Study plan

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

Faculty/Institute/Others:

Department:

Branch of study guaranteed by the department: Welcome page

Garantor of the study branch:

Program of study: Technology in Transportation and Telecommunications

Type of study: Bachelor full-time

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

Note on the plan:

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

The role of the block: Z

Code of the group: 1S-BP-TET-24/25

Name of the group: 1st Sem. Bachelor Full-Time TET from 2024/25

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

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

Credits in the group: 30 Note on the group:

Note on the (<u> </u>					
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	s z	Z
11LA	Linear Algebra Lucie Kárná, Pavel Provinský, Martina Be vá ová Martina Be vá ová Martina Be vá ová (Gar.)	Z,ZK	3	2P+1C+10B	B Z	Z
12ZADY	Introduction to Transportation Engineering Zuzana arská, Dagmar Ko árková, Jana Štikarová Dagmar Ko árková (Gar.)	Z,ZK	4	2P+2C	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	s z	Z
11GIE	Geometry Pavel Provinský, Old ich Hykš, Šárka Vorá ová Old ich Hykš Old ich Hykš (Gar.)	KZ	3	2P+2C+12B	B Z	Z
14ASD	Algorithm and Data Structures Tomáš Brandejský, Michal Je ábek, Alena Kubá ová, Jan Procházka, Vít Fábera, Martin Fiala Vít Fábera Vít Fábera (Gar.)	KZ	3	0P+2C+8B	B Z	Z
18TKK	Technical Drawing and Designing Jitka ezní ková, Vít Malinovský, Jan Šleichrt, Martin Brumovský, Jan Mejst ík, Drahomír Schmidt, Lukáš Svoboda, Jan Vogl, Ji í Zeisek, Jan Šleichrt Jan Šleichrt (Gar.)	KZ	4	2P+2C+16B	3 Z	Z
16UDOP	Introduction into Vehicles Zuzana Radová, Petr Bouchner	Z	2	2P+0C+8B	B Z	Z
TV-1	Physical Education	Z	1		Z	Z

Characteristics of the courses of this group of Study Plan: Code=1S-BP-TET-24/25 Name=1st Sem. Bachelor Full-Time TET from 2024/25

<u>yyyyy</u>							
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, in							
Riemann integral. Firs	Riemann integral. First-order differential equations, linear differential equations.						
11LA	Linear Algebra	Z,ZK	3				
Vector spaces (linear	Vector spaces (linear combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and their solvability. Determinants are						
their applications. Sca	their applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classification.						
12ZADY	Introduction to Transportation Engineering	Z,ZK	4				

18MTY	Materials Science and Engineering	Z,ZK	3
Basic course of materia	s science and engineering explains mechanical properties of structural materials based on their bonding forces and microstru	ucture. However the	main attention
is paid to metals as the	most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and	composites. Attent	ion 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, the	velocity, and
acceleration of a partic	e moving on a curved path.		
14ASD	Algorithm and Data Structures	KZ	3
Students will analyze p	oblems, design a theoretical solution to a given problem and write the resulting algorithm using flowcharts, practice reading a	lgorithms written u	sing flowcharts,
and use basic Boolean	algebra to construct constraints in algorithms. Students will be introduced to the basics of the Python programming language	e - variable, branchi	ing, 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.		
1	anable of basic data types (integer, nearing point and earlig) and the fact data of details in their programs.		
18TKK	Technical Drawing and Designing	KZ	4
		KZ Z	4 2
18TKK 16UDOP	Technical Drawing and Designing	Z	2
18TKK 16UDOP Vehicles and transporta	Technical Drawing and Designing Introduction into Vehicles	Z	2

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

tasks. Soft and hard systems, methods for soft system analysis.

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:

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

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

2020/21			
11CAL2	Calculus 2	Z,ZK	5
Linear differential ed	uations and their systems, differential calculus of functions of several real variables. Riemann integral in Rn. Line and surface in	tegrals.	
11STAT	Statistics	Z,ZK	4
Basics of probability	Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Parar	netric tests Nonpa	rametric tests
Regression and cor	elation analysis		
12ZTS	Railway Lines and Stations	Z,ZK	4
Rail transport. Railw	ay track geometry parameters. Route layout of railway lines. Railway line construction - railway substructure and superstructure	Spatial layout of r	ailway lines.
Railway control syst	ems 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 f	pres in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determin	ate beams and sin	nple girders.
Principle of virtual w	ork. Kinematic method for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction	ons. Cross-section	al characteristic
of planar shapes. Fi	per polygons and chains.		
20SYSA	Systems Analysis	Z,ZK	5
Introduction to syste	m sciences, system viewpoint, terminology, typical system analysis tasks, system identification, system interface and interface ta	sks, processes, s	ystem behaviou
and its analysis stro	ing functions and processes, genetic code, system identity, system architecture. Tools for system analysis - Petri nets, decision i	ables algorithms	for structural

14PRG	Programming	KZ	2					
The Course Programming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python programming language is expanded								
here so that the participant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and searching, tuples, sets, dictionaries,								
working with date and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML).								
17TEDL	Transport Technology and Logistics	KZ	3					
Basic terms in transport	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, t	echnologic factors of the side of operator and client, organisation of city transport, logistic technologies and their aplication u	sing various trans	sport modus.					
21ZALD	Basics of Air Transport	KZ	2					
History, definitions, term	inology, basic rules. VFR/IFR. Basics of aerodynamics. Propulsion of aircraft. Aircraft design. Basics of navigation, radio navigati	on. Weight, balan	ce, performance.					
Flight planning, optimization of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic management, ground handling, security. Air crew.								
Airlines and economics.	Airlines and economics. Space technologies.							
TV-2	Physical Education	Z	1					

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

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

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

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

Credits in the group: 30 Note on the group:

15JZ1A

Foreign Language - English 1

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members)	Completion	Credits	Scope	Semester	Role
	Tutors, authors and guarantors (gar.)					
11FYZ	Physics Old ich Hykš, Jana Kuklová, Pavel Demo, Zuzana Malá, Tomáš Vít Jana Kuklová Pavel Demo (Gar.)	Z,ZK	5	2P+2C+18E	Z	Z
12MDE	Transport Models and Transport Excesses Josef Kocourek, Tomáš Pad lek	Z,ZK	3	2P+1C+8E	Z	Z
11TGA	Graph Theory and its Applications in Transport Denisa Mocková, Dušan Teichmann Denisa Mocková Denisa Mocková (Gar.)	Z,ZK	4	2P+2C+12E	Z	Z
18PZP	Elasticity and Strength Jitka ezni ková, Jan Šleichrt, Daniel Kytý, Jan Vy ichl, Tomáš Doktor, Josef Jíra, Ond ej Jiroušek Ond ej Jiroušek (Gar.)	Z,ZK	3	2P+1C+10E	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+20E	Z	Z
12PPOK	Designing Roads, Highways and Motorways Josef Kocourek, Tomáš Pad lek, Polina Zayats, Petr Kumpošt Josef Kocourek (Gar.)	KZ	3	1P+2C+10E	Z	Z
14DATS	Database Systems Jana Kaliková, Jan Kr ál Jana Kaliková Jana Kaliková (Gar.)	KZ	2	1P+1C+10E	Z	Z
15JZ1A	Foreign Language - English 1 Markéta Vojanová, Dana Boušová, Marie Michlová, Marek Tome ek, Jan Feit, Markéta Musilová, Peter Morpuss, Lenka Monková, Jitka He manová,	Z	3	0P+4C+10E	Z	Z

	Markéta Musilová, Peter Morpuss, Lenka Monková, Jitka He manová,		
Characteristics	of the courses of this group of Study Plan: Code=3S-BP-TET-24/25 Name=3rd Sem. Bachelor F	ull-Time TET f	rom 2024/25
11FYZ	Physics	Z,ZK	5
Kinematics, dynami	cs, 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 tr	affic flow and methods for their measurement. Models of the traffic flow, communications load, line and urban systems. Theory of	of queues, shock w	aves. Quality of
transport and its ass	sessment. Statistical characteristics of transport. Transport excesses, their analysis, the causes, identify and minimize the conse	quences. Improving	g of transport
safety and fluency.			
11TGA	Graph Theory and its Applications in Transport	Z,ZK	4
Basic terms of grap	n theory, paths in graphs, flows in networks, location problems, design problems on graphs, optimum routing, use of graphs in o	ther scientific discip	olines.
18PZP	Elasticity and Strength	Z,ZK	3
Tension and compre	ession. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolt	ed and welded join	its of structures.
Analysis of deflection	n curve of beams. Torsion of circular cross sections. Combined loading. Stability.		
20UITS	Introduction to Intelligent Transport Systems	Z,ZK	7
Terminology and leg	islative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamentals of i	information and tele	ecommunication
systems for ITS. Prid	nciples and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real exam	ples of possible ap	plications of the
principles of ITS.			
12PPOK	Designing Roads, Highways and Motorways	KZ	3
Definition, types, ow	rnership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and stand	ard speed. Route in	n rural areas.
Range of vision for	stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. S	Safety device. Cross	sings, junctions,
intersections.			
14DATS	Database Systems	KZ	2
Basic concepts of d	atabase systems, conceptual model, relational data model, the principles of normal forms, relational database design, security a	and integrity of data	a, database
queries, relational a	gebra, SQL language, client / server, multilayer architectures, distributed database systems. Access to data via the WWW.		

Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and communicative skills. Elementary

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

Code of the group: 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:

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 (Gar.)	ZK	2	2P+0C	Z,L	Z
21ZYT1	Principles of Flight 1 Jakub Trýb, P emysl Vávra P emysl Vávra Vladimír Socha (Gar.)	Z,ZK	3	2P+1C	L	Z
16LLA1	Aircraft 1 Vladimír Plos, Michal erný, Karel Mündel, Daniel Urban, Karel Hylmar Vladimír Plos (Gar.)	KZ	3	2P+1C	L	Z
21RIBZ	Aviation Safety Natalia Guskova, Libor Kurzweil, Libor Kurzweil, Libor Kurzweil Andrej Lališ	KZ	2	2P+0C	L	Z
14PGP	Program Resources Michal Je ábek Vít Fábera (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) Markéta Vojanová, Marie Michlová, Marek Tome ek, Jan Feit, Markéta Musilová, Peter Morpuss, Lenka Monková, Jitka He manová, Eva Rezlerová,	KZ	2	0P+2C	L	Z

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

11EMO	Electromagnetic Field and Optics	Z,ZK	4
Electric field. Electric	current. Magnetic field. Electromagnetic field. Optics. Basics of solid-state physics.		
21LEIS	Aerodromes	Z,ZK	3
Basic definitions. Ap	olicability. Airport design. Reference code. Declared distances of runways (RWY). Taxiways and aprons. Clearway. Stopway. Ma	arkings of movement	areas.
Markings. Signs. Ma	kers. Visual aids for denoting obstacles. Obstacle restriction, removal. Visual aids for navigation, lights, approach lighting syste	ms. Visual approach	slope indicator
systems. Runway lig	nts. Taxiway lights. Visual aids for denoting obstacles.		
21RELP	Air Traffic Control	Z,ZK	4
21ZT	ATM Systems	ZK	2
	es classical and modern facilities, systems and technologies designated for ATS. Student obtains knowledge of technical princ	iples and solutions a	s far as
communication, nav	gation and surveillance aviation systems are concerned.	<u> </u>	
21ZYT1	Principles of Flight 1	Z,ZK	3
Aerodynamic drag, r	elation between drag and speed, streamline, boundary layer, formula of continuity, formula of Bernoulli, lift and drag, air flow a	nd pressures around	wing, angle of
attack, reactions of v	ring in air flow, lift and drag of a wing and an aircraft, coefficient of lift and drag, critical angle of attack, wing with final span, ind	luced drag, interferer	nce, devices for
lift and drag increase	a.		
16LLA1	Aircraft 1	KZ	3
Aircraft structural an	d conceptual design types - definitions and basic knowledge of the problem. Development of requirements, aircraft definitions a	and categorisation. Ai	ircraft loadings.
Systems of primary	and secondary airframe structure. Airframe and propulsion unit. Lectures are devoted to aeroplane topics.		
21RIBZ	Aviation Safety	KZ	2
The course contains	topics related to the safety management and structure of the SMS. This includes a description of the SMS mechanisms and tools	, used to ensure the s	safe operations.
During the course, s	udents are continuously working on the semestral assignment, which helps them to understand practical application of the SN	ЛS.	
14PGP	Program Resources	Z	2
Students will be rem	nded of some aspects of Pythom programming, learn basic concepts and constructs from object-oriented programming and the	neir implementation i	n Python. They
will also try out the b	asics of working with data libraries in Python, namely NumPy, Pandas, Matplotlib, and practice with examples of smaller and la	arger data sizes.	
21SBL1	Bachelor Thesis Seminar 1	Z	1
Types of thesis (revi	ew, applied research, basic research, thesis dealing with design proposals). Working with citation sources (citation sources, cita	ation databases, citat	tion styles, how
to cite). Analyzing th	e state of the art (standards of research writing). Defining the limitations of the state of the art. Introduction to the thesis metho	dology.	
15JL2A	Foreign language - English 2 (for LED)	KZ	2
Grammar and techni	cal vocabulary. Selection of conversation topics and professional topics based on students' level and their focus at Faculty of Tra	insportation Sciences	s. Development
of perceptive and co	mmunication skills, ability to give feedback, summarization of a technical text, presentation structure, technical style and its us	age, language of ma	nagement.

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

16LLA2

Aircraft 2

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) Markéta Vojanová, Dana Boušová, Marie Michlová, Marek Tome ek, Jan Feit, Markéta Musilová, Peter Morpuss, Lenka Monková, Jitka He manová,	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

Z,ZK

2

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Manufacturers respon	nsibility, responsibilities of operator and professional supervising. Legislation in area of airworthiness. International and nationa	I standards. Static s	olidity of aircraft
structures. Aeroelasti	city. Inherent and operational reliability of aircraft structure. Fatigue strength. Aircraft structure lifetime presumption.		
21LGCE	Air Navigation	Z,ZK	3
Earth - its shape, par	ameters and properties. Aeronautical charts and their use. Measuring time. Dead reckoning. Radionavigation aids. Global nav	igation satellite syst	tems. Air traffic
services routes and t	heir design.		
21LGVP	Legislation and Operational Regulations	ZK	4
Introduction into avia	tion regulations. The scope of international and national organizations in civil aviation. Analysis and interpretation of the ICAO	Annexes 1-19, ICA	O Docs. 4444,
7030, 8168. Introduct	ion to the European Parliament and Council Regulation (EC), Commission Regulation (EU) and the Decisions of the Executive	e Director of EASA.	-
21ZYT2	Principles of Flight 2	Z,ZK	3
Static & amp; dynamic	c longitudinal stability, neutral point, location of centre of gravity, static directional & amp; lateral stability, dynamic directional &	amp; lateral stability,	, control pitch
(longitudinal), yaw (d	irectional) & roll (lateral), roll/yaw interaction, trimming, speed of sound, Mach number, compressibility, shock waves, criti	cal Mach number, a	erodynamic
heating, operating lim	nitations, manoeuvring envelope, gust-load diagram.		
22SELN	Air Accident Investigation	ZK	2
Introduction and legis	lation (ICAO, EU, Czechia) related to air accident investigation. Obligations arising from legislative requirements for individual S	States in the event of	an air accident
investigation process	. Air accident site (inspector's equipment, site security, personal protection, initial activities at the site, sketch, evidence, etc.).	Aircraft and crew do	ocumentation.
Final report (formaliti	es, substantive content, contribution).		
14ZDAL	Data processing in air transport	KZ	2
Introduction to data p	rocessing and analysis tools. Practical part of the training - introduction to the working environment, applied examples of data	processing from pra	ctice, advanced
methods of presentat	ion of the results. Seminar papers on open data. Consultation hours for seminar papers. Seminar paper submission and presi	entation.	
21MEOL	Meteorology	KZ	3
Structure of atmosph	ere. Vertical stratification. Pressures QNH, QFE, QFF, QME. Instability. Atmospherical fronts. Atmospherical rainfall, origin fiss	ion. Turbulence. Pov	vers causing
wind. Cyclone and an	ticyclone. Gradient wind. Geostrofical and geocyklostrofical wind. Visibilities in air transport. Dangerous meteorological aspects	s. Meteorological ma	ps. Climatology
Circulation. Intertropi	cal front. Meteorological informations.		
21SYLP	Airport Security	KZ	2
Definition of aviation	security and unlawful acts against the civil aviation. Description of threats, risks, causes and goals of Security. Overview of na	tional and internatio	nal regulations
and their relevance to	a airport security. Security control devices. Operational efficiency factors and related variables. Basic use of queueing theory a	nd optimization task	KS.
21LGL1	Aviation English 1	Z	2
_	rminology used in civil aviation in the general context and emphasizing the ability to receive information only in English.	- 1	
21SBL2	Bachelor Thesis Seminar 2	Z	1
	s writing (introduction, analysis of the current state, specification of the problem, objectives and hypotheses). Definition of mat		approach to
٠.	sentation and discussion of results, formulation of thesis conclusions. Basics of LaTeX, working with LaTeX and Word templat		,
15JL3A	Foreign language - English 3 (for LED)	KZ	2
	r orong managed English 5 (for EED) cal vocabulary. Selection of conversation topics and professional topics based on students' level and their focus at Faculty of Tra	1	_
	nmunication skills, ability to give feedback, summarization of a technical text, presentation structure, technical style and its us		
. po.oopiivo and ooi		ago, languago oi ilic	aagomoni.

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

Name of the group: 6th Sem. Bachelor Full-Time TET-LED from 2023/24 Requirement credits in the group: In this group you have to gain 24 credits Requirement courses in the group: In this group you have to complete 8 courses

Credits in the group: 24

Note on the group:

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

System and subsystem, external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of differential and differential Linear and nonlinear system, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer function. Stability of LTI system Discretization of continuous systems. System interconnection. 21EMIL Air Transport Economy Z,ZK	•
Discretization of continuous systems. System interconnection. 21EMIL Air Transport Economy Z,ZK	
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 statements. In the second page 15 and 16 an	art, the
course builds on the general knowledge acquired and applies it to the environment of air transport economics. The basic principle is the Holloway model, which structures k	knowledge
about demand, price and yield on the one hand, and supply, costs and expenses on the other.	
21LMR1 Aircraft Engines 1 ZK	3
Aircraft piston engine, theoretical background, operational characteristics and construction schemes. Propellers, operational characteristics. Turbine engine, theoretical background, operational characteristics and construction schemes.	kground,
thermal cycles, construction schemes, operational characteristics. Turbojet and turbofan engines, basic construction modules, and their operational characteristics. Engine	control.
21LVYO Human Performance and Limitations ZK	3
Human performace & amp; limitations, aptibility & amp; competence, accident statistics, flight safety, basics of flight physiology, man & amp; environment, breathing & amp; ci	rculation,
sensory system, health & amp; hygiene, health preservation, intoxication, incapacitation, basics of flight psychology, human information processing, memory & amp; learning	ງ, theory
& model of human error, body rhythms & 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 characteristic speeds. Runway characteristic speeds.	acteristic
Take off and landing performance. Drift down. ETOPS. MEL. Flight planning and monitoring. Routing. FL and speeds selection. Charts. ICAO ATC FPL. Aerodrom operation	minimum
Fuel plan. Operational flight plan.	
21LGL2 Aviation English 2 KZ	2
Terminology in the sphere of aircraft construction, principles of flight, aircraft engines, instruments and systems.	
21SBL3 Bachelor Thesis Seminar 3 Z	1
Formal and graphic design of the thesis. Data collection and presentation, basic statistical reasoning, validation of results and designs. Achieving the objectives of the thesi	s and
	s and
Formal and graphic design of the thesis. Data collection and presentation, basic statistical reasoning, validation of results and designs. Achieving the objectives of the thesi evaluation of hypothesis tests. Preparation of the presentation, principles of presentation of the thesis.	s and
Formal and graphic design of the thesis. Data collection and presentation, basic statistical reasoning, validation of results and designs. Achieving the objectives of the thesi evaluation of hypothesis tests. Preparation of the presentation, principles of presentation of the thesis.	2

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:

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

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

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

Name of the block: Compulsory elective courses

Minimal number of credits of the block: 6

The role of the block: PV

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

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

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

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

Credits in the group: 6 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
21Y1AM	Aeronautical Information Management (AIM)	KZ	2	2P+0C	Z	PV
00Y1XB	Active participation in a scientific project, workshop, short-term trip abroad Patrik Horaž ovský Patrik Horaž ovský (Gar.)	KZ	2	2P+0C		PV
20Y1AF	Alternative Forms of Transportation Project Financing Mária Jánešová Mária Jánešová	KZ	2	2P+0C	Z	PV
18Y1AM	Anatomy, Mobility and Safety of Man	KZ	2	2P+0C	Z	PV
14Y1AV	Animation and Visualization	KZ	2	2P+0C	L	PV
12Y1AE	Applied Ecology Martin Jacura, Kristýna Neubergová	KZ	2	2P+0C	Z	PV
20Y1AE	Applied Electronics	KZ	2	2P+0C	Z	PV
14Y1BE	Barrierless Transport Jan Kr ál	KZ	2	2P+0C	L	PV
15Y1BO	Work Safety and Health Protection in Transportation Petr Musil	KZ	2	2P+0C	L	PV
11Y1BK	Error Detection Codes for Interlocking Systems 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 Martin Jacura, Eva Rezlerová	KZ	2	2P+0C	L	PV
12Y1DS	Project Documentation in Practice	KZ	2	2P+0C	Z	PV
20Y1EK	Qualification in Electrical Engineering	KZ	2	2P+0C	L	PV
16Y1EN	Energy Requirements of Vehicles	KZ	2	2P+0C	L	PV
20Y1EA	Environmental Aspects of Transport	KZ	2	2P+0C	Z	PV
15Y1EH	European Integration within Historical Context Jan Feit	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 Vladimir Plos	KZ	2	2P+0C	L	PV
15Y1HD	History of City Mass Transport	KZ	2	2P+0C	Z	PV
12Y1HD	Milan Dont Traffic Noise	KZ	2	2P+0C	L	PV
15Y1HE	Dagmar Ko árková, Libor Ládyš Work Hygiene and Ergonomics in Traffic	KZ	2	2P+0C	 	
	Petr Musil					PV
16Y1IS	Interactive simulators and simulations Combined Transportation	KZ	2	2P+0C	L	PV
12Y1KN	Petr Nejedlý	KZ	2	2P+0C	Z	PV
12Y1KP	Communication and Promotion of Transport Projects Dagmar Ko árková, Ond ej Kubala	KZ	2	2P+0C	L	PV
20Y1KP	Communication and presentation skills Ji í R ži ka, Patrik Horaž ovský, Kristýna Navrátilová, Eva Haj iarová Ji í R ži ka	KZ	2	2P+0C	Z	PV
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
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
14Y1MP	Modeling Complex Assemblies and Models in Parametric Modeller	KZ	2	2P+0C	Z	PV
15Y1MK	Modern History in Context: Every Day Life and Transport Marie Michlová	KZ	2	2P+0C	L	PV
15Y1NE	German in the Economy and Society Eva Rezlerová	KZ	2	2P+0C	Z	PV
21Y1OH	Airline Business and Operations	KZ	2	2P+0C	Z	PV
20Y1OI	Peter Olexa, Eva Endrizalová Peter Olexa Fare Collection and Information Systems	KZ	2	2P+0C	L	PV
14Y1OJ	Patrik Horaž ovský, Milan Sliacky Milan Sliacky (Gar.) Object - oriented programming in JAVA	KZ	2	2P+0C	L	PV
14Y1OP	Operating System	KZ	2	2P+0C		PV
17Y10F	Personal Finance	KZ	2	2P+0C	Z	PV
20Y1OK	Road Lighting	KZ	2	2P+0C	L	PV
11Y1PV	Parametrical and Multicriterial Programming	KZ	2	2P+0C	Z	PV
17Y1PM	Olga Vraštilová Olga Vraštilová Olga Vraštilová (Gar.)	KZ	2	2P+0C		PV
	Personnel Management Pedestrian and Cycling Transport					
12Y1PC	Denis Liutov	KZ	2	2P+0C	L	PV
14Y1PG	Computer Graphics	KZ	2	2P+0C	L -	PV
14Y1P2	Computer Aid of Transportation Projecting 2	KZ	2	2P+0C	Z	PV
18Y1PS	Computer Simulations in Mechanics Petr Zlámal Petr Zlámal (Gar.)	KZ	2	2P+0C	L	PV
14Y1PI	Corporate Information System	KZ	2	2P+0C	Z	PV
14Y1PZ	Advanced Data Processing in Spreadsheets	KZ	2	2P+0C	Z	PV
21Y1PC	ATC Procedures and Activities Terézia Pilmannová Terézia Pilmannová	KZ	2	2P+0C	Z	PV
20Y1PK	Product Quality Management Processes Martin Leso Martin Leso	KZ	2	2P+0C	Z	PV
14Y1PJ	C Programming Language	KZ	2	2P+0C	Z	PV
12Y1C1	Designing Roads in Civil 3D I Tomáš Honc	KZ	2	2P+0C	L	PV
12Y1C2	Designing Roads in Civil 3D II Tomáš Honc	KZ	2	2P+0C	Z	PV
14Y1PA	3D Modeling in AutoCAD	KZ	2	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, Pemysl Toman	KZ	2	2P+0C	Z	PV
21Y1RZ	Human Resources Management	KZ	2	2P+0C	L	PV
17Y1ST	Titan Simulation	KZ	2	2P+0C	L	PV
21Y1SI	ATC Simulator Terézia Pilmannová	KZ	2	2P+0C	L	PV
20Y1SC	Sensors and Actuators	KZ	2	2P+0C	L	PV
17Y1SL	Sociology of Human Resources	KZ	2	2P+0C	Z	PV
11Y1SI	Transportation Software Engineering	KZ	2	2P+0C	Z	PV
16Y1KS	Quality and Reliability of Vehicles Jan Leistner, Filip Kotas, Jaroslav Machan, David Lehet	KZ	2	2P+0C	Z	PV
12Y1SU	Road Management and Maintenance Dagmar Ko árková, Otakar Vacín	KZ	2	2P+0C	L	PV
16Y1SO	Strategy and innovation in mobility	KZ	2	2P+0C	Z	PV
17Y1SK	Urban and Regional Rail Transport Systems Ji í Pospíšil Ji í Pospíšil (Gar.)	KZ	2	2P+0C	L	PV
11Y1TG	Graph Theory Lucie Kárná Lucie Kárná (Gar.)	KZ	2	2P+0C	L	PV
14Y1TI	Creating Interactive Internet Applications	KZ	2	2P+0C	L	PV
21Y1UL	Aircraft Maintenance Tomáš T ma	KZ	2	2P+0C	L	PV
14Y1UP	Editing of Theses in MS Word	KZ	2	2P+0C	L	PV
18Y1UK	Introduction of Rail Vehicles Jitka ezní ková, Josef Kolá, Josef Kolá Josef Kolá (Gar.)	KZ	2	2P+0C	L	PV
12Y1VR	Public Transport in Cities and Regions Vladimír Pušman	KZ	2	2P+0C	Z	PV
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 Šárka Vorá ová (Gar.)	KZ	2	2P+0C	L	PV
14Y1ZJ	Fundamentals of programming in JAVA	KZ	2	2P+0C	Z	PV
12Y1ZU	Principles of Urbanism Karel Hájek	KZ	2	2P+0C	Z	PV
15Y1ZV	East-West dichotomy: Prelude to the Cold War Marie Michlová	KZ	2	2P+0C	Z	PV
16Y1ZL	Vehicle Testing, Legislation and Construction Zuzana Radová, Josef Mík	KZ	2	2P+0C	Z	PV

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

7/20		
Aeronautical Information Management (AIM)	KZ	2
rview of AIS and AIM. Transition from AIS to AIM. Regulatory base. Provision of AIS/AIM in the Czech Rep. AIP (Aeronautica	Inf. Publication).	VFR Manual of
System. NOTAM messages.PIB (Pre-flight Informtion Bulletin). AIC (Aeoronautical Inf. Circulars). Aeronautical Charts. EAD (E	Europena AIS Da	tabase). QMS
ADQ (Aeronautical Data Quality). AIXM (Aeronautical Inf. Exchnage Format).		
Active participation in a scientific project, workshop, short-term trip abroad	KZ	2
Alternative Forms of Transportation Project Financing	KZ	2
forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt pa	yments come fro	m its budget but
direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of s	ecurities as an al	ternative source
lecomunication projects.		
Anatomy, Mobility and Safety of Man	KZ	2
mical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circulati	on and nervous s	ystem. Structure
uscular-skeletal system. Injury of human organs and musculo-skeletal system during traffic accidents. Mobility of ill and injure	d man and his tre	atment. Human
tive means and traffic safety regulations.		
Animation and Visualization	KZ	2
and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and	Space Warp obje	cts. Atmospheric
ring filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animation	using Inverse K	inematics.
Applied Ecology	KZ	2
gical concepts and principles, ecosystem, ecological factors, energy flow through the ecosystem. Application of knowledge w	ithin EIA docume	entation. Special
ology - origin and historical development. Landscape definition and classification. Success. Traffic constructions in the country	side. Landscape	and nature
ogy.		
	Aeronautical Information Management (AIM) rview of AIS and AIM. Transition from AIS to AIM. Regulatory base. Provision of AIS/AIM in the Czech Rep. AIP (Aeronautical System. NOTAM messages.PIB (Pre-flight Informtion Bulletin). AIC (Aeoronautical Inf. Circulars). Aeronautical Charts. EAD (EADQ (Aeronautical Data Quality). AIXM (Aeronautical Inf. Exchnage Format). Active participation in a scientific project, workshop, short-term trip abroad Alternative Forms of Transportation Project Financing forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of secomunication projects. Anatomy, Mobility and Safety of Man mical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circulative sucular-skeletal system. Injury of human organs and musculo-skeletal system during traffic accidents. Mobility of ill and injure tive means and traffic safety regulations. Animation and Visualization and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and ring filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animation Applied Ecology gical concepts and principles, ecosystem, ecological factors, energy flow through the ecosystem. Application of knowledge worldgy - origin and historical development. Landscape definition and classification. Success. Traffic constructions in the country.	Aeronautical Information Management (AIM) rview of AIS and AIM. Transition from AIS to AIM. Regulatory base. Provision of AIS/AIM in the Czech Rep. AIP (Aeronautical Inf. Publication). System. NOTAM messages.PIB (Pre-flight Informtion Bulletin). AIC (Aeoronautical Inf. Circulars). Aeronautical Charts. EAD (Europena AIS Data ADQ (Aeronautical Data Quality). AIXM (Aeronautical Inf. Exchnage Format). Active participation in a scientific project, workshop, short-term trip abroad KZ Alternative Forms of Transportation Project Financing forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt payments come fro direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of securities as an all ecomunication projects. Anatomy, Mobility and Safety of Man mical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circulation and nervous suscular-skeletal system. Injury of human organs and musculo-skeletal system during traffic accidents. Mobility of ill and injured man and his treative means and traffic safety regulations. Animation and Visualization Animation and Visualization And modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and Space Warp objecting filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animation using Inverse Ki Applied Ecology gical concepts and principles, ecosystem, ecological factors, energy flow through the ecosystem. Application of knowledge within EIA docume logy - origin and historical development. Landscape definition and classification. Success. Traffic constructions in the countryside. Landscape

20Y1AE Applied Electronics	KZ	2
Basic electronic semiconductor components, their principles, characteristics and typical connection diagrams. Semiconductor PN junction diodes,		=
amplifiers, basic logic gates. Functions of basic electronic circuits and methods for their designs (rectifiers, voltage regulator with Zener diode, tran amplifier as an inverting and noninverting amplifier).	sistor as an amplifi	er, operational
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. Studies	ı	I
of barrierless environment roads, railway stations, public transport stops, terminal buildings, vehicles, public transport, information and orientation sys	-	-
Theoretical knowledge 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	1	n programmes,
health insurance of home and foreign business trips, statistics, working practice.		
11Y1BK Error Detection Codes for Interlocking Systems	KZ	2
Safe communication and methods for its assuring. Safety codes linear codes, cyclic codes, BCH codes, Reed-Solomon codes. Transmission channels are communication and methods for its assuring.	els, detection of tran	nsmission errors,
probability of undetected error. Design and assessment of detection codes; requirements of the European standard EN 50159.		T
21Y1BS Unmanned aircraft systems 1	KZ	2
Unmanned Aviation Development. Aircraft design. Legislation in force in the Czech Republic. Planning and execution of the flight. Airspace division	. Operational risks	and operational
procedures. Practical flights.	1/7	
14Y1BM Biometric Methods Basic biometric terms, authentication methods, principles and performance measurement of biometric systems, overview of biometric technologies	KZ	2
retina recognition method, 2D and 3D face recognition, vein patterns on the wrist, ear biometrics, fingerprint recognition, skin spectroscopy, behav		_
in transport applications, safety and risks of biometric technologies.	0.00.0000, 0.00	200 01 210111011100
15Y1DZ History of Railway	KZ	2
Horse-drawn railways, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First F	ı	I
War II railways, railway development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train cor	nections, railway lir	nes construction,
railway accidents, railway 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 proc	ess. Budget and pr	icing. Practical
creation of some project documentation parts.		
20Y1EK Qualification in Electrical Engineering	KZ	2
Practical experience with measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock haz	=	_
voltage, maximum allowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legi in relation to health and safety and electrical engineering.	Siation, Standards o	and regulations
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 er		_
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, probab	oilistic forecasts, for	ecast evaluation.
Air quality, main pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and trans	sportation 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, communis		
goals. Europe after Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war a	nd its consequence	es for Europe.
New quality of French-German relationship - a driving power of starting European integration.	1/7	
18Y1EM Experimental Methods in Mechanics The purpose and role of synationatal methods. Second for methods of synations to be a few attentions of synatting and non-destructions.	KZ	2
The purpose and role of experimental mechanics. Sensors for mechanical testing. Overview of experimental methods. Destructive and non-destructive experimental procedures and sample preparation. Tensile and bending tests. Electrical resistance strain gages. Optical based strain measurement	_	_
Instrumented hardness testing. Introduction to electron microscopy. Errors in measurement.	. I aligue allu illeliill	ie prediction.
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	1	Į.
French society and culture. Current political system. System of education, studying in France. Selected authors of French literature. French gastror	<u>-</u>	0.
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	ite 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	-	=
World airports. Famous aviators. Helicopters. CSA airplanes. Development of aircrafts in Czechoslovakia between the years 1945-1989. Classic er	a of aviation. Golde	en era of civil
aviation. Modern era of civil aviation. Airline companies. Supersonic flying.	1/7	
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 transport clearance systems. History of city transport in Prague and Brno. History of tram, bus and trolley-bus operation systems in the Czech Republic and	· · · · · · · · · · · · · · · · · · ·	ents of tariii and
12Y1HD Traffic Noise	KZ	2
Acoustic introduction, basic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regul	1	Į.
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 the	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 possibilities and	I 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		g methods.
Simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive sin		
12Y1KN Combined Transportation Combined transport strategy and legislation. Load units. Means of transport in combined transport. Combined transport systems. Transshipping are	KZ	2 istic centres
Somewhole transport strategy and registration, bear arms, weaths of transport in combined transport. Combined transport systems. If all Sallipping and	200. ividitii iibuai 109	

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		
networks and beyond. Communication strategy of transport projects. Systematic goodwill building. Crisis situations in communication and preparati	on for crisis comm	unication. The
influence of political marketing and political PR on transport projects. Lobbing.	1/7	
20Y1KP Communication and presentation skills	KZ	2 of paragnalities
Motivation, priorities and their fulfillment, current communication networks, work with various sources, formal requirements of emails and final these teamwork, emotional intelligence, manipulation and way of working with it, coping with stressful situations, formal requirements of presentations, w		
presentation, presentation skills, presentation skills in online environment.	ays or communical	ion during
21Y1LJ Aeronautical Radio and Flight Instruments	KZ	2
Basic definitions, history of aircraft instrumentation, aerometric instrumentation, Earth magnetism, aircraft electric equipment, gyroscopic instrument	1	1
other aircraft equipment, engine instrumentation, warning and recording systems, instrumentation operational requirements, radiocommunication a	nd radionavigation	ı.
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 a ACC contro	ol. History of ATS
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	transport process	passengers and
air cargo. Information systems in air transport. Global distribution systems.	1/7	
20Y1LN Location and Navigation Description and examples of road networks, localization on the network. Routing algorithms, their properties and implementation. Description and of the networks are considered as a second	KZ	2
transport connections, routing algorithms, their properties and implementation.	examples of datase	ets for finding
17Y1MD Marketing in Transportation	KZ	2
General principles of marketing applied to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transport	1	I
the application of marketing.		.g
18Y1MT Engineering Materials	KZ	2
Systematic overview of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers	and composites,	attention is paid
to biological materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's selection	on charts.	
21Y1MP Matlab for project-oriented study	KZ	2
The subject's syllabus is focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exerc	cises will be prepar	ed according to
particular examples, based on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improve		
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, pip	elines, and distrib	ution lines.
Photorealistic output rendering - physical and material properties, lighting sources. MKP - visual example.	1/7	
15Y1MK Modern History in Context: Every Day Life and Transport Historical overview of modern history of every day life, science, technology and transport in a wider context.	KZ	2
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 semanti		
selected topics.	o analysis of toxis.	Diocuscion on
21Y10H 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 organization	1	1
various aspects of their strategy, economic and operational indicators. It introduces students in detail to operational processes and the essentials of t	ansportation proc	esses. It provides
a basic view of the economic aspects of air transport.	,	,
20Y1OI Fare Collection and Information Systems	KZ	2
Fare collection systems in public transport and their components (on-board units, validators, turnstiles,). Information systems and their compone	•	tables, maps,
panels) and operators (cycles, location or current delay of vehicles,). The issue of tariff systems. Other examples of clearance systems (parking the control of the control of tariff systems).	7	
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	-	
14Y1OP Operating System	KZ	2
Distributions. Installation GNU/Linux OS. X-window system. Rights management - users and groups, ACL rights. Filesystems and attributes. Progra	1	1
runlevels. Basic console programs / commands. Config files. SW management, package systems. Programs in graphic shell - text, spreadsheet, graphic shell - t	•	
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 l	ousing (rent, mor	gage, savings,
consumer loans, refinancing), savings and investments (investment horizon, return, risk, investment strategy), insurance (insurance types, suitability	and adequacy), se	ecuring the future
(retirement savings and insurance).	1	1
20Y1OK Road Lighting	KZ	2
Basic lighting quantities and terms, street lighting components (luminaires, control cabinets for street lighting, street lighting cables), characteristics of	-	_
light distribution), standards, measurement of illuminance and luminance in road lighting, tunnels, conceptual approach to street lighting design, lig Relux, street lighting control systems.	nting calculations	n DIALUX and
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 constrain	1	I .
17Y1PM Personnel Management	KZ	2
Human sources, work group, man as personality, planning, choice, evaluation and education of human sources, work adaptation, teamwork, interc	1	1
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	1	I
for cyclists. Separation of cyclists from other transport modes. Cycle tracks and its design - one way streets, reserved traffic lanes, bus stops, cross	ings with other tra	nsport modes,
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 elevel scope) using layers, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics cards.	diting programs (v	ithin the user

14Y1P2 Computer Aid of Transportation Projecting	·	KZ	2
Overview of CAx application for transportation projecting aid. AutoCAD environ modification (attributes, relation to databases). Work in projecting group, extern			
section). Basics of 3D modelling.	ar rolor or local Basic as a samma neares. Projecting (coolean namen		arra rorrigitadiriai
18Y1PS Computer Simulations in Mechanics		KZ	2
Principles and overview of tools for stress analysis of structures. Numerical me from other CAE systems. Assignment of material properties. The types of elem	·		
tasks of structural and modal analysis. Introduction to complex nonlinear problem		і арріісаціон о	Title IDau. Dasic
14Y1PI Corporate Information System		KZ	2
Data-information-knowledge, components of information system, syntatic and			-
(personalistic, production, storage, etc.), corporate information politic and information system, information system security, data protection, safety p	• • • • • • • • • • • • • • • • • • • •	information sy	stem operation,
14Y1PZ Advanced Data Processing in Spreadshe		KZ	2
Students will be familiar with principles of working in a spreadsheet. Graphic la	l l		
addressing, error detection. Working with large spreadsheets, filters, advanced	ilters, database functions. Pivot tables and charts, conditional formatting, so	olution finding,	, solver, macros,
data analysis. Examples and questions from various companies and training. 21Y1PC ATC Procedures and Activities		KZ	2
21Y1PC ATC Procedures and Activities Air traffic control procedures, basics of communication and phraseology, aircra	 ft identification. spacing and traffic coordination. In addition, the course dis	ı	
the airports and low visibility operational procedures. Students will during the			
20Y1PK Product Quality Management Processes		KZ	2
General principles of organization management. Management systems and int			
of standards for systems management, management principles. Principles of profor systems management. Process management principles. Metrology and tes		milorm iramew	OIK OI Standards
14Y1PJ C Programming Language		KZ	2
C programming language. Preprocessor, basics of the C language (data types,		ıg, files, structu	ures and unions.
Implementations of abstract data types (FIFO, LIFO, list), programming technic	ques (sorting, searching, recursion), using bitwise oprerators.	147	
12Y1C1 Designing Roads in Civil 3D I The course is devoted to the traffic buildings design field, specifically the design	n of roads as such, by the means of a 3D software. Students on through t	KZ	2 lesion of this
particular linear building, from the initial situation, over the longitudinal section,	-	-	-
explanation of the traffic building design in the real-life profession.	. ,		
12Y1C2 Designing Roads in Civil 3D II		KZ	2
The course is devoted to the traffic buildings design field, specifically the design particular linear building, from the initial situation, over the longitudinal section,	-		_
improved and developed. Students learn to design intersections.	to the model and work sections and the cubic capacity calculation. The pr	reviously acqu	illeu skilis ale
14Y1PA 3D Modeling in AutoCAD		KZ	2
Work in 3D non-parametric modeller (AutoCAD) environment, scenes rendering		ata creation, w	ork with data
connected with external database. Basic definition of work with lights, material		1/7	
16Y1PV Operation, Construction and Maintenance Methods of vehicle production. Vehicle maintenance. Vehicle diagnostics. Main	· ·	KZ	2 on mechanism
General principles of engine diagnostics.	ionologo ana ropan piano. Engine maintenance ana emiceren measaremen		
12Y1PU Organization Disposition of Railway Static		KZ	2
Connecting station. Passenger transport equipment. Freight transport equipme			ation yards.
Reserve stations. Technology of work in railway station with regard to its disposal 12Y1RU Railway Lines Reconstruction	sition. Railway station documentations in the Czech Republic failway helw	KZ	2
Keeping railway line operational, maintaining lines and stations, geometrical al	ا ignment of railway line, vehicles for railway superstructure and substructur	ı	
and organising possesions, preparation of railway lines reconstruction and ma	ntenance, process of ralway line reconstruction.		
16Y1RE Control and Electronic Vehicle Systems		KZ	2
Elementary concepts of regulation. Tools for analytical solution, linear system de		ntages, function	
and hybrid drive control. Electric drive Vehicle communication bus (CAN LIN	rioxitaly, 1000as, 11111 2000 protocolo dicij. Verilolo dicetrorilo certifol, can	ety communic	
and hybrid drive control. Electric drive. Vehicle communication bus (CAN, LIN, comfort systems.		ety, communic	ation and
		ety, communic	2
comfort systems. 21Y1RZ		KZ nt. Internal and	2 d external
comfort systems. 21Y1RZ Human Resources Management The position of human resources in the organization and related disciplines fill environment of human resource management. Human resource planning. Sear	ch, recruitment and selection of employees. Motivation, evaluation and rem	KZ nt. Internal and	2 d external
comfort systems. 21Y1RZ	ch, recruitment and selection of employees. Motivation, evaluation and rem	KZ nt. Internal and nuneration of s	2 d external staff. Positioning,
comfort systems. 21Y1RZ Human Resources Management The position of human resources in the organization and related disciplines fill environment of human resource management. Human resource planning. Sear	ch, recruitment and selection of employees. Motivation, evaluation and remarker management.	KZ nt. Internal and nuneration of s	2 d external taff. Positioning,
comfort systems. 21Y1RZ Human Resources Management The position of human resources in the organization and related disciplines file environment of human resource management. Human resource planning. Sear dismissal and redundancies of employees. Education of employees. Planning of 17Y1ST Titan Simulation Titan is a management game simulating the business decisions. Lets 2-8 studdetermine the quantity and capacity of production, plan budgets for marketing,	ch, recruitment and selection of employees. Motivation, evaluation and remarker management. ent groups to produce and compete in the market with the same product. Some research and development. They become familiar with the consequences	KZ nt. Internal and nuneration of s KZ Students set a	2 d external ttaff. Positioning, 2 price and
comfort systems. 21Y1RZ Human Resources Management The position of human resources in the organization and related disciplines file environment of human resource management. Human resource planning. Sear dismissal and redundancies of employees. Education of employees. Planning of 17Y1ST Titan Simulation Titan is a management game simulating the business decisions. Lets 2-8 studdetermine the quantity and capacity of production, plan budgets for marketing, of financial corporate reports and they use this information for other business of	ch, recruitment and selection of employees. Motivation, evaluation and remarker management. ent groups to produce and compete in the market with the same product. Some research and development. They become familiar with the consequences	KZ nt. Internal and nuneration of s KZ Students set a s of their decisi	2 d external ttaff. Positioning, 2 price and ons by the form
comfort systems. 21Y1RZ Human Resources Management The position of human resources in the organization and related disciplines file environment of human resource management. Human resource planning. Sear dismissal and redundancies of employees. Education of employees. Planning of 17Y1ST Titan Simulation Titan is a management game simulating the business decisions. Lets 2-8 stude determine the quantity and capacity of production, plan budgets for marketing, of financial corporate reports and they use this information for other business of 21Y1SI ATC Simulator	ch, recruitment and selection of employees. Motivation, evaluation and remarker management. ent groups to produce and compete in the market with the same product. Suresearch and development. They become familiar with the consequences elections.	KZ nt. Internal and nuneration of s KZ Students set a s of their decisi	2 d external ttaff. Positioning, 2 price and tons by the form
comfort systems. 21Y1RZ Human Resources Management The position of human resources in the organization and related disciplines file environment of human resource management. Human resource planning. Sear dismissal and redundancies of employees. Education of employees. Planning of 17Y1ST Titan Simulation Titan is a management game simulating the business decisions. Lets 2-8 studdetermine the quantity and capacity of production, plan budgets for marketing, of financial corporate reports and they use this information for other business of	ch, recruitment and selection of employees. Motivation, evaluation and remarker management. ent groups to produce and compete in the market with the same product. Suresearch and development. They become familiar with the consequences elections. decisions.	KZ nt. Internal and nuneration of s KZ Students set a s of their decisi KZ f RNAV points.	2 d external staff. Positioning, 2 price and sions by the form 2 . Practical
comfort systems. 21Y1RZ Human Resources Management The position of human resources in the organization and related disciplines file environment of human resource management. Human resource planning. Sear dismissal and redundancies of employees. Education of employees. Planning of 17Y1ST Titan Simulation Titan is a management game simulating the business decisions. Lets 2-8 stude determine the quantity and capacity of production, plan budgets for marketing, of financial corporate reports and they use this information for other business of 21Y1SI ATC Simulator Familiarization with the simulation environment, acquiring basic habits, aircraft exercises focusing on basic vectoring, early application of vertical separation, departure management procedures, conflict resolution.	ch, recruitment and selection of employees. Motivation, evaluation and remarker management. ent groups to produce and compete in the market with the same product. Suresearch and development. They become familiar with the consequences elections. decisions.	KZ nt. Internal and nuneration of s KZ Students set a s of their decisi KZ f RNAV points. rea, practicing	2 d external ttaff. Positioning, 2 price and ions by the form 2 Practical arrival and
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comfort systems. 21Y1RZ Human Resources Management The position of human resources in the organization and related disciplines file environment of human resource management. Human resource planning. Sear dismissal and redundancies of employees. Education of employees. Planning of 17Y1ST Titan Simulation Titan is a management game simulating the business decisions. Lets 2-8 stude determine the quantity and capacity of production, plan budgets for marketing, of financial corporate reports and they use this information for other business of 21Y1SI ATC Simulator Familiarization with the simulation environment, acquiring basic habits, aircraft exercises focusing on basic vectoring, early application of vertical separation, departure management procedures, conflict resolution.	ch, recruitment and selection of employees. Motivation, evaluation and remarker management. ent groups to produce and compete in the market with the same product. Seresearch and development. They become familiar with the consequences decisions. identification procedures, vectoring, level changes, ATC clearance, use of EST and REV message passing. Practical exercises in the APPROACH are lucinose. The respective technologies and construction principles. Sensors of	KZ nt. Internal and nuneration of s KZ Students set a a of their decision of their	2 d external ttaff. Positioning, 2 price and ions by the form 2 Practical arrival and
21Y1RZ Human Resources Management The position of human resources in the organization and related disciplines file environment of human resource management. Human resource planning. Sear dismissal and redundancies of employees. Education of employees. Planning of 17Y1ST Titan Simulation Titan is a management game simulating the business decisions. Lets 2-8 stude determine the quantity and capacity of production, plan budgets for marketing, of financial corporate reports and they use this information for other business of 21Y1SI ATC Simulator Familiarization with the simulation environment, acquiring basic habits, aircraft exercises focusing on basic vectoring, early application of vertical separation, departure management procedures, conflict resolution. 20Y1SC Sensors and Actuators Principles of sensors and actuators. Basics of measuring theory and actuating in	ch, recruitment and selection of employees. Motivation, evaluation and remarker management. ent groups to produce and compete in the market with the same product. Seresearch and development. They become familiar with the consequences decisions. identification procedures, vectoring, level changes, ATC clearance, use of EST and REV message passing. Practical exercises in the APPROACH are lucinose. The respective technologies and construction principles. Sensors of	KZ nt. Internal and nuneration of s KZ Students set a a of their decision of their	2 d external ttaff. Positioning, 2 price and ions by the form 2 Practical arrival and
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21Y1RZ	ch, recruitment and selection of employees. Motivation, evaluation and remarker management. ent groups to produce and compete in the market with the same product. Some research and development. They become familiar with the consequences decisions. identification procedures, vectoring, level changes, ATC clearance, use of EST and REV message passing. Practical exercises in the APPROACH and the procedures of the procedures of the procedures of the procedures of the procedures. Sensors of the procedures of the p	KZ Int. Internal and nuneration of s KZ Students set a a of their decision of their	2 d external ttaff. Positioning, 2 price and ons by the form 2 . Practical arrival and 2 lectro-magnetic, 2 olanning, culture
21Y1RZ	ch, recruitment and selection of employees. Motivation, evaluation and remarker management. ent groups to produce and compete in the market with the same product. Some research and development. They become familiar with the consequences decisions. identification procedures, vectoring, level changes, ATC clearance, use of EST and REV message passing. Practical exercises in the APPROACH are luence. The respective technologies and construction principles. Sensors of sumatic and hydraulic actuators and solid phase elements.	KZ Int. Internal and nuneration of s KZ Students set a set of their decision of the	2 d external ttaff. Positioning, 2 price and ions by the form 2 Practical arrival and 2 lectro-magnetic, 2 planning, culture

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16Y1KS Quality and Reliability of Vehicles	KZ	2
Quality and reliability theory in design, development, production and operation of vehicles. Definition and possible approach to quality and reliability Mode and Effects Analysis), QFD (Quality Function Deployment), DFx (Design for Assamly, Manufacturying, Quality, Services) and other method		
Knowledge-based systems of quality and reliability, data collection.	us useu III IIIuusiiia	і арріісацогіѕ.
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 devel	opment of road ne	twork, short,
medium and long-term strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and requirements.	epair methods are	discussed in the
classroom as well as investment activity in highway engineering.		
16Y1SO Strategy and innovation in mobility	KZ	2 (Dia hardwate
Introduction to innovation, definition. Innovation strategy. Innovation life cycle and ecosystem, main sources and funding opportunities. Successful i co-financing, evaluation. Sprint method and its use. Innovative business model - main patterns and examples, design, strategy, processes and outlo		_
of use). Creating an innovation strategy. Customer and value map, design and testing.	son (buoinees plan	and possibilities
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 management	, 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 trans	port preferences. T	he role of
marketing.	· · · -	
11Y1TG Graph Theory	KZ	2
Basic concepts and terminology of graph theory, graph representation. Problems of graph theory, problem instance. Graph search algorithms, trees path problem, Eulerian path, bipartite graph matching, flow networks, circulations, critical path method, traveling salesman problem. Problem of existen		-
for their solving. Computational complexity, dealing with NP-complete problems, heuristic approach.	ioo ana opiiiniizano	aa a.ge
14Y1TI Creating Interactive Internet Applications	KZ	2
Possibilities of scripting language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions	. Your own applicat	ion programmed
in PHP language.	,	
21Y1UL Aircraft Maintenance	KZ	2
Aircraft operations and technical operations. Maintenance and work processes. Defects search methods, status check diagnostic tools. Selection and	· ·	-
Basic documentation for maintenance. Optimization of time maintenance intervals. Regulation no. 1321/2014 Part 145. Human factors of aircraft maintenance. Seminars will be focused on practical application.	airiteriarice. Regula	tion of director
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, cr	1	
figures, tables, graphs, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamlest	ss editing dissertati	ons and theses,
so that they are able to concentrate mainly on writing a thesis.	,	
18Y1UK Introduction of Rail Vehicles	KZ	2
Basic characteristics and parameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion		-
track resistance. Total running resistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehi and electric drive. Design concept rail vehicles and drive of wheel set.	cie - riyurorriecharii	c, flydiodyffaifiic
12Y1VR Public Transport in Cities and Regions	KZ	2
Professional and political pillars of public transport. Accessibility of public transport. Transport demand management and directional coordination of	I I	
Basic operating parameters and transport variations. Types of lines according to their routing and basic operating parameters. Time coordination of	lines. Operational	traffic control.
Organization of tram operation in Prague. Tram safety.		
14Y1VM Development of Applications for Mobile Devices	KZ	. 2
Object oriented programming, Java programming language, development environment, operating system Android, development application - widge permissions, services, GUI.	ets, containers, thre	ads, menu,
16Y1VT Development in Railroad Vehicles	KZ	2
Railroad vehicles traction. Railroad vehicle parametres regulation. Control and driving of railroad vehicles. Importance in heavy duty and personal tractions.	1	
assesment. New materials in design. International standardization.		
14Y1WG Webdesign	KZ	2
Students will learn the basics of HTTP communication, URL and addressing, HTML5 markup language, advanced CSS3 techniques, accessible and addressing advanced CSS3 techniques, accessible and addressing advanced CSS3 techniques, accessible and addressing advanced CSS3 techniques.	nd usable web rules	s, responsive
webdesign, content management systems, web server installation + configuration directives. The subject matter will be trained on examples.		
14Y1W1 Webdesign 1	KZ	2
Students will learn the basics of communication HTTP, URL and addressing, markup languages HTML and XHTML, HTML tags, rules of web access and selectors, the issue of web browsers, creating one to three column layout pages, sites validation, conditional comments. Topics will be practice		
	a on practical chan	·
	K7	
14Y1W2 Webdesign 2	KZ b server installation	2 n + configuration
	1	
14Y1W2 Webdesign 2 Students will learn advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, we	1	
14Y1W2 Webdesign 2 Students will learn advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, we directives. Topics will be practiced on practical examples.	b server installation	+ configuration
14Y1W2 Webdesign 2 Students will learn advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, we directives. Topics will be practiced on practical examples. 16Y1ZG Introduction into Applied Computer Graphics Computer graphics, division and applications with emphasis on transport, including development and research. Colours, colour perception, colours and 3D generation, elementary algorithms for graphic data workout. Visualisation principles and tasks, technics, graphics and visualisation HW bases.	kZ schemes, models, p	2 principles of 2D
14Y1W2 Webdesign 2 Students will learn advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, we directives. Topics will be practiced on practical examples. 16Y1ZG Introduction into Applied Computer Graphics Computer graphics, division and applications with emphasis on transport, including development and research. Colours, colour perception, colours and 3D generation, elementary algorithms for graphic data workout. Visualisation principles and tasks, technics, graphics and visualisation HW bas graphics software.	KZ schemes, models, poics. Introduction to	2 principles of 2D 2D and 3D
14Y1W2 Webdesign 2 Students will learn advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, we directives. Topics will be practiced on practical examples. 16Y1ZG Introduction into Applied Computer Graphics Computer graphics, division and applications with emphasis on transport, including development and research. Colours, colour perception, colour and 3D generation, elementary algorithms for graphic data workout. Visualisation principles and tasks, technics, graphics and visualisation HW bas graphics software. 14Y1ZM Fundamentals of parametric and adaptive modeling	KZ schemes, models, pics. Introduction to	2 principles of 2D 2D and 3D
14Y1W2 Webdesign 2 Students will learn advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, we directives. Topics will be practiced on practical examples. 16Y1ZG Introduction into Applied Computer Graphics Computer graphics, division and applications with emphasis on transport, including development and research. Colours, colour perception, colours and 3D generation, elementary algorithms for graphic data workout. Visualisation principles and tasks, technics, graphics and visualisation HW bas graphics software.	KZ schemes, models, pics. Introduction to	2 principles of 2D 2D and 3D
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14Y1W2 Webdesign 2 Students will learn advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, we directives. Topics will be practiced on practical examples. 16Y1ZG Introduction into Applied Computer Graphics Computer graphics, division and applications with emphasis on transport, including development and research. Colours, colour perception, colours and 3D generation, elementary algorithms for graphic data workout. Visualisation principles and tasks, technics, graphics and visualisation HW bas graphics software. 14Y1ZM Fundamentals of parametric and adaptive modeling Basics of work at products and parts creation. Sketch drawing by help of geometric relations, parametric dimensions, creation of adaptive models from and to another systems. Fundamentals of assemblies creation.	KZ schemes, models, p sics. Introduction to KZ om 2D sketches. In	2 principles of 2D 2D and 3D 2 proport and export
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14Y1W2 Webdesign 2 Students will learn advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, we directives. Topics will be practiced on practical examples. 16Y1ZG Introduction into Applied Computer Graphics Computer graphics, division and applications with emphasis on transport, including development and research. Colours, colour perception, colour sand 3D generation, elementary algorithms for graphic data workout. Visualisation principles and tasks, technics, graphics and visualisation HW bas graphics software. 14Y1ZM Fundamentals of parametric and adaptive modeling Basics of work at products and parts creation. Sketch drawing by help of geometric relations, parametric dimensions, creation of adaptive models from and to another systems. Fundamentals of assemblies creation. 11Y1ZM Foundation of MATLAB Programming To explain the principle of algorithmization, flow charts, description of MATLAB environment and its settings, MATLAB help, mathematical operators, control flow, inputs and outputs, graphics, optimization and program code debugging. 14Y1ZJ Fundamentals of programming in JAVA Introduction to the Java SE Platform. IDE Installation and First Project. Comments. Variables and Type System. Operators. User Input and Parsing.	KZ schemes, models, poics. Introduction to KZ om 2D sketches. In KZ matrices and elem KZ Chain and Chain C	2 principles of 2D 2D and 3D 2 proport and export 2 ents operations, 2 onversion. Text
14Y1W2 Webdesign 2 Students will learn advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, we directives. Topics will be practiced on practical examples. 16Y1ZG Introduction into Applied Computer Graphics Computer graphics, division and applications with emphasis on transport, including development and research. Colours, colour perception, colour and 3D generation, elementary algorithms for graphic data workout. Visualisation principles and tasks, technics, graphics and visualisation HW bas graphics software. 14Y1ZM Fundamentals of parametric and adaptive modeling Basics of work at products and parts creation. Sketch drawing by help of geometric relations, parametric dimensions, creation of adaptive models from and to another systems. Fundamentals of assemblies creation. 11Y1ZM Foundation of MATLAB Programming To explain the principle of algorithmization, flow charts, description of MATLAB environment and its settings, MATLAB help, mathematical operators, control flow, inputs and outputs, graphics, optimization and program code debugging. 14Y1ZJ Fundamentals of programming in JAVA Introduction to the Java SE Platform. IDE Installation and First Project. Comments. Variables and Type System. Operators. User Input and Parsing. Chain and Mathematical Methods. Terms. Relational Operators and Switches. Cycles for, while, foreach. Field - declaration, initialization, methods for the proper content of	KZ schemes, models, poics. Introduction to KZ om 2D sketches. In KZ matrices and elem KZ Chain and Chain C	2 principles of 2D 2D and 3D 2 proport and export 2 ents operations, 2 onversion. Text
14Y1W2 Webdesign 2 Students will learn advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, we directives. Topics will be practiced on practical examples. 16Y1ZG Introduction into Applied Computer Graphics Computer graphics, division and applications with emphasis on transport, including development and research. Colours, colour perception, colour and 3D generation, elementary algorithms for graphic data workout. Visualisation principles and tasks, technics, graphics and visualisation HW bas graphics software. 14Y1ZM Fundamentals of parametric and adaptive modeling Basics of work at products and parts creation. Sketch drawing by help of geometric relations, parametric dimensions, creation of adaptive models from and to another systems. Fundamentals of assemblies creation. 11Y1ZM Foundation of MATLAB Programming To explain the principle of algorithmization, flow charts, description of MATLAB environment and its settings, MATLAB help, mathematical operators, control flow, inputs and outputs, graphics, optimization and program code debugging. 14Y1ZJ Fundamentals of programming in JAVA Introduction to the Java SE Platform. IDE Installation and First Project. Comments. Variables and Type System. Operators. User Input and Parsing. Chain and Mathematical Methods. Terms. Relational Operators and Switches. Cycles for, while, foreach. Field - declaration, initialization, methods for parameters, return value, recursion. Program creation.	KZ schemes, models, poics. Introduction to KZ om 2D sketches. In KZ matrices and elem KZ Chain and Chain Cor field work. ASCI	2 principles of 2D 2D and 3D 2 proport and export 2 ents operations, 2 onversion. Text . Functions,
14Y1W2 Webdesign 2 Students will learn advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, we directives. Topics will be practiced on practical examples. 16Y1ZG Introduction into Applied Computer Graphics Computer graphics, division and applications with emphasis on transport, including development and research. Colours, colour perception, colour and 3D generation, elementary algorithms for graphic data workout. Visualisation principles and tasks, technics, graphics and visualisation HW bas graphics software. 14Y1ZM Fundamentals of parametric and adaptive modeling Basics of work at products and parts creation. Sketch drawing by help of geometric relations, parametric dimensions, creation of adaptive models from and to another systems. Fundamentals of assemblies creation. 11Y1ZM Foundation of MATLAB Programming To explain the principle of algorithmization, flow charts, description of MATLAB environment and its settings, MATLAB help, mathematical operators, control flow, inputs and outputs, graphics, optimization and program code debugging. 14Y1ZJ Fundamentals of programming in JAVA Introduction to the Java SE Platform. IDE Installation and First Project. Comments. Variables and Type System. Operators. User Input and Parsing. Chain and Mathematical Methods. Terms. Relational Operators and Switches. Cycles for, while, foreach. Field - declaration, initialization, methods for the proper content of	KZ schemes, models, prices. Introduction to KZ om 2D sketches. In KZ matrices and elem KZ Chain and Chain Cor field work. ASCI	2 principles of 2D 2D and 3D 2 proport and export 2 pents operations, 2 proversion. Text 1. Functions, 2

15Y1ZV East-West dichotomy: Prelude to the Cold War Historical prologue, evolution of the "West" and "East" from the 1500s. Focus on the history in the period between 1850 nad 1950. Milestones and continuity of the international relations in the end of 19th century and the beginning of the 20th century. Revolutions, the causes and consequences. Scientific and technological progress, the causes and consequences. Economic and financial history. Social changes. Discussions on texts, sources. Vehicle Testing, Legislation and Construction

Vehicle, bus and motorbike costruction, aggregate computing, driving resistance, build and parameters of traction, constructional arrangement of personal cars, trucks, buses, motorbikes,

legislation in the EU and in the world, technical legislation creation, testing methods, vehicle tests, accelerated tests, mathematical modelling in testing. Name of the block: Elective courses

The role of the block: V

Code of the group: VP-BP-TET-20/21

Minimal number of credits of the block: 0

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:

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

14DPK	Digital Support for Designing of Roads and Highways	Z	0
Seminars possibili	ties of technical processing problems focused on designing of roads and highways.	'	'
14DZT	Digital Support for Railway Lines	Z	0
Seminars possibili	ties of technical processing problems solved in the field of railway lines.		
11SCFZ	Seminar of Physics	Z	0
Solving problems	on kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermodynamics.	'	'
21SLD	Seminar of Air Transport	Z	0
3,	s, terminology, basic rules. VFR / IFR. Basics of aerodynamics. Propulsion of aircraft. Aircraft design. Basics of navigation, radio	0 ,	•
	nt planning, optimization of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traf	fic management, gro	und handling,
	Airlines and economics. Space technologies.		
18SPP	Seminary from Elasticity and Strength	Z	0
-	tice. Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section o	of beam. Analysis of	deflection curve
of beam. Torsion of	f circle cross section. Combined loading. Stability of compressed bar and buckling.		
18STD	Seminary from Technical Documentation	Z	0
Technical standard	ds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimen	sional and geometric	cal accuracy,
arrangement of dr	awing sheets.		
	Seminary from Structural Analysis	Z	0
18SS	Seminary from Structural Analysis tise. General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate bea	_	
18SS Examples for prac		am and simple frame	work. Application
18SS Examples for pract of principle of virtue	tise. General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beauties.	am and simple frame	work. Application
18SS Examples for pract of principle of virtu Geometry of cross	tise. General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beauly works for calculation of reactions of staticaly determinate systems. Determination of axial forces in truss construction - metr	am and simple frame	work. Application
18SS Examples for prace of principle of virtu Geometry of cross 11SSF	tise. General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beaulist works for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method sections. Plane fiber polygons.	am and simple frame	ework. Application hod of sections.
18SS Examples for prace of principle of virtu Geometry of cross 11SSF	tise. General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate bea lal works for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method sections. Plane fiber polygons. Secondary School Physics Course	am and simple frame	ework. Application hod of sections.
18SS Examples for prace of principle of virtuge Geometry of cross 11SSF Basics of kinemati	tise. General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate bernal works for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method sections. Plane fiber polygons. Secondary School Physics Course ics, dynamics, thermodynamics, electric field and magnetic field.	am and simple frame and of joints and met	ework. Application hod of sections

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
Sequence of real nu	imbers and its limit. Basic properties of mappings. Function of one real variable, its limit and derivative. Indefinite integral, Newton integ	,	ral, imprope
	Riemann integral. First-order differential equations, linear differential equations.		
11CAL2	Calculus 2	Z,ZK	5
Linear	differential equations and their systems, differential calculus of functions of several real variables. Riemann integral in Rn. Line and	surface integrals.	'
11EMO	Electromagnetic Field and Optics	Z,ZK	4
ı	Electric field. Electric current. Magnetic field. Electromagnetic field. Optics. Basics of solid-state physics.	,	1
11FYZ	Physics	Z,ZK	5
ľ	Kinematics, dynamics, Newton's laws, force fields, mechanics of continuum, thermodynamics, introduction to electrostatics and elec	ric current.	'
11GIE	Geometry	KZ	3
	try of curves - parameterization, the arc of the curve, torsion and curvature, Frenet's trihedron. Kinematics - a curve as a trajectory of	f the motion, the v	elocity, and
	acceleration of a particle moving on a curved path.		
11LA	Linear Algebra	Z,ZK	3
Vector spaces (linea	ar combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and the	r solvability. Deter	minants an
	their applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classificat	on.	
11MSP	Modeling of Systems and Processes	Z,ZK	4
System and subsyst	tem, external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of differences.	ntial and differenti	al equations
Linear and nonl	inear system, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer function	n. Stability of LTI	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, thermody	namics.	
11SEMO	Seminar of Electromagnetic Field and Optics	Z	0
·	Solving problems on electric and magnetic field, electromagnetic field, optics and basics of solid-state physics.		•
11SSF	Secondary School Physics Course	Z	0
·	Basics of kinematics, dynamics, thermodynamics, electric field and magnetic field.	•	
11STAT	Statistics	Z,ZK	4
Basics of probabili	ity Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Parame	ric tests Nonparar	netric tests
	Regression and correlation analysis		
11TGA	Graph Theory and its Applications in Transport	Z,ZK	4
Basic terms of	graph theory, paths in graphs, flows in networks, location problems, design problems on graphs, optimum routing, use of graphs in o	ther scientific disc	iplines.
11X31L	Project 1 LED	Z	2
11X32L	Project 2 LED	Z	2
11X33L	Project 3 LED	Z	2
11Y1BK	Error Detection Codes for Interlocking Systems	KZ	2
	n and methods for its assuring. Safety codes linear codes, cyclic codes, BCH codes, Reed-Solomon codes. Transmission channels, de		1
	probability of undetected error. Design and assessment of detection codes; requirements of the European standard EN 501		
11Y1PV	Parametrical and Multicriterial Programming	KZ	2
	lem of linear programming with a parameter in objective function, on right sides and in the matrix of coeficients of linear constraints. Co		1
11Y1SI	Transportation Software Engineering	KZ	2
	oftware engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and implement		_
Dasic concepts of st			

11Y1TG		1/7	2
	Graph Theory	KZ	
•	d terminology of graph theory, graph representation. Problems of graph theory, problem instance. Graph search algorithms, trees, min		
oath problem, Euler	ian path, bipartite graph matching, flow networks, circulations, critical path method, traveling salesman problem. Problem of existence ar	nd optimization a	nd algorithms
	for their solving. Computational complexity, dealing with NP-complete problems, heuristic approach.		
11Y1ZM	Foundation of MATLAB Programming	KZ	2
	iple of algorithmization, flow charts, description of MATLAB environment and its settings, MATLAB help, mathematical operators, matri	ices and element	s operations
	control flow, inputs and outputs, graphics, optimization and program code debugging.		•
12MDE	Transport Models and Transport Excesses	Z,ZK	3
	raffic flow and methods for their measurement. Models of the traffic flow, communications load, line and urban systems. Theory of qui		
	issessment. Statistical characteristics of transport. Transport excesses, their analysis, the causes, identify and minimize the conseque		-
	safety and fluency.	, , ,	
12PPOK	Designing Roads, Highways and Motorways	KZ	3
	pwnership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard		
	stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safety	-	
rtange of violentier	intersections.	dovico. Orocoiri	go, janonono
12X31L		Z	2
	Project 1 LED		+
12X32L	Project 2 LED	Z	2
12X33L	Project 3 LED	Z	2
12Y1AE	Applied Ecology	KZ	2
General ecology -	ecological concepts and principles, ecosystem, ecological factors, energy flow through the ecosystem. Application of knowledge within	n EIA documenta	tion. Special
ecology. Landsca	ape ecology - origin and historical development. Landscape definition and classification. Success. Traffic constructions in the countrys	ide. Landscape a	and nature
	protection. Applied ecology.		
12Y1C1	Designing Roads in Civil 3D I	KZ	2
ı	voted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through		1
	uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The		-
	explanation of the traffic building design in the real-life profession.		
12Y1C2	Designing Roads in Civil 3D II	KZ	2
l l	voted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through		1
	uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The p		
partioular intoar be	improved and developed. Students learn to design intersections.	oroviously asquir	oa omilo aro
12Y1DS	Project Documentation in Practice	KZ	2
121100	r roject Documentation in r ractice		
Project documents	ntion creating. Project decumentation types. Support materials for project decumentation creating. Pullding permit obtaining process		
Project documenta	ation creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process. I		1
	creation of some project documentation parts.	Budget and prici	ng. Practical
12Y1HD	creation of some project documentation parts. Traffic Noise	Budget and prici	ng. Practical
12Y1HD Acoustic introduction	creation of some project documentation parts. Traffic Noise on, basic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regulations	Budget and pricing KZ s. Creation acous	ng. Practical 2 tic climate in
12Y1HD Acoustic introduction	creation of some project documentation parts. Traffic Noise on, basic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regulations of urban acoustic, noise transmission, soundproofing. Types of noise sources in area. Determination of acoustic situation in the area of	Budget and pricing KZ s. Creation acous	ng. Practical 2 tic climate in
12Y1HD Acoustic introduction area, principles	creation of some project documentation parts. Traffic Noise on, basic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regulations of urban acoustic, noise transmission, soundproofing. Types of noise sources in area. Determination of acoustic situation in the area computing and measurement of transport noise. Acoustic studies, measuring protocol.	Budget and pricing KZ s. Creation acoust of interest. Method	ng. Practical 2 titic climate in odology of
12Y1HD Acoustic introduction area, principles	creation of some project documentation parts. Traffic Noise on, basic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regulations of urban acoustic, noise transmission, soundproofing. Types of noise sources in area. Determination of acoustic situation in the area computing and measurement of transport noise. Acoustic studies, measuring protocol. Combined Transportation	KZ s. Creation acous of interest. Metho	2 tic climate in odology of
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14ASD	Algorithm and Data Structures	KZ	3
	rze problems, design a theoretical solution to a given problem and write the resulting algorithm using flowcharts, practice reading algorithm.	-	
and use basic Boo	plean algebra to construct constraints in algorithms. Students will be introduced to the basics of the Python programming language - v will learn to work with variables of basic data types (integer, floating point and string) and the list data structure in their progra	-	loops, they
14DATS	Database Systems	KZ	2
	of database systems, conceptual model, relational data model, the principles of normal forms, relational database design, security an		
	queries, relational algebra, SQL language, client / server, multilayer architectures, distributed database systems. Access to data via		
14DPK	Digital Support for Designing of Roads and Highways	Z	0
	Seminars possibilities of technical processing problems focused on designing of roads and highways.		
14DZT	Digital Support for Railway Lines	Z	0
14PGP	Seminars possibilities of technical processing problems solved in the field of railway lines. Program Resources	7	2
	riogram Resources minded of some aspects of Pythom programming, learn basic concepts and constructs from object-oriented programming and their in	_	
	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
_	gramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python program		
here so that the pa	articipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and searc working with date and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML).	hing, tuples, sets, o	dictionaries,
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	1	
and other effect	ts, rendering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animation	n using Inverse Kin	ematics.
14Y1BE	Barrierless Transport	KZ	2
	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	-	- 1
or partieriess enviro	Theoretical knowledge will be supplemented by practical examples.	and transportation	technology.
14Y1BM	Biometric Methods	KZ	2
	erms, authentication methods, principles and performance measurement of biometric systems, overview of biometric technologies, ha	ınd geometry, iris re	ecognition,
retina recognition r	method, 2D and 3D face recognition, vein patterns on the wrist, ear biometrics, fingerprint recognition, skin spectroscopy, behavioral r	nethods, the use of	f biometrics
4.43/41.134/	in transport applications, safety and risks of biometric technologies.	1/7	0
14Y1HW	Computer Hardware ecture, basics of logical circuits design and their realization using FPGA. In detail, description of computer architecture and separate p	KZ	2 ontrollers
Computer around	arithmetic and logical units, I/O subsystem.	parts designing to	ontrollers,
14Y1MP	Modeling Complex Assemblies and Models in Parametric Modeller	KZ	2
Assemblies pro	gramming - tools and methodology of working subassemblies and assemblies, sheet metal parts modelling, welded assemblies, pipe	lines, and distributi	on lines.
4.0/4.0.1	Photorealistic output rendering - physical and material properties, lighting sources. MKP - visual example.		
14Y1OJ	Object - oriented programming in JAVA Encapsulation. Classes. Attributes. Access modifiers. Methods and overloading. Special methods (constructors, getters / setters). Ba	KZ	2 Reference
, ,	ance. Polymorphism. Statics, constants, interfaces, abstract classes, enum, packages, exceptions, collections, generics, lambda expre	•	
14Y1OP	Operating System	KZ	2
	stallation 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, graph	nic editors, sound, v	video and
14Y1P2	communication. Services management. Safe and secure configuration of OS. Remote administration. Computer Aid of Transportation Projecting 2	KZ	2
	pplication for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, dat		
	utes, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transition		
	section). Basics of 3D modelling.		
14Y1PA	3D Modeling in AutoCAD	KZ	2
Work in 3D non-p	parametric modeller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup creation, object connected with external database. Basic definition of work with lights, materials and reflexes. Models presentation.	data creation, work	with data
14Y1PG	Computer Graphics	KZ	2
	graphic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with editi	1	
	level scope) using layers, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphic	s cards.	
14Y1PI	Corporate Information System	KZ	2
	on-knowledge, components of information system, syntatic and semantic sense of data, structure of corporate information system, pa		-
(personalistic, prod	duction, storage, etc.), corporate information politic and information control, risks of information system operation, legal environment of state information system, information system security, data protection, safety politics.	iiiioimalion system	n operation,
14Y1PJ	C Programming Language	KZ	2
	nguage. Preprocessor, basics of the C language (data types, syntax, commands), functions, pointes, dynamical memory allocation, strir	1	
	Implementations of abstract data types (FIFO, LIFO, list), programming techniques (sorting, searching, recursion), using bitwise or	orerators.	
14Y1PZ	Advanced Data Processing in Spreadsheets	KZ	
	familiar with principles of working in a spreadsheet. Graphic layout of the table appearance, formatting of numbers, insertion of formustered in the table appearance, formatting of numbers, insertion of formusters, which is the conditional formatting, sometisms. Working with large spreadsheets, filters, advanced filters, database functions. Pivot tables and charts, conditional formatting, some filters, advanced filters, ad		- 1
addressing, end d	data analysis. Examples and questions from various companies and training.	oration infully, solv	, ci, iiiacius,
14Y1TI	Creating Interactive Internet Applications	KZ	2
	pting language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions. You		
	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, crea		
figures, tables, grap	ohs, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless ed so that they are able to concentrate mainly on writing a thesis.	liting dissertations	and theses,
14Y1VM	Development of Applications for Mobile Devices	KZ	2
	programming, Java programming language, development environment, operating system Android, development application - widgets		
	permissions, services, GUI.	,	,,
14Y1W1	Webdesign 1	KZ	2
Students will learn t	the basics of communication HTTP, URL and addressing, markup languages HTML and XHTML, HTML tags, rules of web accessibility	y and usability, CS	S properties
and selectors,	, the issue of web browsers, creating one to three column layout pages, sites validation, conditional comments. Topics will be practice	ed on practical exa	mples.
14Y1W2	Webdesign 2	KZ	2
Students will learn	advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, web ser	ver installation + c	configuration
4.07.000	directives. Topics will be practiced on practical examples.	1.7	
14Y1WG	Webdesign n the basics of HTTP communication, URL and addressing, HTML5 markup language, advanced CSS3 techniques, accessible and u	KZ	2
Students will lean	webdesign, content management systems, web server installation + configuration directives. The subject matter will be trained on e		esponsive
14Y1ZJ	Fundamentals of programming in JAVA	KZ	2
	Java SE Platform. IDE Installation and First Project. Comments. Variables and Type System. Operators. User Input and Parsing. Cha		
	ematical Methods. Terms. Relational Operators and Switches. Cycles for, while, foreach. Field - declaration, initialization, methods for		
	parameters, return value, recursion. Program creation.		
14Y1ZM	Fundamentals of parametric and adaptive modeling	KZ	2
Basics of work at pr	roducts and parts creation. Sketch drawing by help of geometric relations, parametric dimensions, creation of adaptive models from 2	D sketches. Impor	t and export
==	from and to another systems. Fundamentals of assemblies creation.		
14ZDAL	Data processing in air transport	KZ	2
	processing and analysis tools. Practical part of the training - introduction to the working environment, applied examples of data proce ands of presentation of the results. Seminar papers on open data. Consultation hours for seminar papers. Seminar paper submission a		e, advanced
15JL2A	Foreign language - English 2 (for LED)	KZ	2
	nical vocabulary. Selection of conversation topics and professional topics based on students´ level and their focus at Faculty of Transpo		1
	I communication skills, ability to give feedback, summarization of a technical text, presentation structure, technical style and its usage		
15JL3A	Foreign language - English 3 (for LED)	KZ	2
Grammar and techr	nical vocabulary. Selection of conversation topics and professional topics based on students level and their focus at Faculty of Transpo	rtation Sciences. D	evelopment
of perceptive and	communication skills, ability to give feedback, summarization of a technical text, presentation structure, technical style and its usage	e, language of mar	nagement.
15JL4A	Foreign language - English 4 (for LED)	ZK	2
	nical vocabulary. Selection of conversation topics and professional topics based on students' level and their focus at Faculty of Transpo		
	I communication skills, ability to give feedback, summarization of a technical text, presentation structure, technical style and its usage		
15JZ1A	Foreign Language - English 1	l Z	3
Grammatical Struct	uros and Style, Selection of conversation tonics relating to transportation sciences. Extending vecabulary, developing percentive and co	_	_
Grammatical Struct	ures and Style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and co- stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles of	mmunicative skills.	_
	stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles	mmunicative skills.	Elementary
15X31L	stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles of Project 1 LED	mmunicative skills. of rhetoric.	Elementary 2
15X31L 15X32L	stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles of Project 1 LED Project 2 LED	mmunicative skills. of rhetoric. Z Z	Elementary 2 2
15X31L 15X32L 15X33L	stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles of Project 1 LED Project 2 LED Project 3 LED	mmunicative skills. of rhetoric. Z Z Z	Elementary 2 2 2
15X31L 15X32L 15X33L 15Y1BO	stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles of Project 1 LED Project 2 LED	mmunicative skills. of rhetoric. Z Z Z KZ	Elementary 2 2 2 2 2
15X31L 15X32L 15X33L 15Y1BO	stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles of Project 1 LED Project 2 LED Project 3 LED Work Safety and Health Protection in Transportation	mmunicative skills. of rhetoric. Z Z Z KZ	Elementary 2 2 2 2 2
15X31L 15X32L 15X33L 15Y1BO	stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles of Project 1 LED Project 2 LED Project 3 LED Work Safety and Health Protection in Transportation lative, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation. Health protection with focus on transportation.	mmunicative skills. of rhetoric. Z Z Z KZ	Elementary 2 2 2 2 2
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15X31L 15X32L 15X33L 15Y1BO Fundamental legis 15Y1DZ Horse-drawn railw War II railways, railw 15Y1EH Versailles system, goals. Europe afte 15Y1FD France - geograp Frer 15Y1HD History of city mass cleara 15Y1HE Basic knowledge Creation and prote 15Y1HL Beginnings of flying World airports. Fa	stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles of Project 1 LED Project 2 LED Project 3 LED Work Safety and Health Protection in Transportation lative, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation. Health insurance of home and foreign business trips, statistics, working practice. History of Railway vays, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repressive years, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repressive years, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repressive years, steam railways, railway network development in the 2nd half of 20th century, high-speed railway junctions. Excursions and projections. European Integration within Historical Context formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism. Lies of Hiller's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and in New quality of French-German relationship - a driving power of starting European integration. French Area Studies and Transportation French Area Studies and Transportation Work and regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air traich society and culture. Current political system. System of education, studying in France. Selected authors of French literature. French stransport in the world, development of trans, bus and trolley-bus systems. History of transport networks in the world, current trends in the systems. History of city Mass Transport History of City Mass Transport Work Hygiene and ergonomics	mmunicative skills. of rhetoric. Z Z Z KZ ealth protection pr KZ ublic", electric tractions, railway lines of KZ ttle Entente, its prits consequences for KZ ffic, specialised terch gastronomy. KZ and developments olic and Slovakia. KZ factors on health consibilities and skill KZ irports in the Czect faviation. Golden in KZ	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
15X31L 15X32L 15X33L 15Y1BO Fundamental legis 15Y1DZ Horse-drawn railw War II railways, railw 15Y1EH Versailles system, goals. Europe afte 15Y1FD France - geograp Frer 15Y1HD History of city mass cleara 15Y1HE Basic knowledge Creation and prote 15Y1HL Beginnings of flying World airports. Fa	stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles of Project 1 LED Project 2 LED Project 3 LED Work Safety and Health Protection in Transportation lative, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation. Health insurance of home and foreign business trips, statistics, working practice. History of Railway ways, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repivay development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connection railway accidents, railway junctions. Excursions and projections. European Integration within Historical Context formation of new states. Europe and the powers, League of Nations, European policy in the 1920s. Fascism, nacism, communism. Lier Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and in New quality of French-German relationship - a driving power of starting European integration. French Area Studies and Transportation by and regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air trainch society and culture. Current political system. System of education, studying in France. Selected authors of French literature. French History of City Mass Transport History of City Mass Transport Work Hygiene and Ergonomics in Traffic of occupational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of these cition of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technology to prefractical examples from the field of transportation; relevant legislature. History of Civil Aviation g, development of aircrafts lighter than air	mmunicative skills. of rhetoric. Z Z Z KZ ealth protection pr KZ ublic", electric tractions, railway lines of KZ ttle Entente, its prits consequences for the gastronomy. KZ and developments olic and Slovakia. KZ factors on health cossibilities and skill KZ irports in the Czect faviation. Golden of KZ KZ KZ	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2

15Y1ZV	East-West dichotomy: Prelude to the Cold War	KZ	2
	, evolution of the "West" and "East" from the 1500s. Focus on the history in the period between 1850 nad 1950. Milestones and continu	•	
in the end of 19th	a century and the beginning of the 20th century. Revolutions, the causes and consequences. Scientific and technological progress, the	e causes and cons	equences.
1611.01	Economic and financial history. Social changes. Discussions on texts, sources.	KZ	2
16LLA1	Aircraft 1 und conceptual design types - definitions and basic knowledge of the problem. Development of requirements, aircraft definitions and ca	1	aft loadings
Alliciali structurar a	Systems of primary and secondary airframe structure. Airframe and propulsion unit. Lectures are devoted to aeroplane topic	•	ait ioauiiigs.
16LLA2	Aircraft 2	Z,ZK	2
	ponsibility, responsibilities of operator and professional supervising. Legislation in area of airworthiness. International and national star		1
·	structures. Aeroelasticity. Inherent and operational reliability of aircraft structure. Fatigue strength. Aircraft structure lifetime presu		•
16UDOP	Introduction into Vehicles	Z	2
Vehicles and trans	sportation systems. Functionality and setup. Movement and drive principles. Engines and their characteristics. Rail, road, air and wate	r transport. Alterna	ative means
	of transport. Lifting equipment and conveyors. Legislation.		
16X31L	Project 1 LED	Z	2
16X32L	Project 2 LED	Z	2
16X33L	Project 3 LED	Z	2
16Y1EN	Energy Requirements of Vehicles	KZ	2
Dynamics and the	e driving inertial of the vehicles. Types of energy - kinetic, static, heat, chemical and others. Ways of energy change into kinetic energy	Combustion engi	ne, electric
	drive, steam engine, air engine. Energy accumulation means, accumulator, flywheel, fuel cell. Energy recuperation. WTW anal	lysis.	
16Y1IS	Interactive simulators and simulations	KZ	2
	ry and application of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical m		methods.
	lation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and intera		_
16Y1KS	Quality and Reliability of Vehicles	KZ	2
-	bility theory in design, development, production and operation of vehicles. Definition and possible approach to quality and reliability. K		
Mode and Effects	Analysis), QFD (Quality Function Deployment), DFx (Design for Assamly, Manufacturying, Quality, Services) and other methods u Knowledge-based systems of quality and reliability, data collection.	ised in industrial a	oplications.
16Y1PV	Operation, Construction and Maintenance of Vehicles	KZ	2
	peration, Construction and Maintenance of Vehicles production. Vehicle maintenance. Vehicle diagnostics. Maintenence and repair plans. Engine maintenance and emission measurements		1
Wichiods of vernor	General principles of engine diagnostics.	chi. manamiaalon i	nconamon.
16Y1RE	Control and Electronic Vehicle Systems	KZ	2
	ots of regulation. Tools for analytical solution, linear system description. Basic types of a regulator (PID), properties, advantages, disadva	1	1
	e control. Electric drive. Vehicle communication bus (CAN, LIN, FlexRay, ISObus, KWP2000 protocole etc.). Vehicle electronic control,		
	comfort systems.		
16Y1SO	Strategy and innovation in mobility	KZ	2
	novation, definition. Innovation strategy. Innovation life cycle and ecosystem, main sources and funding opportunities. Successful inno		_
co-financing, evalu	ration. Sprint method and its use. Innovative business model - main patterns and examples, design, strategy, processes and outlook (business plan and	possibilities
4 C) (4) /T	of use). Creating an innovation strategy. Customer and value map, design and testing.	1/7	
16Y1VT	Development in Railroad Vehicles	KZ	2
Raiiroad venicie	s traction. Railroad vehicle parametres regulation. Control and driving of railroad vehicles. Importance in heavy duty and personal tran assesment. New materials in design. International standardization.	nsportation. Critica	situation
16Y1ZG	Introduction into Applied Computer Graphics	KZ	2
	s, division and applications with emphasis on transport, including development and research. Colours, colour perception, colour sche		
	on, elementary algorithms for graphic data workout. Visualisation principles and tasks, technics, graphics and visualisation HW basic	•	-
, and the second	graphics software.		
16Y1ZL	Vehicle Testing, Legislation and Construction	KZ	2
Vehicle, bus and m	otorbike costruction, aggregate computing, driving resistance, build and parameters of traction, constructional arrangement of personal of	cars, trucks, buses,	motorbikes,
legi	islation in the EU and in the world, technical legislation creation, testing methods, vehicle tests, accelerated tests, mathematical mode	elling in testing.	
17TEDL	Transport Technology and Logistics	KZ	3
	asport technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and freight transport planning.		
· · · · · · · · · · · · · · · · · · ·	nodus, technologic factors of the side of operator and client, organisation of city transport, logistic technologies and their aplication us		
17X31L	Project 1 LED	Z	2
17X32L	Project 2 LED	Z	2
17X33L	Project 3 LED	Z	2
17Y1LL	Logistics of Passenger and Freight Air Transport	KZ	2
Logistics airline pa	ssenger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial transport.	sport process pass	sengers and
	air cargo. Information systems in air transport. Global distribution systems.		_
17Y1MD	Marketing in Transportation	KZ KZ	2
General principles	of marketing applied to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transport a	and the resulting di	merences in
17\/100	the application of marketing.	V7	2
17Y10F	Personal Finance (budget, financing of basic living needs), debt (loans and credits, payment instruments, interest and fees, debt trap), financing of hous	KZ	2
	floader, mancing of basic living needs), debt (loans and credits, payment instruments, interest and lees, debt trap), infancing of hous financing), savings and investments (investment horizon, return, risk, investment strategy), insurance (insurance types, suitability and		_
	(retirement savings and insurance).		J
17Y1PM	Personnel Management	KZ	2
	ces, work group, man as personality, planning, choice, evaluation and education of human sources, work adaptation, teamwork, inter	l .	I
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 management, li	ne networking. Cre	ating and
evaluation of the	e timetable. Vehicle circulation creation. Optimizing driver shifts and arranging them in turnus. Effects of barrier-free and public transp	ort preferences. The	ne role of
	marketing		

17Y1SL	Sociology of Human Resources	KZ	2
Human resources a	and their importance, work group as a special kind of social group, communication, personal management, modern management, hum of the organization.	an resources planr	ning, culture
17Y1ST	Titan Simulation	KZ	2
	gement game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same product		l
determine the quai	ntity and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequences	of their decisions	by the form
10MTV	of financial corporate reports and they use this information for other business decisions.	7 71/	
18MTY Basic course of ma	Materials Science and Engineering terials science and engineering explains mechanical properties of structural materials based on their bonding forces and microstructur	Z,ZK	ain attention
	s the most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and com		
	to degradation processes in materials, to defectoscopy and to main mechanical tests.		
18PZP	Elasticity and Strength	Z,ZK	3
Tension and comp	ression. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolted a	nd welded joints of	f structures.
18SAT	Analysis of deflection curve of beams. Torsion of circular cross sections. Combined loading. Stability. 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	, ,	1
	work. Kinematic method for calculation of reactions of statically determinate systems. Determination of axial forces in truss constructions.		
	of planar shapes. Fiber polygons and chains.		
18SPP	Seminary from Elasticity and Strength	Z	0
Excersise for prac	tice. Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam	Analysis of defle	ction curve
18SS	of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling.	7	0
	Seminary from Structural Analysis ise. General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and	_	_
	ual works for calculation of reactions of staticaly determinate systems. Determination of axial forces in truss construction - method of ju	•	
	Geometry of cross sections. Plane fiber polygons.		
18STD	Seminary from Technical Documentation	Z	0
Technical standa	ards, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional	I and geometrical	accuracy,
4071/1/	arrangement of drawing sheets.	1/7	
18TKK	Technical Drawing and Designing	KZ	4
18X31L	Project 1 LED	Z	2
18X32L	Project 2 LED	Z Z	2
18X33L	Project 3 LED	KZ	2
18Y1AM Survey of tissues A	Anatomy, Mobility and Safety of Man Anatomical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circulation	I	_
-	of muscular-skeletal system. Injury of human organs and musculo-skeletal system during traffic accidents. Mobility of ill and injured m	-	
	joint prostheses. Protective means and traffic safety regulations.		
18Y1EM	Experimental Methods in Mechanics	KZ	2
	role of experimental mechanics. Sensors for mechanical testing. Overview of experimental methods. Destructive and non-destructive to	-	_
experimental pro	cedures and sample preparation. Tensile and bending tests. Electrical resistance strain gages. Optical based strain measurement. Fat Instrumented hardness testing. Introduction to electron microscopy. Errors in measurement.	ligue and litetime p	rediction.
18Y1MT	Engineering Materials	KZ	2
	ew of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers and		l
to biol	ogical materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's	selection charts.	
18Y1PS	Computer Simulations in Mechanics	KZ	2
	rview of tools for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model development		
Irom other CAE sys	stems. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary conditions and tasks of structural and modal analysis. Introduction to complex nonlinear problems.	application of the	IOAU. DASIC
18Y1UK	Introduction of Rail Vehicles	KZ	2
	ics and parameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion tra		1
track resistance. To	otal running resistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehicle - h	nydromechanic, hy	drodynamic
0001/04	and electric drive. Design concept rail vehicles and drive of wheel set.	7.71	
20SYSA	Systems Analysis lem sciences, system viewpoint, terminology, typical system analysis tasks, system identification, system interface and interface tasks,	Z,ZK	5 m behaviour
	strong functions and processes, genetic code, system identity, system architecture. Tools for system analysis - Petri nets, decision tab		
	tasks. Soft and hard systems, methods for soft system analysis.		
20UITS	Introduction to Intelligent Transport Systems	Z,ZK	7
	gislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamentals of inform		
systems for ITS. Pr	inciples and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real examples principles of ITS.	of possible applica	ations of the
20X31L	Project 1 LED	Z	2
20X31L 20X32L	Project 2 LED	Z	2
20X32L	Project 3 LED	Z	2
20Y1AE	Applied Electronics	KZ	2
	semiconductor components, their principles, characteristics and typical connection diagrams. Semiconductor PN junction diodes, tran		l
amplifiers, basic l	ogic gates. Functions of basic electronic circuits and methods for their designs (rectifiers, voltage regulator with Zener diode, transisto	r as an amplifier, c	perational
063777	amplifier as an inverting and noninverting amplifier).		_
20Y1AF	Alternative Forms of Transportation Project Financing	KZ	2
<u>-</u>	such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt paym oot a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of secu		_
	of transportation and telecomunication projects.	and the arrangement	
•			

20Y1EA	Environmental Aspects of Transport	KZ	2
	phere, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilistic		_
	n pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transp		
20Y1EK	Qualification in Electrical Engineering	KZ	2
	ce with measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock hazard, so	•	•
voltage, maximum	n allowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legislation	on, standards and	regulations
	in relation to health and safety and electrical engineering.		
20Y1KP	Communication and presentation skills	KZ	2
Motivation, prioritie	es and their fulfillment, current communication networks, work with various sources, formal requirements of emails and final theses, b	asic typology of pe	ersonalities,
teamwork, emo	tional intelligence, manipulation and way of working with it, coping with stressful situations, formal requirements of presentations, way	s of communication	n during
	presentation, presentation skills, presentation skills in online environment.		
20Y1LN	Location and Navigation	KZ	2
	examples of road networks, localization on the network. Routing algorithms, their properties and implementation. Description and exa		l
Boomption and	transport connections, routing algorithms, their properties and implementation.	inploo of datacoto	ioi iiiiaiiig
201/401		1/7	_
20Y1OI	Fare Collection and Information Systems	KZ	2
	ystems in public transport and their components (on-board units, validators, turnstiles,). Information systems and their components		les, maps,
	nels) and operators (cycles, location or current delay of vehicles,). The issue of tariff systems. Other examples of clearance systems	ems (parking).	
20Y1OK	Road Lighting	KZ	2
Basic lighting quan	tities and terms, street lighting components (luminaires, control cabinets for street lighting, street lighting cables), characteristics of lumin	naires (lifetime of lig	ght sources,
light distribution),	standards, measurement of illuminance and luminance in road lighting, tunnels, conceptual approach to street lighting design, lightin	g calculations in D	IALux and
	Relux, street lighting control systems.		
20Y1PK	Product Quality Management Processes	KZ	2
	of organization management. Management systems and international standards; quality management systems. Quality products, prod		l
oi standards for sys	stems management, management principles. Principles of process management, monitoring and measurement systems management. U	ımornı iramework (บา รเสทินสิโนิริ
	for systems management. Process management principles. Metrology and testing. Product certification.		_
20Y1SC	Sensors and Actuators	KZ	2
Principles of senso	rs and actuators. Basics of measuring theory and actuating influence. The respective technologies and construction principles. Sensors of	mechanical, electr	ro-magnetic,
	state (temperature, humidity), chemical and particle flow values. Electrical, pneumatic and hydraulic actuators and solid phase ele	ements.	
21EMIL	Air Transport Economy	Z,ZK	5
The course focus	ses on the fundamentals of economics, providing students with an understanding of accounting principles and role of financial statem	ents. In the second	d part, the
	ne general knowledge acquired and applies it to the environment of air transport economics. The basic principle is the Holloway mode		-
	about demand, price and yield on the one hand, and supply, costs and expenses on the other.	,	J
21LEIS	Aerodromes	Z,ZK	3
	ns. Applicability. Airport design. Reference code. Declared distances of runways (RWY). Taxiways and aprons. Clearway. Stopway. Mar		
		-	
Markings. Signs. M	larkers. Visual aids for denoting obstacles. Obstacle restriction, removal. Visual aids for navigation, lights, approach lighting systems. V		ne indicator
		isuai appioacii sio	pomaioaioi
	systems. Runway lights. Taxiway lights. Visual aids for denoting obstacles.		
21LGCE	systems. Runway lights. Taxiway lights. Visual aids for denoting obstacles. Air Navigation	Z,ZK	3
	systems. Runway lights. Taxiway lights. Visual aids for denoting obstacles.	Z,ZK	3
	systems. Runway lights. Taxiway lights. Visual aids for denoting obstacles. Air Navigation	Z,ZK	3
Earth - its shape,	systems. Runway lights. Taxiway lights. Visual aids for denoting obstacles. Air Navigation parameters and properties. Aeronautical charts and their use. Measuring time. Dead reckoning. Radionavigation aids. Global navigation services routes and their design.	Z,ZK	3
	systems. Runway lights. Taxiway lights. Visual aids for denoting obstacles. Air Navigation parameters and properties. Aeronautical charts and their use. Measuring time. Dead reckoning. Radionavigation aids. Global navigation services routes and their design. Aviation English 1	Z,ZK on satellite system	3 s. Air traffic
Earth - its shape,	systems. Runway lights. Taxiway lights. Visual aids for denoting obstacles. Air Navigation parameters and properties. Aeronautical charts and their use. Measuring time. Dead reckoning. Radionavigation aids. Global navigation services routes and their design. Aviation English 1 Familiarity with the terminology used in civil aviation in the general context and emphasizing the ability to receive information only in	Z,ZK on satellite system Z n English.	3 s. Air traffic
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21SBL3	Bachelor Thesis Seminar 3	Z	1		
Formal and grap	hic design of the thesis. Data collection and presentation, basic statistical reasoning, validation of results and designs. Achieving the evaluation of hypothesis tests. Preparation of the presentation, principles of presentation of the thesis.	objectives of the t	hesis and		
21SLD Seminar of Air Transport Z 0					
History, definitions, terminology, basic rules. VFR / IFR. Basics of aerodynamics. Propulsion of aircraft. Aircraft design. Basics of navigation, radio navigation. Weight, balance,					
performance. Flight planning, optimization of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic management, ground handling, security. Air crew. Airlines and economics. Space technologies.					
21SYLP	Airport Security	KZ	2		
!	on security and unlawful acts against the civil aviation. Description of threats, risks, causes and goals of Security. Overview of national		1		
and their relevance to airport security. Security control devices. Operational efficiency factors and related variables. Basic use of queueing theory and optimization tasks.					
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 basic overview of AIS and AIM. Transition from AIS to AIM. Regulatory base. Provision of AIS/AIM in the Czech Rep. AIP (Aeronautical 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 Database). QMS					
(Quality Mng. System). ADQ (Aeronautical Data Quality). AIXM (Aeronautical Inf. Exchnage Format).					
21Y1BS	Unmanned aircraft systems 1	KZ	2		
Unmanned Aviation	Development. Aircraft design. Legislation in force in the Czech Republic. Planning and execution of the flight. Airspace division. Ope	erational risks and	operational		
	procedures. Practical flights.		T		
21Y1LJ	Aeronautical Radio and Flight Instruments	KZ	2		
	istory of aircraft instrumentation, aerometric instrumentation, Earth magnetism, aircraft electric equipment, gyroscopic instrumentatior aft equipment, engine instrumentation, warning and recording systems, instrumentation operational requirements, radiocommunicatio				
21Y1LS	Air Traffic Services	KZ	2		
	in Czech Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, APP		_		
	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		
1	bus is focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exercises		-		
21Y1OH	oles, based on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improvement	KZ	tiad skills.		
	Airline Business and Operations s a comprehensive view of the commercial, operational and transportation activities of air transport companies. It focuses on the organiz		. –		
1	their strategy, economic and operational indicators. It introduces students in detail to operational processes and the essentials of transp		-		
	a basic view of the economic aspects of air transport.				
21Y1PC	ATC Procedures and Activities	KZ	2		
1	procedures, basics of communication and phraseology, aircraft identification, spacing and traffic coordination. In addition, the course				
21Y1RZ	rts and low visibility operational procedures. Students will during the course learn basic safety management applications applied acro Human Resources Management	KZ	2		
	human resources in the organization and related disciplines file. Substance, importance and challenges of human resources manage		I		
1 -	nan resource management. Human resource planning. Search, recruitment and selection of employees. Motivation, evaluation and rer				
	dismissal and redundancies of employees. Education of employees. Planning career management.		T		
21Y1SI	ATC Simulator	KZ	2		
	with the simulation environment, acquiring basic habits, aircraft identification procedures, vectoring, level changes, ATC clearance, us ng on basic vectoring, early application of vertical separation, EST and REV message passing. Practical exercises in the APPROACH				
CACICISCS IOCUSII	departure management procedures, conflict resolution.	raica, practicing t	iiiivai ana		
21Y1UL	Aircraft Maintenance	KZ	2		
	and technical operations. Maintenance and work processes. Defects search methods, status check diagnostic tools. Selection and qua	lification of aviation	n personnel.		
Basic documentat	ion for maintenance. Optimization of time maintenance intervals. Regulation no. 1321/2014 Part 145. Human factors of aircraft maintenance.	enance. Regulation	of director		
21ZALD	EASA for aircraft maintenance. Seminars will be focused on practical application.	V7	2		
	Basics of Air Transport terminology, basic rules. VFR/IFR. Basics of aerodynamics. Propulsion of aircraft. Aircraft design. Basics of navigation, radio navigation.	KZ Weight balance b	2 erformance		
I -	timization of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic management, grou				
	Airlines and economics. Space technologies.				
21ZT	ATM Systems	ZK	2		
The course intr	roduces classical and modern facilities, systems and technologies designated for ATS. Student obtains knowledge of technical princip	les and solutions	as far as		
217VT1	communication, navigation and surveillance aviation systems are concerned.	7 71/	3		
21ZYT1 Aerodynamic drag	Principles of Flight 1, relation between drag and speed, streamline, boundary layer, formula of continuity, formula of Bernoulli, lift and drag, air flow and pr	Z,ZK	I		
1 -	i 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				
	lift and drag increase.				
21ZYT2	Principles of Flight 2	Z,ZK	3		
	amic longitudinal stability, neutral point, location of centre of gravity, static directional & p; lateral stability, dynamic directional & p; lateral & p	-	-		
(iongituuinai), ya	w (directional) & mp; roll (lateral), roll/yaw interaction, trimming, speed of sound, Mach number, compressibility, shock waves, critical heating, operating limitations, manoeuvring envelope, gust-load diagram.	iviacii fluffibet, ae	ouynaniic		
22SELN	Air Accident Investigation	ZK	2		
!	gislation (ICAO, EU, Czechia) related to air accident investigation. Obligations arising from legislative requirements for individual States		1		
investigation process. Air accident site (inspector's equipment, site security, personal protection, initial activities at the site, sketch, evidence, etc.). Aircraft and crew documentation.					
001/0::	Final report (formalities, substantive content, contribution).	-	_		
22X31L	Project 1 LED	Z	2		
22X32L 22X33L	Project 2 LED Project 3 LED	Z Z	2		

TV-1	Physical Education	Z	1
TV-2	Physical Education	Z	1
TVKLV	Physical Education Course	Z	0
TVKZV	Physical Education Course	Z	0

For updated information see http://bilakniha.cvut.cz/en/FF.html Generated: day 2025-06-06, time 16:35.