers respon	sibility, responsibilities of operator and professional supervising. Legislation in area of airworthiness. International and national star		dity of aircra
	structures. Aeroelasticity. Inherent and operational reliability of aircraft structure. Fatigue strength. Aircraft structure lifetime presu		
16UDOP	Introduction into Vehicles	Z	2
vehicles and transpo	rtation systems. Functionality and setup. Movement and drive principles. Engines and their characteristics. Rail, road, air and wate	er transport. Altern	ative means
402/041	of transport. Lifting equipment and conveyors. Legislation.	- 7	0
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
Dynamice and the dr	iving inartial of the vehicles. Types of energy - kinetic, static, heat, chemical and others. Ways of energy change into kinetic energy		
-	iving inertial of the vehicles. Types of energy - kinetic, static, heat, chemical and others. Ways of energy change into kinetic energy drive, steam engine, air engine. Energy accumulation means, accumulator, flywheel, fuel cell. Energy recuperation. WTW ana Interactive simulators and simulations	lysis.	
16Y1IS	drive, steam engine, air engine. Energy accumulation means, accumulator, flywheel, fuel cell. Energy recuperation. WTW ana Interactive simulators and simulations	lysis. KZ	2
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16Y1IS Simulation theory a Simulati	drive, steam engine, air engine. Energy accumulation means, accumulator, flywheel, fuel cell. Energy recuperation. WTW and Interactive simulators and simulations and application of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical mon of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive and interactive systems.	lysis. KZ nodels. Computing active simulators.	2 methods.
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17Y1EV	Public Sector Economy	ΚZ	2
Economic and fina	ncial theory of public sector, public choice theory, externalites, decisions about public finance allocation, economic assesment of public		
	R, state budget, management of public projects a their economic efficiency assessment, way of elaboration of PPP projects, funding fro		
17Y1LL	Logistics of Passenger and Freight Air Transport	KZ	2
	ssenger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial trans		
	air cargo. Information systems in air transport. Global distribution systems.	·	
17Y1MD	Marketing in Transportation	KZ	2
	of marketing applied to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transport a	nd the resulting dif	ferences in
	the application of marketing.		
17Y10F	Personal Finance	KZ	2
Personal finance	budget, financing of basic living needs), debt (loans and credits, payment instruments, interest and fees, debt trap), financing of hous	sing (rent, mortgag	e, savings,
consumer loans, re	financing), savings and investments (investment horizon, return, risk, investment strategy), insurance (insurance types, suitability and	adequacy), securin	g the future
	(retirement savings and insurance).		
17Y1PM	Personnel Management	KZ	2
Human sour	ces, work group, man as personality, planning, choice, evaluation and education of human sources, work adaptation, teamwork, inter	cultural communica	ation.
17Y1SK	Urban and Regional Rail Transport Systems	KZ	2
-	transport demand, modal-split, distribution of passenger flows on public regional transport lines. Optimization of line management, line	-	-
evaluation of the	e timetable. Vehicle circulation creation. Optimizing driver shifts and arranging them in turnus. Effects of barrier-free and public transpo	ort preferences. Th	e role of
	marketing.	1	
17Y1SL	Sociology of Human Resources	KZ	2
Human resources a	ind their importance, work group as a special kind of social group, communication, personal management, modern management, hum	an resources planr	ning, culture
	of the organization.		
17Y1ST	Titan Simulation	KZ	2
	pement game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same produce	-	
determine the quar	tity and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequences	s of their decisions	by the form
	of financial corporate reports and they use this information for other business decisions.		
18MTY	Materials Science and Engineering	Z,ZK	3
	terials science and engineering explains mechanical properties of structural materials based on their bonding forces and microstructur		
is paid to metals as	the most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and com	posites. Attention	is also paid
40070	to degradation processes in materials, to defectoscopy and to main mechanical tests.	7 71/	
18PZP	Elasticity and Strength	Z,ZK	3
Tension and compi	ession. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolted a	ind welded joints of	structures.
400.4T	Analysis of deflection curve of beams. Torsion of circular cross sections. Combined loading. Stability.	7 71/	4
18SAT	Structural Analysis	Z,ZK	4
-	of forces in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determinate	-	-
	ork. Kinematic method for calculation of reactions of statically determinate systems. Determination of axial forces in truss constructions. of planar shapes. Fiber polygons and chains.	Cross-sectional cha	aracteristics
18SPP		7	
	Seminary from Elasticity and Strength	— 1	0
Excersise for prac	ice. 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.	1. Analysis of delle	ction curve
1000		7	
18SS	Seminary from Structural Analysis	— 1	0
	se. General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and		Application
	al works for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of it		
	al works for calculation of reactions of staticaly determinate systems. Determination of axial forces in truss construction - method of junctions. Geometry of cross sections. Plane fiber polygons.		
18010	Geometry of cross sections. Plane fiber polygons.	oints and method c	of sections.
18STD Technical standa	Geometry of cross sections. Plane fiber polygons. Seminary from Technical Documentation	oints and method o	of sections.
	Geometry of cross sections. Plane fiber polygons. Seminary from Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional	oints and method o	of sections.
Technical standa	Geometry of cross sections. Plane fiber polygons. Seminary from Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensiona arrangement of drawing sheets.	oints and method o	0 accuracy,
Technical standa	Geometry of cross sections. Plane fiber polygons. Seminary from Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensiona arrangement of drawing sheets. Technical Documentation	Z I and geometrical a	0 accuracy, 2
Technical standa	Geometry of cross sections. Plane fiber polygons. Seminary from Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensiona arrangement of drawing sheets. Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensiona	Z I and geometrical a	0 accuracy, 2
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Technical standa 18TED Technical standa 18X31L	Geometry of cross sections. Plane fiber polygons. Seminary from Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensiona arrangement of drawing sheets. Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensiona arrangement of drawing sheets. Project 1 LED	oints and method of Z I and geometrical a KZ I and geometrical a Z	0 accuracy, 2 accuracy, 2
Technical standa 18TED Technical standa 18X31L 18X32L	Geometry of cross sections. Plane fiber polygons. Seminary from Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensiona arrangement of drawing sheets. Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensiona arrangement of drawing sheets. Project 1 LED Project 2 LED	oints and method of Z I and geometrical a I and geometrical a I and geometrical a Z Z	0 accuracy, 2 accuracy, 2 2 2
Technical standa 18TED Technical standa 18X31L 18X32L 18X33L	Geometry of cross sections. Plane fiber polygons. Seminary from Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensiona arrangement of drawing sheets. Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensiona arrangement of drawing sheets. Project 1 LED Project 2 LED Project 3 LED	oints and method of Z I and geometrical a I and geometrical a I and geometrical a Z Z Z	0 accuracy, 2 accuracy, 2 2 2 2
Technical standa 18TED Technical standa 18X31L 18X32L 18X33L 18Y1AM	Geometry of cross sections. Plane fiber polygons. Seminary from Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensiona arrangement of drawing sheets. Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensiona arrangement of drawing sheets. Project 1 LED Project 2 LED Project 3 LED Anatomy, Mobility and Safety of Man	ints and method of Z al and geometrical a KZ al and geometrical a Z Z KZ	0 accuracy, 2 accuracy, 2 2 2 2 2 2
Technical standa 18TED Technical standa 18X31L 18X32L 18X33L 18Y1AM Survey of tissues. A	Geometry of cross sections. Plane fiber polygons. Seminary from Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensiona arrangement of drawing sheets. Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensiona arrangement of drawing sheets. Project 1 LED Project 2 LED Project 3 LED Anatomy, Mobility and Safety of Man natomical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circulation	inits and method of Z al and geometrical a KZ and geometrical a Z KZ and nervous system	0 accuracy, 2 accuracy, 2 2 2 2 n. Structure
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		1/7	2
18Y1UK	Introduction of Rail Vehicles	KZ	
	tics and parameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion tra otal running resistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehicle - I		-
ack resistance. It	and electric drive. Design concept rail vehicles and drive of wheel set.	nyurumeename, r	iyuluuynam
20SYSA	Systems Analysis	Z.ZK	5
	tem sciences, system viewpoint, terminology, typical system analysis tasks, system identification, system interface and interface tasks	1 '	-
	strong functions and processes, genetic code, system identity, system architecture. Tools for system analysis - Petri nets, decision tak		
	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		
ystems for ITS. Pr	rinciples and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real examples	of possible appli	cations of th
	principles of ITS.	_	
20X31L	Project 1 LED	Z	2
20X32L	Project 2 LED	Z	2
20X33L	Project 3 LED	Z	2
20Y1AE	Applied Electronics	KZ	2
	semiconductor components, their principles, characteristics and typical connection diagrams. Semiconductor PN junction diodes, tran	-	-
amplifiers, basic i	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).	or as an amplifier	, operationa
20Y1AF	Alternative Forms of Transportation Project Financing	KZ	2
-	such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt paym	1	
-	not a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of sec		-
	of transportation and telecomunication projects.		
20Y1EA	Environmental Aspects of Transport	KZ	2
State of the atmosp	phere, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilistic	forecasts, foreca	st evaluatio
Air quality, mair	n pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transp	ortation in climat	e change.
20Y1EK	Qualification in Electrical Engineering	KZ	2
ractical experience	ce with measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock hazard,	symbols and labe	eling, nomin
voltage, maximum	allowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legislation	on, standards and	d regulation
	in relation to health and safety and electrical engineering.		
20Y1KP	Communication and presentation skills	KZ	2
		1	1
-	es and their fulfillment, current communication networks, work with various sources, formal requirements of emails and final theses, b	asic typology of	personalities
-	tional intelligence, manipulation and way of working with it, coping with stressful situations, formal requirements of presentations, way	asic typology of	personalities
teamwork, emo	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.	vasic typology of /s of communicat	ion during
teamwork, emo 20Y1LN	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. Location and Navigation	vasic typology of point of poi	ion during
teamwork, emo 20Y1LN	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. Location and Navigation examples of road networks, localization on the network. Routing algorithms, their properties and implementation. Description and exa	vasic typology of point of poi	ion during
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21LMR1	Aircraft Engines 1	ZK	3
	ine, theoretical background, operational characteristics and construction schemes. Propellers, operational characteristics. Turbine en		-
	onstruction schemes, operational characteristics. Turbojet and turbofan engines, basic construction modules, and their operational characteristics.		
		Ĵ	
21LVYO	Human Performance and Limitations	ZK	3
	e & limitations, aptibility & competence, accident statistics, flight safety, basics of flight physiology, man & environment	• •	
sensory system, h	health & amp; hygiene, health preservation, intoxication, incapacitation, basics of flight psychology, human information processing, me	emory & learni	ing, theory
	& model of human error, body rhythms & sleep, stress, fatigue, working methods.		
21MEOL	Meteorology	KZ	3
Structure of atmo	sphere. Vertical stratification. Pressures QNH, QFE, QFF, QME. Instability. Atmospherical fronts. Atmospherical rainfall, origin fission.	Turbulence. Power	rs causing
wind. Cyclone and	anticyclone. Gradient wind. Geostrofical and geocyklostrofical wind. Visibilities in air transport. Dangerous meteorological aspects. Met	eorological maps. (Climatology.
	Circulation. Intertropical front. Meteorological informations.		
21PAP	Flight Planning and Performance	Z,ZK	4
	Load of aircraft. Determination of centre of gravity - loadsheet, trimsheet. Aircraft weighing. Overloading of aircraft. Basic characteristic s		racteristics.
	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.
Du	ring the course, students are continuously working on the semestral assignment, which helps them to understand practical application	on of the SMS.	
21SBL1	Bachelor Thesis Seminar 1	Z	1
Types of thesis (rev	iew, applied research, basic research, thesis dealing with design proposals). Working with citation sources (citation sources, citation o	databases, citation	styles, how
to cit	e). Analyzing the state of the art (standards of research writing). Defining the limitations of the state of the art. Introduction to the these	sis methodology.	
21SBL2	Bachelor Thesis Seminar 2	7	1
	esis writing (introduction, analysis of the current state, specification of the problem, objectives and hypotheses). Definition of materia	ls and methods, at	oproach to
	taining results, presentation and discussion of results, formulation of thesis conclusions. Basics of LaTeX, working with LaTeX and W	-	
21SBL3	Bachelor Thesis Seminar 3	7	1
		∠	-
Formai and grap	hic design of the thesis. Data collection and presentation, basic statistical reasoning, validation of results and designs. Achieving the	objectives of the tr	iesis and
	evaluation of hypothesis tests. Preparation of the presentation, principles of presentation of the thesis.		
21SLD	Seminar of Air Transport	Z	0
History, definiti	ons, terminology, basic rules. VFR / IFR. Basics of aerodynamics. Propulsion of aircraft. Aircraft design. Basics of navigation, radio na	wigation. Weight, b	alance,
performance. Flig	ht planning, optimization of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic ma	inagement, ground	handling,
	security. Air crew. Airlines and economics. Space technologies.		
21SYLP	Airport Security	KZ	2
Definition of aviation	n security and unlawful acts against the civil aviation. Description of threats, risks, causes and goals of Security. Overview of nationa	l and international	regulations
and their rele	evance to airport security. Security control devices. Operational efficiency factors and related variables. Basic use of queueing theory	and optimization ta	asks.
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
Definition and basi	c overview of AIS and AIM. Transition from AIS to AIM. Regulatory base. Provision of AIS/AIM in the Czech Rep. AIP (Aeronautical In	f. Publication). VFF	R Manual of
the Czech Rep. A	IRAC System. NOTAM messages. PIB (Pre-flight Informtion Bulletin). AIC (Aeoronautical Inf. Circulars). Aeronautical Charts. EAD (Eu	ropena AIS Databa	ase). QMS
	(Quality Mng. System). ADQ (Aeronautical Data Quality). AIXM (Aeronautical Inf. Exchnage Format).		
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	I I	operational
	procedures. Practical flights.		
21Y1LJ	Aeronautical Radio and Flight Instruments	KZ	2
	story of aircraft instrumentation, aerometric instrumentation, Earth magnetism, aircraft electric equipment, gyroscopic instrumentatior	I I	
	ft equipment, engine instrumentation, warning and recording systems, instrumentation operational requirements, radiocommunicatio	-	
21Y1LS	Air Traffic Services	KZ	2
Airspace structure	in Czech Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, APP		story of AIS
	at USA and Czechoslovakia. ATS - Model of financing. Training System of Air Traffic Controllers. Future development of ATS		
21Y1MP	Matlab for project-oriented study	KZ	2
The subject's sylla	bus is focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exercises	will be prepared a	ccording to
particular examp	les, based on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improveme	ent of students' Mat	lab skills.
21Y10H	Airline Business and Operations	KZ	2
The course provide	s a comprehensive view of the commercial, operational and transportation activities of air transport companies. It focuses on the organiz	ational structure of	companies,
various aspects of t	heir strategy, economic and operational indicators. It introduces students in detail to operational processes and the essentials of transp	ortation processes	. It provides
	a basic view of the economic aspects of air transport.		
21Y1PC	ATC Procedures and Activities	KZ	2
	procedures, basics of communication and phraseology, aircraft identification, spacing and traffic coordination. In addition, the course		
	ts and low visibility operational procedures. Students will during the course learn basic safety management applications applied acro		
21Y1RZ	Human Resources Management	KZ	2
	· · · · · · · · · · · · · · · · · · ·	I I	
	numan resources in the organization and related disciplines file. Substance, importance and challenges of human resources manage		
	han resource management. Human resource planning. Search, recruitment and selection of employees. Motivation, evaluation and ren	nuneration of staff.	rosiuoning,
	dismissal and redundancies of employees. Education of employees. Planning career management.	·	
21Y1SI	ATC Simulator	KZ	2
	vith the simulation environment, acquiring basic habits, aircraft identification procedures, vectoring, level changes, ATC clearance, us	-	
exercises focusir	ng on basic vectoring, early application of vertical separation, EST and REV message passing. Practical exercises in the APPROACH	I area, practicing a	rrival and
	departure management procedures, conflict resolution.		

21Y1UL	Aircraft Maintenance	KZ	2
	and technical operations. Maintenance and work processes. Defects search methods, status check diagnostic tools. Selection and qualit		
Basic documentati	on for maintenance. Optimization of time maintenance intervals. Regulation no. 1321/2014 Part 145. Human factors of aircraft mainten	ance. Regulation	n of directo
	EASA for aircraft maintenance. Seminars will be focused on practical application.		
21ZALD	Basics of Air Transport	KZ	2
	erminology, basic rules. VFR/IFR. Basics of aerodynamics. Propulsion of aircraft. Aircraft design. Basics of navigation, radio navigation. W		
Flight planning, opt	mization of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic management, ground Airlines and economics. Space technologies.	1 handling, secu	rity. Air cre
21ZT	ATM Systems	ZK	2
The course intro	oduces classical and modern facilities, systems and technologies designated for ATS. Student obtains knowledge of technical principle communication, navigation and surveillance aviation systems are concerned.	s and solutions	as far as
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 pres 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 d lift and drag increase.		
21ZYT2	Principles of Flight 2	Z,ZK	3
	mic longitudinal stability, neutral point, location of centre of gravity, static directional & lateral stability, dynamic directional & v (directional) & roll (lateral), roll/yaw interaction, trimming, speed of sound, Mach number, compressibility, shock waves, critical M heating, operating limitations, manoeuvring envelope, gust-load diagram.	lateral stability, c	
22SELN	Air Accident Investigation	ZK	2
	islation (ICAO, EU, Czechia) related to air accident investigation. Obligations arising from legislative requirements for individual States in		
-	ess. Air accident site (inspector's equipment, site security, personal protection, initial activities at the site, sketch, evidence, etc.). Aircra Final report (formalities, substantive content, contribution).		
22X31L	Project 1 LED	Z	2
22X32L	Project 2 LED	 Z	2
22X33L	Project 3 LED	Z	2
23X31L	Project 1 LED	Z	2
23X31L 23X32L	Project 2 LED	Z	2
	•	Z	
23X33L	Project 3 LED		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 circuits ic circuits. AD converters. Connection of analog and digital parts. Basic blocks of digital signal processing. Measurement processing. De in electronics.		
23Y1KB	Cyber security in transportation	KZ	2
Basic concepts of s	ecurity and cyber security, legal status in the field of cyber security, virtual cyberspace and communities, taxonomy of crimes in cyber	space, social im	pacts, soci
engineerin	g, cyber attack technology, information security, cyber attacks on telematics systems, security of systems with artificial intelligence, no	rms and standa	rds.
23Y1KM	Crisis Management	KZ	2
Theory and legal fra	me of crisis management with direction to Rescue system (IZS). After introduction to safety domain, there are terms and knowledge or	: theory and pos	ition of cris
manag	ement and its targets; IZS-crisis management-crisis planning; and basic legislation. Practical part is concentrated to responsibility ma	trix compilation.	
			2
23Y1KO	Quantum Physics and Optoelectronics	KZ	<u> </u>
	Ground of quantum physics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics compone	KZ	1
23Y1KY	Ground of quantum physics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics compone Cybernality	KZ KZ	2
23Y1KY	Ground of quantum physics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics compone Cybernality behavior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism. Infor	KZ Ints. KZ ware and connect	2
23Y1KY Juridical aspects of 23Y1MK	Ground of quantum physics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics compone Cybernality behavior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism. Infor Crisis Situation Management in Critical Infrastructure	KZ Ints. KZ ware and connec KZ	2 cted aspec 2
23Y1KY Juridical aspects of 23Y1MK Determination of c	Ground of quantum physics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics compone Cybernality behavior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism. Infor Crisis Situation Management in Critical Infrastructure	KZ Marts. KZ ware and connect KZ nd the self-gover	2 cted aspec 2
23Y1KY Juridical aspects of 23Y1MK Determination of c their	Ground of quantum physics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics compone Cybernality behavior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism. Infor Crisis Situation Management in Critical Infrastructure ritical infrastructute elements on all levels, their protection systems, responsibilities of particular agencies of the state administration are esponsibilities to anounce particular safety provisions. Physical and cyber protection of critical infrastructure with special attention to t	KZ Mare and connec KZ nd the self-gover he soft targets.	2 cted aspec 2 rnment, an
23Y1KY Juridical aspects of 23Y1MK Determination of c their 23Y1MU	Ground of quantum physics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics compone Cybernality behavior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism. Infor Crisis Situation Management in Critical Infrastructure ritical infrastructute elements on all levels, their protection systems, responsibilities of particular agencies of the state administration ar responsibilities to anounce particular safety provisions. Physical and cyber protection of critical infrastructure with special attention to t Emergency Events Management Solution in Transport Infrastructure mergency events with emphasis of the transport infrastructure events and their solution management. Knowledge in the emergency plan	KZ ware and connect KZ nd the self-gover he soft targets. KZ	cted aspec 2 rnment, an 2
23Y1KY Juridical aspects of 23Y1MK Determination of c their 23Y1MU Basic solutions of e	Ground of quantum physics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics compone Cybernality behavior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism. Infor Crisis Situation Management in Critical Infrastructure ritical infrastructute elements on all levels, their protection systems, responsibilities of particular agencies of the state administration and responsibilities to anounce particular safety provisions. Physical and cyber protection of critical infrastructure with special attention to t Emergency Events Management Solution in Transport Infrastructure mergency events with emphasis of the transport infrastructure events and their solution management. Knowledge in the emergency plan in liquidation work within the transport infrastructure.	KZ ware and connect KZ nd the self-gover he soft targets. KZ nning and specia	2 cted aspec 2 rnment, an 2 I procedur
23Y1KY luridical aspects of 23Y1MK Determination of c their 23Y1MU Basic solutions of e 23Y1OK	Ground of quantum physics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics compone Cybernality behavior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism. Infor Crisis Situation Management in Critical Infrastructure ritical infrastructute elements on all levels, their protection systems, responsibilities of particular agencies of the state administration ar responsibilities to anounce particular safety provisions. Physical and cyber protection of critical infrastructure with special attention to t Emergency Events Management Solution in Transport Infrastructure mergency events with emphasis of the transport infrastructure events and their solution management. Knowledge in the emergency plan	KZ ware and connect KZ nd the self-gover he soft targets. KZ nning and specia	2 cted aspec 2 rnment, an 2 I procedur
23Y1KY Juridical aspects of 23Y1MK Determination of c their 23Y1MU Basic solutions of e 23Y1OK Types of technologi	Ground of quantum physics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics compone Cybernality behavior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism. Infor Crisis Situation Management in Critical Infrastructure ritical infrastructute elements on all levels, their protection systems, responsibilities of particular agencies of the state administration are esponsibilities to anounce particular safety provisions. Physical and cyber protection of critical infrastructure with special attention to t Emergency Events Management Solution in Transport Infrastructure mergency events with emphasis of the transport infrastructure events and their solution management. Knowledge in the emergency plar in liquidation work within the transport infrastructures Protection of Critical Objects and Infrastructures cal systems, critical item, risks and their courses, criticality, vulnerability, connectivity, dependability, resilience, failure, protection, safety infrastructures.	KZ ware and connect KZ nd the self-gover he soft targets. KZ nning and specia KZ	2 cted aspec 2 rnment, an 2 1 procedur 2 s and critic
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