Study plan

Name of study plan: Bachelor TET-ITS 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: 174 Elective courses credits: 6 Sum of credits in the plan: 180 Note on the plan:

Name of the block: Compulsory courses Minimal number of credits of the block: 162 The role of the block: Z

Code of the group: 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:

Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their Code Completion Credits Scope Semester Role members) Tutors, authors and guarantors (gar.) Calculus 1 11CAL1 Z,ZK 7 2P+4C+22B Ζ Olga Vraštilová, Tomáš Tasák, Magdalena Hykšová, Bohumil Ková, Ond ej Ζ Navrátil Bohumil Ková Ond ej Navrátil (Gar.) Linear Algebra 11LA Z.ZK 3 2P+1C+10B Ζ 7 Lucie Kárná, Pavel Provinský, Martina Be vá ová Martina Be vá ová Martina Be vá ová (Gar.) Introduction to Transportation Engineering Ζ 12ZADY Z,ZK 4 2P+2C Ζ Zuzana arská, Dagmar Ko árková, Jana Štikarová Dagmar Ko árková (Gar.) Materials Science and Engineering Jaromír Kylar, Veronika Drechslerová, Jaromír Kylar, Nela Kr má ová, Jitka ezní ková, Jaroslav Valach, Vít Malinovský, Veronika Drechslerová, Jaromír 18MTY Z,ZK 3 2P+1C+10B Ζ Ζ Kylar Jaroslav Valach Jaroslav Valach (Gar.) Geometry 11GIE ΚZ 2P+2C+12B Ζ 3 z Pavel Provinský, Old ich Hykš, Šárka Vorá ová Old ich Hykš Old ich Hykš (Gar.) Algorithm and Data Structures 14ASD ΚZ 3 0P+2C+8B Ζ Tomáš Brandejský, Michal Je ábek, Alena Kubá ová, Jan Procházka, Vít Fábera, Martin Fiala **Vít Fábera** Vít Fábera (Gar.) Ζ Technical Drawing and Designing Jitka ezní ková, Vít Malinovský, Jan Šleichrt, Martin Brumovský, Jan Mejst ík, 18TKK K7 4 2P+2C+16B 7 Ζ Drahomír Schmidt, Lukáš Svoboda, Jan Vogl, Ji í Zeisek, Jan Šleichrt Jan Šleichrt (Gar.) Introduction into Vehicles 16UDOP Ζ 2 2P+0C+8B Ζ 7 Zuzana Radová, Petr Bouchner TV-1 Ζ Ζ 1 **Physical Education** Ζ

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

11CAL1	Calculus 1	Z,ZK	7		
Sequence of real numbe	ers and its limit. Basic properties of mappings. Function of one real variable, its limit and derivative. Indefinite integral, Newton in	itegral, Riemann ir	ntegral, improper		
Riemann integral. First-order differential equations, linear differential equations.					
11LA Linear Algebra Z,ZK 3					
Vector spaces (linear co	Vector spaces (linear combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and their solvability. Determinants a				
heir applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classification.					
12ZADY	Introduction to Transportation Engineering	Z,ZK	4		

	urse of materials science and engineering explains mechanical properties of structural materials based on their bonding forces and microstructure. However the main attention is also paid dation processes in materials, to defectoscopy and to main mechanical tests. Geometry KZ 3 ial geometry of curves - parameterization, the arc of the curve, torsion and curvature, Frenet's trihedron. Kinematics - a curve as a trajectory of the motion, the velocity, and to of a particle moving on a curved path. KZ 3 O Algorithm and Data Structures KZ 3 swill analyze problems, design a theoretical solution to a given problem and write the resulting algorithm using flowcharts, practice reading algorithms written using flowcharts, basic Boolean algebra to construct constraints in algorithms. Students will be introduced to the basics of the Python programming language - variable, branching, loops, they to work with variables of basic data types (integer, floating point and string) and the list data structure in their programs. KZ 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 th	ne main attention		
is paid to metals as the	most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and	composites. Atter	tion is also paid		
to degradation processe	es in materials, to defectoscopy and to main mechanical tests.				
11GIE Geometry KZ					
Differential geometry of	curves - parameterization, the arc of the curve, torsion and curvature, Frenet's trihedron. Kinematics - a curve as a trajector	' y of the motion, th	he velocity, and		
acceleration of a particl	e moving on a curved path.				
14ASD	Algorithm and Data Structures	KZ	3		
Students will analyze pr	oblems, design a theoretical solution to a given problem and write the resulting algorithm using flowcharts, practice reading a	lgorithms written	using flowcharts,		
and use basic Boolean	algebra to construct constraints in algorithms. Students will be introduced to the basics of the Python programming language	e - variable, branc	hing, loops, they		
will learn to work with va	ariables of basic data types (integer, floating point and string) and the list data structure in their programs.				
18TKK	Technical Drawing and Designing	KZ	4		
16UDOP	Introduction into Vehicles	Z	2		
Vehicles and transporta	tion systems. Functionality and setup. Movement and drive principles. Engines and their characteristics. Rail, road, air and w	ater transport. Alt	ernative means		
of transport. Lifting equi	pment and conveyors. Legislation.				
TV-1	Physical Education	Z	1		

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

Name of the group: 2nd Sem. Bachelor Full-Time TET from 2020/21 Requirement credits in the group: In this group you have to gain 30 credits Requirement courses in the group: In this group you have to complete 9 courses Credits in the group: 30 Note on the group:

Note on the grou	ib.					
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.)	КZ	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.)	КZ	3	2P+1C	L	Z
21ZALD	Basics of Air Transport Jakub Hospodka, Tomáš Tlu ho, Ji í Volt, Peter Olexa, Jan Slezá ek, Jakub Trýb, Sébastien Lán, Bo Stloukal	КZ	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

Z,ZK	5				
egrals.					
Z,ZK	4				
etric tests Nonpa	rametric tests				
Regression and correlation analysis					
2ZTS Railway Lines and Stations Z,ZK 4					
Spatial layout of r	ailway lines.				
Railway control systems in relation to infrastructure. Operating and carriage points. Railway lines net and category. Traction in rail transport.					
Z,ZK	4				
ite beams and sir	nple girders.				
ns. Cross-section	al characteristics				
Z,ZK	5				
sks, processes, s	ystem behaviour				
nd its analysis, strong functions and processes, genetic code, system identity, system architecture. Tools for system analysis - Petri nets, decision tables, algorithms for structural					
	tegrals. Z,ZK netric tests Nonpa Z,ZK Spatial layout of r Z,ZK ate beams and sir ns. Cross-section Z,ZK sks, processes, s				

14PRG Programming The Course Programming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python programming language is expa 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, dicti	
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, dicti	
	ctionaries
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 transport, organisation of t	of traffic in
each transport modus, technologic factors of the side of operator and client, organisation of city transport, logistic technologies and their aplication using various transport mo	nodus.
21ZALD Basics of Air Transport KZ	2
History, definitions, terminology, basic rules. VFR/IFR. Basics of aerodynamics. Propulsion of aircraft. Aircraft design. Basics of navigation, radio navigation. Weight, balance, perfo	rformance
Flight planning, optimization of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic management, ground handling, security. A	y. Air crew
Airlines and economics. Space technologies.	
TV-2 Physical Education Z	1

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

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

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

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

Credits in the group: 30

Note on the group:

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

Characteristics of the courses of this group of Study Plan: Code=3S-BP-TET-24/25 Name=3rd Sem. Bachelor Full-Time TET from 2024/25

11FYZ Physics	Z,ZK	5			
Kinematics, dynamics, Newton's laws, force fields, mechanics of continuum, thermodynamics, introduction to electrostatics and electric current.					
12MDE Transport Models and Transport Excesses	Z,ZK	3			
Parameters of the traffic flow and methods for their measurement. Models of the traffic flow, communications load, line and urban systems. Theory of	queues, shock w	vaves. Quality of			
transport and its assessment. Statistical characteristics of transport. Transport excesses, their analysis, the causes, identify and minimize the conseq	juences. Improvir	ig of transport			
safety and fluency.					
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 oth	ner scientific disci	plines.			
18PZP Elasticity and Strength	Z,ZK	3			
Tension and compression. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolte	ed and welded join	nts of structures.			
Analysis of deflection curve of beams. Torsion of circular cross sections. Combined loading. Stability.					
20UITS Introduction to Intelligent Transport Systems	Z,ZK	7			
Terminology and legislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamentals of in	nformation and tel	ecommunication			
systems for ITS. Principles and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real examp	les of possible ap	oplications of the			
principles of ITS.					
12PPOK Designing Roads, Highways and Motorways	KZ	3			
Definition, types, ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standa	rd speed. Route	in rural areas.			
Range of vision for stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Sa	afety device. Cros	sings, junctions,			
intersections.					
14DATS Database Systems	KZ	2			
Basic concepts of database systems, conceptual model, relational data model, the principles of normal forms, relational database design, security ar	nd integrity of dat	a, database			
queries, relational algebra, SQL language, client / server, multilayer architectures, distributed database systems. Access to data via the WWW.					
15JZ1A Foreign Language - English 1	Z	3			
Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and	communicative s	kills. 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-ITS-22/23 Name of the group: 4th Sem. Bachelor Full-Time TET-ITS from 2022/23 Requirement credits in the group: In this group you have to gain 22 credits Requirement courses in the group: In this group you have to complete 4 courses Credits in the group: 22

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
11MAMY	Mathematical Methods Michal Matowicki, Jan P ikryl Jan P ikryl (Gar.)	Z,ZK	7	3P+3C	L	Z
14AM	Automation and Measurement Tomáš Brandejský, Vít Fábera Vít Fábera Tomáš Brandejský (Gar.)	Z,ZK	6	3P+3C	L	Z
16DOTE	Transport Technology Josef Mík, Michal Cenkner, Pemysl Toman, Josef Svoboda Josef Mík	Z,ZK	6	3P+3C	L	Z
15JZ2A	Foreign Language - English 2 Markéta Vojanová, Marie Michlová, Marek Tome ek, Jan Feit, Markéta Musilová, Peter Morpuss, Lenka Monková, Jitka He manová, Eva Rezlerová, 	Z,ZK	3	0P+4C+10B	L	Z

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

11MAMY	Mathematical Methods	Z,ZK	7
Mathematical modeling	. The system and its mathematical description. Types of signals. Basic system responses. Convolution. State models. Principl	e of general / stat	ionary / linear
state description. Data	neasurement. Uncertainty in measured data. Data normalization. Preparation of data for further processing. Linear state mod	del over noisy dat	a. Kalman filter
condition estimation. St	atistical learning methods. Regression, classification.		
14AM	Automation and Measurement	Z,ZK	6
Introduction into terms	agent, rational agent, their unification to elements of transportation systems, analogies in nature, regulation in openen loop a	nd control in close	ed loop, reactive
systems, control using f	inite state machines. Dynamic system identification. Measurement of basic electric and other physical quantities, principles c	of measurement ir	struments, DC
and AC measurement,	actuators, measurement automation, measurement laboratories.		
16DOTE	Transport Technology	Z,ZK	6
Types of vehicles, main	features and principles. Construction and design elements, important legislation, testing. Drives and transmission, energy ac	cumulation and c	hanges. Road
vehicle dynamics (latera	al, transversal, vertical, driveability, suspension, wheel-road contact), mathematic solution of dynamic systems. Design feature	s of passive, activ	e and integrated
safety.			
15JZ2A	Foreign Language - English 2	Z,ZK	3
Grammatical structures	and style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and	d communicative s	kills. Elementary
stylistics forms. Oral and	d written presentation of original research. Academic text principles and reading comprehension. Principles of rhetoric.		

Code of the group: 4S-BP-ITS-V1-22/23

Name of the group: 4th Sem. Bachelor Full-Time TET-ITS alternative subject from 2022/23 Requirement credits in the group: In this group you have to gain 4 credits Requirement courses in the group: In this group you have to complete 1 course Credits in the group: 4

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
20ZEKT	Fundamentals of Electrical Engineering Jind ich Sadil, Daniel Beránek Jind ich Sadil (Gar.)	Z,ZK	4	2P+1C	L	Z

Characteristics of the courses of this group of Study Plan: Code=4S-BP-ITS-V1-22/23 Name=4th Sem. Bachelor Full-Time TET-ITS alternative subject from 2022/23

11EMO	Electromagnetic Field and Optics	Z,ZK	4				
Electric field. Electric cu	irrent. Magnetic field. Electromagnetic field. Optics. Basics of solid-state physics.						
20ZEKT	Fundamentals of Electrical Engineering	Z,ZK	4				
Maxwell equations, elec	trotechnical quantities (electrical current, voltage, resistance, conductivity, resistivity, conductivity, power, energy), Ohm's law	, Κirchhoff laws, θ	electrical circuits				
(elements, methods, DC	(elements, methods, DC and AC circuits, accumulators, photovoltaics), electric machines, transmission lines, reflections on transmission lines, basic electrical measurements.						

Code of the group: 5S-BP-ITS-23/24

Name of the group: 5th Sem. Bachelor Full-Time TET-ITS from 2023/24 Requirement credits in the group: In this group you have to gain 23 credits

Requirement courses in the group: In this group you have to complete 4 courses Credits in the group: 23 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
14ISYD	Information Systems in Transportation Jana Kaliková, Jan Kr ál, Marek Kalika Marek Kalika Marek Kalika (Gar.)	Z,ZK	7	2P+4C	Z	Z
14TAMS	Telecommunications and Local Area Networks Zden k Lokaj, Martin Šrotý, Tomáš Zelinka Tomáš Zelinka Tomáš Zelinka (Gar.)	Z,ZK	7	3P+3C	Z	Z
20RIZE	Railway Traffic Management Jind ich Sadil, Martin Leso, Dušan Kamenický, Petr Koutecký Dušan Kamenický	Z,ZK	7	3P+3C	Z	Z
20ELKA	Qualification in Electrical Engineering Jind ich Sadil, Daniel Beránek Daniel Beránek	KZ	2	2P+0C	Z	Z

Characteristics of the courses of this group of Study Plan: Code=5S-BP-ITS-23/24 Name=5th Sem. Bachelor Full-Time TET-ITS from 2023/24

14ISYD Information Systems in Transportation	Z,ZK	7			
Architecture and cloud services concept, eGovernment-structure. Electronic communication and signature. IS life cycle and IT projects. Types of information systems and specific					
implementation in transport. Roles, processes, management, optimization in IS. Oracle data types. SQL Developer, SQL queries. Comprehensive example and web application					
programming.					
14TAMS Telecommunications and Local Area Networks	Z,ZK	7			
Summary of the current state and introduction of the new trends in the development of telecommunication systems. The legal environment for the provis	ion and use of tel	ecommunication			
services is explained, basic telecommunication solutions in the hierarchical architecture of telecommunication networks are presented, and the links	between the para	ameters of the			
parts and the performance of telecommunication systems.					
20RIZE Railway Traffic Management	Z,ZK	7			
Historical development of security technology, external elements (switches, signals, detection means), station, track and crossing security equipment,	, existing train se	curity equipment			
and ETCS, traffic control structure, traffic control technology, automation and traffic control optimization, power supply systems, energy calculations a	and train running	dynamics.			
20ELKA Qualification in Electrical Engineering	KZ	2			
Practical experience with measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock hazard, symbols and labeling, nominal					
voltage, maximum allowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legislation, standards and regulations					
in relation to health and safety and electrical engineering.					

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

Name of the group: 6th Sem. Bachelor Full-Time TET-ITS from 2023/24 Requirement credits in the group: In this group you have to gain 23 credits Requirement courses in the group: In this group you have to complete 4 courses Credits in the group: 23 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
16SVIR	Vehicle Systems and Interaction with Driver Petr Bouchner, Stanislav Novotný Stanislav Novotný (Gar.)	Z,ZK	7	3P+3C	L	Z
20ATEL	Applied Telematics Ji í R ži ka, Petr Bureš, Martin Langr, Pavel Hrubeš Pavel Hrubeš (Gar.)	Z,ZK	7	3P+3C	L	Z
20RISI	Road Traffic Control Ji í R ži ka, Martin Langr, Vladimír Faltus, Tomáš Tichý Tomáš Tichý (Gar.)	Z,ZK	7	3P+3C	L	Z
20APEL	Applied Electronics Vít Fábera, Tomáš Musil	KZ	2	0P+2C	L	Z

Characteristics of the courses of this group of Study Plan: Code=6S-BP-ITS-23/24 Name=6th Sem. Bachelor Full-Time TET-ITS from 2023/24

16SVIR	Vehicle Systems and Interaction with Driver	Z,ZK	7			
20ATEL	Applied Telematics	Z,ZK	7			
Transport telematics - de	finition, benefits, ITS legislation, ITS organizations, ITS architecture and its practical use, data structures and data, geographic	information syste	ms, toll systems,			
e-call, fleet managemer	nt, check-in and information systems, ITS connection to Smart City, ITS applications on specific examples.					
20RISI	Road Traffic Control	Z,ZK	7			
Traffic node manageme	nt - basic concepts, SSZ design criteria, SSZ production project, dynamic SSZ management, public transport preferences, trafi	fic area managem	ient, microscopic			
traffic models, macrosco	opic traffic models, traffic management on motorways, tunnel systems.					
20APEL	Applied Electronics	KZ	2			
Basic electronic semiconductor components, their principles, characteristics and typical connection diagrams. Semiconductor PN junction diodes. Transistors. Thyristor. Operational						
amplifiers, basic logic gates. Functions of basic electronic circuits and methods for their designs (rectifiers, voltage regulator with Zener diode, transistor as an amplifier, operational						
amplifier as an inverting and noninverting amplifier).						

Name of the block: Semestrální projekt

Code of the group: X1-BP-ITS-22/23 Name of the group: Research Groups Bachelor Full-Time TET-ITS 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
15X31S	Project 1 ITS	Z	2	0P+1C	L	ZP
14X31S	Project 1 ITS Tomáš Brandejský, Vít Fábera, Jana Kaliková, Jan Kr ál, Mária Jánešová	Z	2	0P+1C	L	ZP
12X31S	Project 1 ITS	Z	2	0P+1C	L	ZP
11X31S	Project 1 ITS Jan Pikryl Jan Pikryl Jan Pikryl (Gar.)	Z	2	0P+1C	L	ZP
22X31S	Project 1 ITS Michal Frydrýn, Tomáš Mi unek, Luboš Nouzovský, Tomáš Kohout, Zden k Svatý Luboš Nouzovský	Z	2	0P+1C	L	ZP
17X31S	Project 1 ITS	Z	2	0P+1C	L	ZP
18X31S	Project 1 ITS	Z	2	0P+1C	L	ZP
20X31S	Project 1 ITS Ji í R ži ka, Patrik Horaž ovský, Vladimír Faltus, Martin Leso, Ji í Brož	Z	2	0P+1C	L	ZP
21X31S	Project 1 ITS	Z	2	0P+1C	L	ZP
16X31S	Project 1 ITS Petr Bouchner, Milan Sliacky, Michal Cenkner	Z	2	0P+1C	L	ZP
15X32S	Project 2 ITS	Z	2	0P+1C	Z	ZP
14X32S	Project 2 ITS Jana Kaliková, Jan Kr ál, Zden k Lokaj, Martin Šrotý, Tomáš Zelinka	Z	2	0P+1C	Z	ZP
12X32S	Project 2 ITS	Z	2	0P+1C	Z	ZP
11X32S	Project 2 ITS Evženie Uglickich, Pavla Pecherková, Michal Matowicki, Ivan Nagy, Jana Kuklová, Jan P ikryl, Ond ej P ibyl Jana Kuklová Jana Kuklová (Gar.)	Z	2	0P+1C	Z	ZP
16X32S	Project 2 ITS Milan Sliacky, Josef Mík, Michal Cenkner, Tereza Kunclová	Z	2	0P+1C	Z	ZP
22X32S	Project 2 ITS	Z	2	0P+1C	Z	ZP
21X32S	Project 2 ITS	Z	2	0P+1C	Z	ZP
20X32S	Project 2 ITS Ji í R ži ka, Patrik Horaž ovský, Milan Sliacky, Martin Leso	Z	2	0P+1C	Z	ZP
18X32S	Project 2 ITS	Z	2	0P+1C	Z	ZP
17X32S	Project 2 ITS	Z	2	0P+1C	Z	ZP
11X33S	Project 3 ITS Jan P ikryl Jan P ikryl Jan P ikryl (Gar.)	Z	2	0P+2C	L	ZP
12X33S	Project 3 ITS	Z	2	0P+2C	L	ZP
14X33S	Project 3 ITS Jana Kaliková, Jan Kr ál, Zden k Lokaj, Martin Šrotý, Tomáš Zelinka	Z	2	0P+2C	L	ZP
15X33S	Project 3 ITS	Z	2	0P+2C	L	ZP
22X33S	Project 3 ITS	Z	2	0P+2C	L	ZP
20X33S	Project 3 ITS	Z	2	0P+2C	L	ZP
18X33S	Project 3 ITS	Z	2	0P+2C	L	ZP
17X33S	Project 3 ITS	Z	2	0P+2C	L	ZP
16X33S	Project 3 ITS Milan Sliacky, Josef Mík, Michal Cenkner, Tereza Kunclová	Z	2	0P+2C	L	ZP
21X33S	Project 3 ITS	Z	2	0P+2C	L	ZP

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

15X31S	Project 1 ITS	Z	2
14X31S	Project 1 ITS	Z	2
12X31S	Project 1 ITS	Z	2
11X31S	Project 1 ITS	Z	2

22X31S	Project 1 ITS	Z	2
17X31S	Project 1 ITS	Z	2
18X31S	Project 1 ITS	Z	2
20X31S	Project 1 ITS	Z	2
21X31S	Project 1 ITS	Z	2
16X31S	Project 1 ITS	Z	2
15X32S	Project 2 ITS	Z	2
14X32S	Project 2 ITS	Z	2
12X32S	Project 2 ITS	Z	2
11X32S	Project 2 ITS	Z	2
16X32S	Project 2 ITS	Z	2
22X32S	Project 2 ITS	Z	2
21X32S	Project 2 ITS	Z	2
20X32S	Project 2 ITS	Z	2
18X32S	Project 2 ITS	Z	2
17X32S	Project 2 ITS	Z	2
11X33S	Project 3 ITS	Z	2
12X33S	Project 3 ITS	Z	2
14X33S	Project 3 ITS	Z	2
15X33S	Project 3 ITS	Z	2
22X33S	Project 3 ITS	Z	2
20X33S	Project 3 ITS	Z	2
18X33S	Project 3 ITS	Z	2
17X33S	Project 3 ITS	Z	2
16X33S	Project 3 ITS	Z	2
21X33S	Project 3 ITS	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-ITS-24/25 Name of the group: Comp. Sel. Courses Bachelor Full-Time TET-ITS 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.)	КZ	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 Lucie Kárná (Gar.)	KZ	2	2P+0C	Z	PV
21Y1BS	Unmanned aircraft systems 1 Tomáš Tlu ho, Jakub Kraus, Michal erný	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

17Y1EV	Public Sector Economy	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	ΚZ	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 Vladimír Plos	KZ	2	2P+0C	L	PV
15Y1HD	History of City Mass Transport Milan Dont	KZ	2	2P+0C	Z	PV
12Y1HD	Traffic Noise Dagmar Ko árková, Libor Ládyš	KZ	2	2P+0C	L	PV
15Y1HE	Work Hygiene and Ergonomics in Traffic Petr Musil	KZ	2	2P+0C	Z	PV
16Y1IS	Interactive simulators and simulations	KZ	2	2P+0C	L	PV
12Y1KN	Combined Transportation Petr Nejedlý	KZ	2	2P+0C	Z	PV
12Y1KP	Communication and Promotion of Transport Projects Dagmar Ko árková, Ond ej Kubala	KZ	2	2P+0C	L	PV
20Y1KP	Communication and presentation skills Ji í R ži ka, Patrik Horaž ovský, Kristýna Navrátilová, Eva Haj iarová Ji í R ži ka	ΚZ	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 Jaroslav Valach (Gar.)	KZ	2	2P+0C	L	PV
21Y1MP	Matlab for project-oriented study Lenka Hanáková, Vladimír Socha 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 Peter Olexa, Eva Endrizalová Peter Olexa	KZ	2	2P+0C	Z	PV
20Y1OI	Fare Collection and Information Systems Patrik Horaž ovský, Milan Sliacky Milan Sliacky (Gar.)	KZ	2	2P+0C	L	PV
14Y1OJ	Object - oriented programming in JAVA	KZ	2	2P+0C	L	PV
14Y1OP	Operating System	KZ	2	2P+0C	Z	PV
17Y10F	Personal Finance	KZ	2	2P+0C	Z	PV
20Y1OK	Road Lighting František Kekula	KZ	2	2P+0C	L	PV
11Y1PV	Parametrical and Multicriterial Programming Olga Vraštilová Olga Vraštilová Olga Vraštilová (Gar.)	KZ	2	2P+0C	Z	PV
17Y1PM	Personnel Management	KZ	2	2P+0C	L	PV
12Y1PC	Pedestrian and Cycling Transport 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 Petr Zlámal (Gar.)	KZ	2	2P+0C	L	PV
14Y1PI	Corporate Information System	KZ	2	2P+0C	Z	PV
14Y1PZ	Advanced Data Processing in Spreadsheets	KZ	2	2P+0C	Z	PV
21Y1PC	ATC Procedures and Activities Terézia Pilmannová Terézia Pilmannová	KZ	2	2P+0C	Z	PV
12Y1PD	Assessment of Transport Structures	KZ	2	2P+0C	Z	PV
20Y1PK	Product Quality Management Processes 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, P emysl Toman	KZ	2	2P+0C	Z	PV
21Y1RZ	Human Resources Management	KZ	2	2P+0C	L	PV
17Y1ST	Titan Simulation	KZ	2	2P+0C	L	PV
21Y1SI	ATC Simulator Terézia Pilmannová	KZ	2	2P+0C	L	PV
20Y1SC	Sensors and Actuators	KZ	2	2P+0C	L	PV
17Y1SL	Sociology of Human Resources	KZ	2	2P+0C	Z	PV
11Y1SI	Transportation Software Engineering	KZ	2	2P+0C	Z	PV
16Y1KS	Quality and Reliability of Vehicles Jan Leistner, Filip Kotas, Jaroslav Machan, David Lehet	KZ	2	2P+0C	Z	PV
12Y1SU	Road Management and Maintenance Dagmar Ko árková, Otakar Vacín	KZ	2	2P+0C	L	PV
16Y1SO	Strategy and innovation in mobility	KZ	2	2P+0C	Z	PV
17Y1SK	Urban and Regional Rail Transport Systems Ji í Pospíšil Ji í Pospíšil (Gar.)	KZ	2	2P+0C	L	PV
11Y1TG	Graph Theory Lucie Kárná Lucie Kárná 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 Josef Kolá (Gar.)	KZ	2	2P+0C	L	PV
12Y1VR	Public Transport in Cities and Regions	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 Mik	KZ	2	2P+0C	Z	PV
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Characteristics of the courses of this group of Study Plan: Code=Y1-BP-ITS-24/25 Name=Comp. Sel. Courses Bachelor Full-Time TET-ITS from 2024/25

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 Da	tabase). QMS		
(Quality Mng. System).	ADQ (Aeronautical Data Quality). AIXM (Aeronautical Inf. Exchnage Format).				
00Y1XB	Active participation in a scientific project, workshop, short-term trip abroad	KZ	2		
20Y1AF	Alternative Forms of Transportation Project Financing	KZ	2		
In will be specifed such	forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt pa	ayments come fro	om its budget but		
the final debtor is not a	direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of	securities as an a	Iternative source		
of transportation and te	lecomunication projects.				
18Y1AM	Anatomy, Mobility and Safety of Man	KZ	2		
Survey of tissues. Anatomical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circulation and nervous system. Structure					
and biomechanics of muscular-skeletal system. Injury of human organs and musculo-skeletal system during traffic accidents. Mobility of ill and injured man and his treatment. Human					
ioint prostheses Protec	ioint prostheses. Protective means and traffic safety regulations				

14Y1AV Animation and Visualization	KZ	2
Advanced modifications and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX sys		- 1
and other effects, rendering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation		
12Y1AE Applied Ecology	KZ	2
General ecology - ecological concepts and principles, ecosystem, ecological factors, energy flow through the ecosystem. Application of kn	I I	
ecology. Landscape ecology - origin and historical development. Landscape definition and classification. Success. Traffic constructions in t	-	-
protection. Applied ecology.	, ,	
20Y1AE Applied Electronics	KZ	2
Basic electronic semiconductor components, their principles, characteristics and typical connection diagrams. Semiconductor PN junction	1	_
amplifiers, basic logic gates. Functions of basic electronic circuits and methods for their designs (rectifiers, voltage regulator with Zener did		-
amplifier as an inverting and noninverting amplifier).		
14Y1BE Barrierless Transport	KZ	2
The issue of barrierless accessible public transportation in terms of architectural barriers and also for transportation-technological point of v	iew. Students will gain theore	etical knowledge
of barrierless environment roads, railway stations, public transport stops, terminal buildings, vehicles, public transport, information and orient	ation systems and transporta	ation technology.
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 tran	sportation. Health protection	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. Transmissio	n channels, detection of tran	smission errors,
probability of undetected error. Design and assessment of detection codes; requirements of the European standard EN 50159.		
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 a	and operational
procedures. Practical flights.		
14Y1BM Biometric Methods	KZ	2
Basic biometric terms, authentication methods, principles and performance measurement of biometric systems, overview of biometric tech	nologies, hand geometry, ir	is recognition,
retina recognition method, 2D and 3D face recognition, vein patterns on the wrist, ear biometrics, fingerprint recognition, skin spectroscop	y, behavioral methods, the u	se of biometrics
in transport applications, safety and risks of biometric technologies.		
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 th	e "First Republic", electric tra	action, World
War II railways, railway development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance	train connections, railway lin	es 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 obtain	ing process. Budget and pri	cing. Practical
creation of some project documentation parts.		
17Y1EV Public Sector Economy	KZ	2
Economic and financial theory of public sector, public choice theory, externalites, decisions about public finance allocation, economic asse	sment of public projects (CE	BA, MCA, CEA),
tax system of the CR, state budget, management of public projects a their economic efficiency assessment, way of elaboration of PPP proje	cts, funding from EU funds, p	orogram HDM-4.
20Y1EK Qualification in Electrical Engineering	KZ	2
Practical experience with measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric s	hock hazard, symbols and la	abeling, nominal
voltage, maximum allowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first	aid, legislation, standards a	nd regulations
in relation to health and safety and electrical engineering.		
16Y1EN Energy Requirements of Vehicles	KZ	2
Dynamics and the driving inertial of the vehicles. Types of energy - kinetic, static, heat, chemical and others. Ways of energy change into k	inetic energy. Combustion e	ngine, electric
drive, steam engine, air engine. Energy accumulation means, accumulator, flywheel, fuel cell. Energy recuperation. WTW analysis.		
20Y1EA Environmental Aspects of Transport	KZ	2
State of the atmosphere, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation	, probabilistic forecasts, fore	ecast evaluation.
Air quality, main pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy a	and transportation in climate	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, co	mmunism. Little Entente, its	principles and
goals. Europe after Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Co	ld war and its consequence	s for Europe.
New quality of French-German relationship - a driving power of starting European integration.		
18Y1EM Experimental Methods in Mechanics	KZ	2
The purpose and role of experimental mechanics. Sensors for mechanical testing. Overview of experimental methods. Destructive and nor	n-destructive testing of mate	rials. Design of
experimental procedures and sample preparation. Tensile and bending tests. Electrical resistance strain gages. Optical based strain meas	urement. Fatigue and lifetime	e prediction.
Instrumented hardness testing. Introduction to electron microscopy. Errors in measurement.		
15Y1FD French Area Studies and Transportation	KZ	2
France - geography and regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic,	TGV, air traffic, specialised to	erminology.
French society and culture. Current political system. System of education, studying in France. Selected authors of French literature. French		
14Y1HW Computer Hardware	KZ	2
Computer architecture, basics of logical circuits design and their realization using FPGA. In detail, description of computer architecture an	d separate 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. Dev		
World airports. Famous aviators. Helicopters. CSA airplanes. Development of aircrafts in Czechoslovakia between the years 1945-1989. C	lassic era of aviation. Golde	n era of civil
aviation. Modern era of civil aviation. Airline companies. Supersonic flying.		
15Y1HD History of City Mass Transport	KZ	2
History of city mass transport in the world, development of tram, bus and trolley-bus systems. History of transport networks in the world, c	-	ents of tariff and
clearance systems. History of city transport in Prague and Brno. History of tram, bus and trolley-bus operation systems in the Czech Repu	blic and Slovakia.	
12Y1HD Traffic Noise	KZ	2
Acoustic introduction, basic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standard	ts, regulations. Creation acc	oustic climate in
area, principles of urban acoustic, noise transmission, soundproofing. Types of noise sources in area. Determination of acoustic situation i	n the area of interest. Metho	dology of
computing and measurement of transport noise. Acoustic studies, measuring protocol.		

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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		
Creation and protection of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technology	to possibilities and	l skills of a man.
Practical examples from the field of transportation; relevant legislature.	==	1
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	nulators.	
12Y1KN Combined Transportation	KZ	2
Combined transport strategy and legislation. Load units. Means of transport in combined transport. Combined transport systems. Transshipping are	eas. Multimodal log	istic centres.
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 will	h the media, the p	ublic on social
networks and beyond. Communication strategy of transport projects. Systematic goodwill building. Crisis situations in communication and preparat	on for crisis comm	unication. The
influence of political marketing and political PR on transport projects. Lobbing.		
20Y1KP Communication and presentation skills	KZ	2
Motivation, priorities and their fulfillment, current communication networks, work with various sources, formal requirements of emails and final thes	1	of personalities,
teamwork, emotional intelligence, manipulation and way of working with it, coping with stressful situations, formal requirements of presentations, w	ays of communicat	ion during
presentation, presentation skills, presentation skills in online environment.		
21Y1LJ Aeronautical Radio and Flight Instruments	KZ	2
Basic definitions, history of aircraft instrumentation, aerometric instrumentation, Earth magnetism, aircraft electric equipment, gyroscopic instrumen		
other aircraft equipment, engine instrumentation, warning and recording systems, instrumentation operational requirements, radiocommunication a		
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,		
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 of Passenger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aeria	1	1
air cargo. Information systems in air transport. Global distribution systems.	transport process	passengers and
	1/7	0
20Y1LN Location and Navigation	KZ	2
Description and examples of road networks, localization on the network. Routing algorithms, their properties and implementation. Description and	examples of datase	ets for finding
transport connections, routing algorithms, their properties and implementation.		
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 transp	ort and the resultin	g differences in
the application of marketing.	-	
18Y1MT Engineering Materials	KZ	2
Systematic overview of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers	s 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 selecti	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 exercises and the subject's syllabus is focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests.	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	ment of students' N	latlab skills.
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, pig	elines, and distribute	ution lines.
Photorealistic output rendering - physical and material properties, lighting sources. MKP - visual example.		
15Y1MK Modern History in Context: Every Day Life and Transport	KZ	2
Historical overview of modern history of every day life, science, technology and transport in a wider context.	I	I
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	1	1
selected topics.		Bioodobion 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 or	1	1
various aspects of their strategy, economic and operational indicators. It introduces students in detail to operational processes and the essentials of t	•	•
a basic view of the economic aspects of air transport.	ransportation proce	esses. It provides
	1/7	2
20Y10I Fare Collection and Information Systems	KZ	2
Fare collection systems in public transport and their components (on-board units, validators, turnstiles,). Information systems and their components (on-board units, validators, turnstiles,). Information systems and their components (on-board units, validators, turnstiles,).		ables, maps,
panels) and operators (cycles, location or current delay of vehicles,). The issue of tariff systems. Other examples of clearance systems (parking the system) and the system of		
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		
runlevels. Basic console programs / commands. Config files. SW management, package systems. Programs in graphic shell - text, spreadsheet, gr	aphic editors, soun	d, video and
communication. Services management. Safe and secure configuration of OS. Remote administration.	1	
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	housing (rent, mort	gage, savings,
consumer loans, refinancing), savings and investments (investment horizon, return, risk, investment strategy), insurance (insurance types, suitability	and adequacy), se	curing the future
(retirement savings and insurance).		
20Y1OK Road Lighting	KZ	2
Basic lighting quantities and terms, street lighting components (luminaires, control cabinets for street lighting, street lighting cables), characteristics of	luminaires (lifetime	of light sources,
light distribution), standards, measurement of illuminance and luminance in road lighting, tunnels, conceptual approach to street lighting design, lighting des	hting calculations i	n DIALux and
Relux, street lighting control systems.		
11Y1PV Parametrical and Multicriterial Programming	KZ	2
Solution to the problem of linear programming with a parameter in objective function, on right sides and in the matrix of coeficients of linear constrain	1	efficient solution.
17Y1PM Personnel Management	KZ	2
		1
Human sources, work group, man as personality, planning, choice, evaluation and education of human sources, work adaptation, teamwork, interc	antariar oonninamoan	

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	1
for cyclists. Separation of cyclists from other transport modes. Cycle tracks and its design - one way streets, reserved traffic lanes, bus stops, cross	-	
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 e		
level scope) using layers, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics cards.		
14Y1P2 Computer Aid of Transportation Projecting 2	KZ	2
Overview of CAx application for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting	1	-
modification (attributes, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic trans		
section). Basics of 3D modelling.		
18Y1PS Computer Simulations in Mechanics	KZ	2
Principles and overview of tools for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model develo		_
from other CAE systems. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary condition		• ,
tasks of structural and modal analysis. Introduction to complex nonlinear problems.	s and application c	n the load. Dasic
	KZ	2
14Y1PI Corporate Information System Data-information-knowledge, components of information system, syntatic and semantic sense of data, structure of corporate information system, p	1	2
		-
(personalistic, production, storage, etc.), corporate information politic and information control, risks of information system operation, legal environme state information system, information system security, data protection, safety politics.	int of information s	ystem operation,
	1/7	0
14Y1PZ Advanced Data Processing in Spreadsheets	KZ	2
Students will be familiar with principles of working in a spreadsheet. Graphic layout of the table appearance, formatting of numbers, insertion of form		-
addressing, error detection. Working with large spreadsheets, filters, advanced filters, database functions. Pivot tables and charts, conditional formatti	ng, solution finding	, solver, macros,
data analysis. Examples and questions from various companies and training.	1/7	
21Y1PC ATC Procedures and Activities	KZ	2
Air traffic control procedures, basics of communication and phraseology, aircraft identification, spacing and traffic coordination. In addition, the cour		affic control at
the airports and low visibility operational procedures. Students will during the course learn basic safety management applications applied across the	1	1
12Y1PD Assessment of Transport Structures	KZ	2
Assessment of transport structures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibilit	-	
transport structures on the landscape. Rating fragmentation and landscape connectivity in the preparation of linear structures. Practical examples of	f assessment of tra	affic buildings on
the environment.		
20Y1PK Product Quality Management Processes	KZ	2
General principles of organization management. Management systems and international standards; quality management systems. Quality products	, processes, syste	ms. A framework
of standards for systems management, management principles. Principles of process management, monitoring and measurement systems management	ent. Uniform framev	vork of standards
for systems management. Process management principles. Metrology and testing. Product certification.		
14Y1PJ C Programming Language	KZ	2
C programming language. Preprocessor, basics of the C language (data types, syntax, commands), functions, pointes, dynamical memory allocation	string, files, struct	ures and unions.
Implementations of abstract data types (FIFO, LIFO, list), programming techniques (sorting, searching, recursion), using bitwise oprerators.		
12Y1C1 Designing Roads in Civil 3D I	KZ	2
The course is devoted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go thro	ugh the complete of	design of this
particular linear building, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. T	he course also inc	ludes a basic
explanation of the traffic building design in the real-life profession.		
12Y1C2 Designing Roads in Civil 3D II	KZ	2
The course is devoted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go thro	ugh the complete of	design of this
particular linear building, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. T	he previously acqu	uired skills are
improved and developed. Students learn to design intersections.		
14Y1PA 3D Modeling in AutoCAD	KZ	2
Work in 3D non-parametric modeller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup creation, obj	1	vork with data
connected with external database. Basic definition of work with lights, materials and reflexes. Models presentation.		
16Y1PV Operation, Construction and Maintenance of Vehicles	KZ	2
Methods of vehicle production. Vehicle maintenance. Vehicle diagnostics. Maintenence and repair plans. Engine maintenance and emission measu	1	on mechanism.
General principles of engine diagnostics.		
12Y1PU Organization Disposition of Railway Stations	KZ	2
Connecting station. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Z	1	1
Reserve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic railway		, ,
12Y1RU Railway Lines Reconstruction	KZ	2
Keeping railway line operational, maintaining lines and stations, geometrical alignment of railway line, vehicles for railway superstructure and substructure a	1	1
and organising possesions, preparation of railway lines reconstruction and maintenance, process of raiway line reconstruction.		se, serieduling
16Y1RE Control and Electronic Vehicle Systems		2
Elementary concepts of regulation. Tools for analytical solution, linear system description. Basic types of a regulator (PID), properties, advantages, dis	K7	<u> </u>
	KZ	on Conventional
and hybrid drive control. Electric drive Vehicle communication bus (CAN LIN ElexBay ISObus, KWP2000 protocole etc.) Vehicle electronic control	dvantages, functi	
and hybrid drive control. Electric drive. Vehicle communication bus (CAN, LIN, FlexRay, ISObus, KWP2000 protocole etc.). Vehicle electronic contro comfort systems.	dvantages, functi	
comfort systems.	advantages, functi I, safety, communi	cation and
comfort systems. 21Y1RZ Human Resources Management	advantages, functi I, safety, communi	cation and
comfort systems. 21Y1RZ Human Resources Management The position of human resources in the organization and related disciplines file. Substance, importance and challenges of human resources management	advantages, functi I, safety, communi KZ Jement. Internal ar	cation and 2 nd external
comfort systems. 21Y1RZ Human Resources Management The position of human resources in the organization and related disciplines file. Substance, importance and challenges of human resources managenvironment of human resource management. Human resource planning. Search, recruitment and selection of employees. Motivation, evaluation and related disciplines file.	advantages, functi I, safety, communi KZ Jement. Internal ar	cation and 2 nd external
comfort systems. 21Y1RZ Human Resources Management The position of human resources in the organization and related disciplines file. Substance, importance and challenges of human resources managerent of human resource planning. Search, recruitment and selection of employees. Motivation, evaluation and dismissal and redundancies of employees. Education of employees. Planning career management.	advantages, functi I, safety, communi KZ gement. Internal ar d remuneration of s	cation and 2 Ind external staff. Positioning,
comfort systems. 21Y1RZ Human Resources Management The position of human resources in the organization and related disciplines file. Substance, importance and challenges of human resources management of human resource management. Human resource planning. Search, recruitment and selection of employees. Motivation, evaluation and dismissal and redundancies of employees. Education of employees. Planning career management. 17Y1ST Titan Simulation	advantages, functi I, safety, communi KZ gement. Internal ar d remuneration of s	2 d external staff. Positioning,
comfort systems. 21Y1RZ Human Resources Management The position of human resources in the organization and related disciplines file. Substance, importance and challenges of human resources management of human resource management. Human resource planning. Search, recruitment and selection of employees. Motivation, evaluation and dismissal and redundancies of employees. Education of employees. Planning career management. 17Y1ST Titan Simulation Titan is a management game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same process.	advantages, functi I, safety, communi KZ gement. Internal ar d remuneration of KZ luct. Students set a	2 d external staff. Positioning, 2 a price and
comfort systems. 21Y1RZ Human Resources Management The position of human resources in the organization and related disciplines file. Substance, importance and challenges of human resources manage environment of human resource management. Human resource planning. Search, recruitment and selection of employees. Motivation, evaluation and dismissal and redundancies of employees. Education of employees. Planning career management. 17Y1ST Titan Simulation Titan is a management game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same producter mine the quantity and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequent determine the quantity and capacity of production, plan budgets for marketing, research and development.	advantages, functi I, safety, communi KZ gement. Internal ar d remuneration of KZ luct. Students set a	2 d external staff. Positioning, 2 a price and
comfort systems. 21Y1RZ Human Resources Management The position of human resources in the organization and related disciplines file. Substance, importance and challenges of human resources manage environment of human resource management. Human resource planning. Search, recruitment and selection of employees. Motivation, evaluation and dismissal and redundancies of employees. Education of employees. Planning career management. 17Y1ST Titan Simulation Titan is a management game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same producter determine the quantity and capacity of production, plan budgets for marketing, research and development. They become familiar with the conseque of financial corporate reports and they use this information for other business decisions.	advantages, functi I, safety, communi KZ gement. Internal ar d remuneration of s KZ luct. Students set a nces of their decis	cation and 2 nd external staff. Positioning, 2 a price and sions by the form
comfort systems. 21Y1RZ Human Resources Management The position of human resources in the organization and related disciplines file. Substance, importance and challenges of human resources manage environment of human resource management. Human resource planning. Search, recruitment and selection of employees. Motivation, evaluation and dismissal and redundancies of employees. Education of employees. Planning career management. 17Y1ST Titan Simulation Titan is a management game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same productermine the quantity and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequence of financial corporate reports and they use this information for other business decisions. 21Y1SI ATC Simulator	advantages, functi I, safety, communi KZ gement. Internal ar d remuneration of s KZ luct. Students set a ences of their decis	2 ad external staff. Positioning, 2 a price and sions by the form 2
comfort systems. 21Y1RZ Human Resources Management The position of human resources in the organization and related disciplines file. Substance, importance and challenges of human resources manage environment of human resource management. Human resource planning. Search, recruitment and selection of employees. Motivation, evaluation and dismissal and redundancies of employees. Education of employees. Planning career management. 17Y1ST Titan Simulation Titan is a management game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same producter reports and they use this information for other business decisions. 21Y1SI ATC Simulator Familiarization with the simulation environment, acquiring basic habits, aircraft identification procedures, vectoring, level changes, ATC clearance, use the simulation of the simu	advantages, functi I, safety, communi KZ Jement. Internal ar d remuneration of s KZ Juct. Students set a sinces of their decis KZ Ise of RNAV points	2 ad external staff. Positioning, 2 a price and sions by the form 2 5. Practical
comfort systems. 21Y1RZ Human Resources Management The position of human resources in the organization and related disciplines file. Substance, importance and challenges of human resources manage environment of human resource management. Human resource planning. Search, recruitment and selection of employees. Motivation, evaluation and dismissal and redundancies of employees. Education of employees. Planning career management. 17Y1ST Titan Simulation Titan is a management game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same productermine the quantity and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequence of financial corporate reports and they use this information for other business decisions. 21Y1SI ATC Simulator	advantages, functi I, safety, communi KZ Jement. Internal ar d remuneration of s KZ Juct. Students set a sinces of their decis KZ Ise of RNAV points	2 ad external staff. Positioning, 2 a price and sions by the form 2 S. Practical

20Y1SC Sensors and Actuators Principles of sensors and actuators. Basics of measuring theory and actuating influence. The respective technologies and construction principles. Sensor	KZ	2 electro-magnetic
state (temperature, humidity), chemical and particle flow values. Electrical, pneumatic and hydraulic actuators and solid phase elements.		
17Y1SL Sociology of Human Resources Human resources and their importance, work group as a special kind of social group, communication, personal management, modern management, t		2 planning culture
of the organization.	unanicources	planning, culture
11Y1SI Transportation Software Engineering	KZ	2
Basic concepts of software engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and implei and practical usuage.	nentation using to	ormal techniques
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 methods	, ,	`
Knowledge-based systems of quality and reliability, data collection.	usea in industria	applications.
12Y1SU Road Management and Maintenance	KZ	2
Getting familiar with ownership of roads in the Czech Republic and the administration of the road at the state and county level. It is presented develo medium and long-term strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and re	-	
classroom as well as investment activity in highway engineering.		
16Y1SO Strategy and innovation in mobility	KZ	2
Introduction to innovation, definition. Innovation strategy. Innovation life cycle and ecosystem, main sources and funding opportunities. Successful in co-financing, evaluation. Sprint method and its use. Innovative business model - main patterns and examples, design, strategy, processes and outloor		-
of use). Creating an innovation strategy. Customer and value map, design and testing.		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,	•	•
evaluation of the timetable. Vehicle circulation creation. Optimizing driver shifts and arranging them in turnus. Effects of barrier-free and public transp marketing.	ort preferences. I	ne role of
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 existence for their solving. Computational complexity, dealing with NP-complete problems, heuristic approach.	e and optimizatio	n and algorithms
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.	/our own applicat	ion programmed
in PHP language.	KZ	2
21Y1UL Aircraft Maintenance 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 intervals.	-	
EASA for aircraft maintenance. Seminars will be focused on practical application.		
14Y1UP Editing of Theses in MS Word Students will be introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, cre	KZ ate tables of conte	2 ents lists of
figures, tables, graphs, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless		
so that they are able to concentrate mainly on writing a thesis.		
18Y1UK Introduction of Rail Vehicles Basic characteristics and parameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion	KZ	2 ns Rolling and
track resistance. Total running resistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehicl		
and electric drive. Design concept rail vehicles and drive of wheel set.		
12Y1VR Public Transport in Cities and Regions Professional and political pillars of public transport. Accessibility of public transport. Transport demand management and directional coordination of li	KZ	2 line tracing
Basic operating parameters and transport variations. Types of lines according to their routing and basic operating parameters. Time coordination of li	-	-
Organization of tram operation in Prague. Tram safety.		
14Y1VM Development of Applications for Mobile Devices Object oriented programming, Java programming language, development environment, operating system Android, development application - widgets	KZ	2
permissions, services, GUI.	, containers, the	aus, 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 tra	nsportation. Critic	cal situation
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		
webdesign, content management systems, web server installation + configuration directives. The subject matter will be trained on examples.		
14Y1W1 Webdesign 1 Students will learn the basics of communication HTTP, URL and addressing, markup languages HTML and XHTML, HTML tags, rules of web accessil	KZ	2 CSS properties
and selectors, the issue of web browsers, creating one to three column layout pages, sites validation, conditional comments. Topics will be practiced		
14Y1W2 Webdesign 2	KZ	2
Students will learn advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, web directives. Topics will be practiced on practical examples.	server installation	n + configuration
16Y1ZG Introduction into Applied Computer Graphics	KZ	2
Computer graphics, division and applications with emphasis on transport, including development and research. Colours, colour perception, colour sc		principles of 2D
and 3D generation, elementary algorithms for graphic data workout. Visualisation principles and tasks, technics, graphics and visualisation HW basic graphics software.		
14Y1ZM Fundamentals of parametric and adaptive modeling	s. Introduction to	2D and 3D
		2D and 3D
Basics of work at products and parts creation. Sketch drawing by help of geometric relations, parametric dimensions, creation of adaptive models for	KZ	2
Basics of work at products and parts creation. Sketch drawing by help of geometric relations, parametric dimensions, creation of adaptive models fro from and to another systems. Fundamentals of assemblies creation.	KZ m 2D sketches. In	2 nport and export
Basics of work at products and parts creation. Sketch drawing by help of geometric relations, parametric dimensions, creation of adaptive models for	KZ m 2D sketches. In KZ	2 nport and export 2

14Y1ZJ	Fundamentals of programming in JAVA	KZ	2
Introduction to the Java	SE Platform. IDE Installation and First Project. Comments. Variables and Type System. Operators. User Input and Parsing. C	hain and Chain C	Conversion. Text
Chain and Mathematica	I Methods. Terms. Relational Operators and Switches. Cycles for, while, foreach. Field - declaration, initialization, methods fo	r field work. ASCI	I. Functions,
parameters, return value	e, recursion. Program creation.		
12Y1ZU	Principles of Urbanism	KZ	2
Survey on history of city	and settlement building. Functional components and their mutual relations (working, living, recreation, transportation). Space	ial arrangement o	of settlements.
Types of towns or cities	with a certain prevailing function, forms of their development. Brief overview of land-use planning.		
15Y1ZV	East-West dichotomy: Prelude to the Cold War	KZ	2
Historical prologue, evol	ution of the "West" and "East" from the 1500s. Focus on the history in the period between 1850 nad 1950. Milestones and con	tinuity of the interi	national relations
in the end of 19th centu	ry and the beginning of the 20th century. Revolutions, the causes and consequences. Scientific and technological progress, i	the causes and co	onsequences.
Economic and financial	history. Social changes. Discussions on texts, sources.		
16Y1ZL	Vehicle Testing, Legislation and Construction	KZ	2
Vehicle, bus and motorb	ke costruction, aggregate computing, driving resistance, build and parameters of traction, constructional arrangement of persor	nal cars, trucks, bι	ises, motorbikes,
legislation in the EU and	I in the world, technical legislation creation, testing methods, vehicle tests, accelerated tests, mathematical modelling in testi	ing.	

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

Code of the group: VP-BP-TET-20/21 Name of the group: Bachelor Full-Time TET voluntary Requirement credits in the group: Requirement courses in the group: Credits in the group: 0

Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
14DPK	Digital Support for Designing of Roads and Highways 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 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 Jakub Kraus, Vladimír Plos, Natalia Guskova 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 ichl	Z	0	0P+2C	L	V
11SSF	Secondary School Physics Course Zuzana Malá Zuzana Malá Zuzana Malá (Gar.)	Z	0	0P+2C	L	V
TVKLV	Physical Education Course	Z	0	7dní	L	V
TVKZV	Physical Education Course	Z	0	7dní	Z	V

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

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

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

Code of the group: VP-BP-TET-ITS Name of the group: Bachelor Full-Time TET-ITS 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
	acurace of this group of Study Plan, Code, VD DD TET ITS No				50 (

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

Solving problems on electric and magnetic field, electromagnetic field, optics and basics of solid-state physics.	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
	numbers and its limit. Basic properties of mappings. Function of one real variable, its limit and derivative. Indefinite integral, Newton in		al, imprope
	Riemann integral. First-order differential equations, linear differential equations.		
11CAL2	Calculus 2	Z,ZK	5
Linea	ar differential equations and their systems, differential calculus of functions of several real variables. Riemann integral in Rn. Line a	nd surface integrals.	1
11EMO	Electromagnetic Field and Optics	Z,ZK	4
	Electric field. Electric current. Magnetic field. Electromagnetic field. Optics. Basics of solid-state physics.		I
11FYZ	Physics	Z,ZK	5
	Kinematics, dynamics, Newton's laws, force fields, mechanics of continuum, thermodynamics, introduction to electrostatics and e	lectric current.	I
11GIE	Geometry	KZ	3
Differential geom	hetry of curves - parameterization, the arc of the curve, torsion and curvature, Frenet's trihedron. Kinematics - a curve as a trajector	ry of the motion, the v	elocity, and
	acceleration of a particle moving on a curved path.		
11LA	Linear Algebra	Z,ZK	3
Vector spaces (line	ear combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and	their solvability. Detern	minants and
	their applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classifi	cation.	
11MAMY	Mathematical Methods	Z,ZK	7
		Z,ZK	-
Mathematical mo	Mathematical Methods odeling. The system and its mathematical description. Types of signals. Basic system responses. Convolution. State models. Princip . Data measurement. Uncertainty in measured data. Data normalization. Preparation of data for further processing. Linear state mo	Z,ZK	ary / linear
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Mathematical mo state description. 11SCFZ 11SEMO 11SSF 11STAT Basics of probab 11TGA Basic terms of 11X31S 11X32S	Mathematical Methods odeling. The system and its mathematical description. Types of signals. Basic system responses. Convolution. State models. Princip Data measurement. Uncertainty in measured data. Data normalization. Preparation of data for further processing. Linear state mo condition estimation. Statistical learning methods. Regression, classification. Seminar of Physics Solving problems on kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, therm Seminar of Electromagnetic Field and Optics Solving problems on electric and magnetic field, electromagnetic field, optics and basics of solid-state physics. Secondary School Physics Course Basics of kinematics, dynamics, thermodynamics, electric field and magnetic field. Statistics Solity Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Paral Regression and correlation analysis Graph Theory and its Applications in Transport of graph theory, paths in graphs, flows in networks, location problems, design problems on graphs, optimum routing, use of graphs Project 1 ITS Project 2 ITS	Z,ZK ble of general / station idel over noisy data. K Z addynamics. Z Z Z,ZK metric tests Nonparan Z,ZK in other scientific disc Z Z	ary / linear alman filter 0 0 0 4 netric tests 4 iplines. 2 2
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	Demonstration I and Multipation in Demonstration	1/7	0
11Y1PV Solution to the proble	Parametrical and Multicriterial Programming of linear programming with a parameter in objective function, on right sides and in the matrix of coeficients of linear constraints	s. Computation of effici	2 ient solutio
11Y1SI	Transportation Software Engineering	KZ	2
Basic concepts of so	tware engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and imple	mentation using forma	al technique
11Y1TG	and practical usuage. Graph Theory	KZ	2
1	erminology of graph theory, graph representation. Problems of graph theory, problem instance. Graph search algorithms, trees		1
-	in 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.		-
11Y1ZM	Foundation of MATLAB Programming	KZ	2
o explain the princip	le of algorithmization, flow charts, description of MATLAB environment and its settings, MATLAB help, mathematical operators,	matrices and elements	s operatio
	control flow, inputs and outputs, graphics, optimization and program code debugging.	7 71/	
12MDE	Transport Models and Transport Excesses affic flow and methods for their measurement. Models of the traffic flow, communications load, line and urban systems. Theory of		3 Cuality
	sessment. Statistical characteristics of transport. Transport excesses, their analysis, the causes, identify and minimize the cons		-
	safety and fluency.	- 13	
12PPOK	Designing Roads, Highways and Motorways	KZ	3
	vnership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and stan		
ange of vision for s	topping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. S	Safety device. Crossing	gs, junctio
40)/040	intersections.		
12X31S	Project 1 ITS	Z	2
12X32S	Project 2 ITS	Z	2
12X33S	Project 3 ITS	Z	2
	Applied Ecology cological concepts and principles, ecosystem, ecological factors, energy flow through the ecosystem. Application of knowledge	KZ	2 tion Space
	be ecology - origin and historical development. Landscape definition and classification. Success. Traffic constructions in the cou		-
boology. Eurobou	protection. Applied ecology.	ni yolao. Lanaodapo a	
12Y1C1	Designing Roads in Civil 3D I	KZ	2
	ted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go thr	ough the complete de	sign of thi
particular linear bui	lding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation.	The course also inclue	des a bas
	explanation of the traffic building design in the real-life profession.		1
12Y1C2	Designing Roads in Civil 3D II	KZ	2
	ted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go thr ding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation.		-
particular intear bui	improved and developed. Students learn to design intersections.	The previously acquire	eu skilis ai
12Y1DS	Project Documentation in Practice	KZ	2
1	ion creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining proc		-
	creation of some project documentation parts.		
12Y1HD	Traffic Noise	KZ	2
	h, basic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regula		
area, principles o	f urban acoustic, noise transmission, soundproofing. Types of noise sources in area. Determination of acoustic situation in the a	area of interest. Metho	dology of
12Y1KN	computing and measurement of transport noise. Acoustic studies, measuring protocol. Combined Transportation	KZ	2
1	rt strategy and legislation. Load units. Means of transport in combined transport. Combined transport systems. Transshipping ar		1
12Y1KP	Communication and Promotion of Transport Projects	KZ	2
I	ublic Relations and the power of public opinion. Work and tasks of PR department and press spokesperson. Communication wi		
networks and beyo	nd. Communication strategy of transport projects. Systematic goodwill building. Crisis situations in communication and preparat	ion for crisis communi	ication. Th
	influence of political marketing and political PR on transport projects. Lobbing.	-	
12Y1PC	Pedestrian and Cycling Transport	KZ	2
-	is. Pedestrian crossings. Modifications for blind, dim-sighted and disabled people. Design of cycle routes network. Ways of cycle r		•
ior cyclists. Separat	ion of cyclists from other transport modes. Cycle tracks and its design - one way streets, reserved traffic lanes, bus stops, cross crossroads. Traffic signs and road marking for cyclists.	sings with other transp	
12Y1PD	Assessment of Transport Structures	KZ	2
	port structures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibiliti		
	on the landscape. Rating fragmentation and landscape connectivity in the preparation of linear structures. Practical examples of		
	the environment.		
12Y1PU	Organization Disposition of Railway Stations	KZ	2
-	. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas.		tion yards
	e stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Rep		-
12Y1RU	Railway Lines Reconstruction	KZ	2
	e operational, maintaining lines and stations, geometrical alignment of railway line, vehicles for railway superstructure and subst and organising possesions, preparation of railway lines reconstruction and maintenance, process of ralway line reconstr		schedulli
Keeping railway line	Road Management and Maintenance	KZ	2
12Y1SU	h ownership of roads in the Czech Republic and the administration of the road at the state and county level. It is presented devi		,
12Y1SU Getting familiar wit	h ownership of roads in the Czech Republic and the administration of the road at the state and county level. It is presented deven m strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and re	-	cussed in
12Y1SU Getting familiar wit		-	cussed in t
12Y1SU Getting familiar wit	m strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and re	-	cussed in t
12Y1SU Getting familiar wit nedium and long-ter 12Y1VR Professional and p	m strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and re classroom as well as investment activity in highway engineering. Public Transport in Cities and Regions olitical pillars of public transport. Accessibility of public transport. Transport demand management and directional coordination of	epair methods are disc KZ of lines. Principles of li	2 ne tracing
12Y1SU Getting familiar wit nedium and long-ter 12Y1VR Professional and p	m strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and re classroom as well as investment activity in highway engineering. Public Transport in Cities and Regions	epair methods are disc KZ of lines. Principles of li	2 ne tracing

12Y1ZU	Principles of Urbanism	KZ	2
Survey on history	of city and settlement building. Functional components and their mutual relations (working, living, recreation, transportation). Spacial	arrangement of se	ettlements.
	Types of towns or cities with a certain prevailing function, forms of their development. Brief overview of land-use planning.		
12ZADY	Introduction to Transportation Engineering	Z,ZK	4
12ZTS	Railway Lines and Stations	Z,ZK	4
Rail transport. Ra	ilway track geometry parameters. Route layout of railway lines. Railway line construction - railway substructure and superstructure. S	patial layout of rail	way lines.
	Railway control systems in relation to infrastructure. Operating and carriage points. Railway lines net and category. Traction in rail t		
14AM	Automation and Measurement	Z,ZK	6
	rms agent, rational agent, their unification to elements of transportation systems, analogies in nature, regulation in openen loop and o		
systems, control u	sing finite state machines. Dynamic system identification. Measurement of basic electric and other physical quantities, principles of m	neasurement instru	iments, DC
	and AC measurement, actuators, measurement automation, measurement laboratories.		-
14ASD	Algorithm and Data Structures	KZ	3
	ze problems, design a theoretical solution to a given problem and write the resulting algorithm using flowcharts, practice reading algor		
and use basic Bool	lean algebra to construct constraints in algorithms. Students will be introduced to the basics of the Python programming language - v	-	loops, they
440470	will learn to work with variables of basic data types (integer, floating point and string) and the list data structure in their progra		0
14DATS	Database Systems	KZ	2
	f 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		database
		1	0
14DPK	Digital Support for Designing of Roads and Highways	Z	0
	Seminars possibilities of technical processing problems focused on designing of roads and highways.	_	-
14DZT	Digital Support for Railway Lines	Z	0
	Seminars possibilities of technical processing problems solved in the field of railway lines.		
14ISYD	Information Systems in Transportation	Z,ZK	7
	cloud services concept, eGovernment-structure. Electronic communication and signature. IS life cycle and IT projects. Types of inform	-	-
implementation	in transport. Roles, processes, management, optimization in IS. Oracle data types. SQL Developer, SQL queries. Comprehensive ex	ample and web ap	plication
	programming.		
14PRG	Programming	KZ	2
-	ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python program		-
here so that the par	rticipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and searc	hing, tuples, sets,	dictionaries,
4.474.140	working with date and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML).	7 71/	7
14TAMS	Telecommunications and Local Area Networks	Z,ZK	7
	rrent state and introduction of the new trends in the development of telecommunication systems. The legal environment for the provision		
Services is explain	ned, basic telecommunication solutions in the hierarchical architecture of telecommunication networks are presented, and the links be parts and the performance of telecommunication systems.	etween the parame	
147210		7	2
14X31S	Project 1 ITS	Z	2
14X32S	Project 2 ITS	Z	2
14X33S	Project 3 ITS	Z	2
14Y1AV	Animation and Visualization	KZ	2
	tions and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and Spa		-
	s, rendering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animation	-	
14Y1BE	Barrierless Transport	KZ	2
	less accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students		
of barrierless enviro	onment roads, railway stations, public transport stops, terminal buildings, vehicles, public transport, information and orientation systems	and transportation	technology.
	Theoretical knowledge will be supplemented by practical examples.		-
14Y1BM	Biometric Methods	KZ	2
	rms, authentication methods, principles and performance measurement of biometric systems, overview of biometric technologies, ha		-
retina recognition m	nethod, 2D and 3D face recognition, vein patterns on the wrist, ear biometrics, fingerprint recognition, skin spectroscopy, behavioral r	nethods, the use c	of biometrics
4 43 (41 134)	in transport applications, safety and risks of biometric technologies.	1/7	0
14Y1HW	Computer Hardware	KZ	2
Computer archite	ecture, basics of logical circuits design and their realization using FPGA. In detail, description of computer architecture and separate partition of computer architecture and separate partition of logical units. I/O subjustem	parts designing - c	ontrollers,
	arithmetic and logical units, I/O subsystem.	1/7	2
14Y1MP	Modeling Complex Assemblies and Models in Parametric Modeller gramming - tools and methodology of working subassemblies and assemblies, sheet metal parts modelling, welded assemblies, pipe	KZ	2
Assemblies prog	Photorealistic output rendering - physical and material properties, lighting sources. MKP - visual example.	intes, and distribut	1011 111165.
14Y1OJ		KZ	2
	Object - oriented programming in JAVA Encapsulation. Classes. Attributes. Access modifiers. Methods and overloading. Special methods (constructors, getters / setters). Ba		1
	nce. Polymorphism. Statics, constants, interfaces, abstract classes, enum, packages, exceptions, collections, generics, lambda expre	-	
14Y1OP	Operating System	KZ	2
-	tallation GNU/Linux OS. X-window system. Rights management - users and groups, ACL rights. Filesystems and attributes. Program	1	1
	console programs / commands. Config files. SW management, package systems. Programs in graphic shell - text, spreadsheet, graph		
	communication. Services management. Safe and secure configuration of OS. Remote administration.	, sound,	
14Y1P2	Computer Aid of Transportation Projecting 2	KZ	2
	pplication for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, dat		
	ites, 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
	arametric modeller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup creation, object	1	
· ·	connected with external database. Basic definition of work with lights, materials and reflexes. Models presentation.		
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		
	level scope) using layers, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphic	s cards.	

14Y1PI Data-informatio			
Data-information	Corporate Information System	KZ	2
(on-knowledge, components of information system, syntatic and semantic sense of data, structure of corporate information system, particular terms at a component of the sense o		-
(personalistic, proc	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.	information syste	en operation
14Y1PJ	C Programming Language	KZ	2
	 nguage. Preprocessor, basics of the C language (data types, syntax, commands), functions, pointes, dynamical memory allocation, strin		
o programming lar	Implementations of abstract data types (FIFO, LIFO, list), programming techniques (sorting, searching, recursion), using bitwise op		
14Y1PZ	Advanced Data Processing in Spreadsheets	KZ	2
	familiar with principles of working in a spreadsheet. Graphic layout of the table appearance, formatting of numbers, insertion of formu		
addressing, error d	letection. Working with large spreadsheets, filters, advanced filters, database functions. Pivot tables and charts, conditional formatting, s	olution finding, so	lver, macro
	data analysis. Examples and questions from various companies and training.		·,
14Y1TI	Creating Interactive Internet Applications	KZ	2
Possibilities of scri	pting language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions. You	own application	programme
	in PHP language.	1/7	
14Y1UP	Editing of Theses in MS Word introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, creat	KZ	2
	phs, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless ed		
g,, g	so that they are able to concentrate mainly on writing a thesis.	g	
14Y1VM	Development of Applications for Mobile Devices	KZ	2
Object oriented	programming, Java programming language, development environment, operating system Android, development application - widgets,	containers, threa	ds, menu,
	permissions, services, GUI.		
14Y1W1	Webdesign 1	KZ	2
	the basics of communication HTTP, URL and addressing, markup languages HTML and XHTML, HTML tags, rules of web accessibility		
	s, the issue of web browsers, creating one to three column layout pages, sites validation, conditional comments. Topics will be practice		· ·
14Y1W2 Students will learn	Webdesign 2 advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, web ser	KZ	2
	directives. Topics will be practiced on practical examples.	vor motalialiUII +	comyurali
14Y1WG	Webdesign	KZ	2
	rn the basics of HTTP communication, URL and addressing, HTML5 markup language, advanced CSS3 techniques, accessible and u		
	webdesign, content management systems, web server installation + configuration directives. The subject matter will be trained on e		
14Y1ZJ	Fundamentals of programming in JAVA	KZ	2
ntroduction to the	Java SE Platform. IDE Installation and First Project. Comments. Variables and Type System. Operators. User Input and Parsing. Chai	n and Chain Con	version. Te
Chain and Mathe	ematical Methods. Terms. Relational Operators and Switches. Cycles for, while, foreach. Field - declaration, initialization, methods for f	ield work. ASCII.	Functions,
	parameters, return value, recursion. Program creation.		
14Y1ZM	Fundamentals of parametric and adaptive modeling	KZ	2
basics of work at p	products and parts creation. Sketch drawing by help of geometric relations, parametric dimensions, creation of adaptive models from 2	J skelches, imdo	
	from and to another systems. Fundamentals of assemblies creation		n anu expu
15 171 0	from and to another systems. Fundamentals of assemblies creation.		-
15JZ1A	Foreign Language - English 1	Z	3
		Z nmunicative skills	3
	Foreign Language - English 1	Z nmunicative skills	3
Grammatical Struc	Foreign Language - English 1 tures and Style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and con stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles of	Z nmunicative skills f rhetoric. Z,ZK	3 3. Elementa
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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
1	ind social issues of German speaking countries and of the EU. Reading and listening of texts. Lexical, grammatical and semantic a selected topics.	1	1
15Y1ZV	East-West dichotomy: Prelude to the Cold War	KZ	2
1	evolution of the "West" and "East" from the 1500s. Focus on the history in the period between 1850 nad 1950. Milestones and continu	1	1
in the end of 19th o	century and the beginning of the 20th century. Revolutions, the causes and consequences. Scientific and technological progress, th Economic and financial history. Social changes. Discussions on texts, sources.	e causes and con	sequences.
16DOTE	Transport Technology	Z,ZK	6
	nain features and principles. Construction and design elements, important legislation, testing. Drives and transmission, energy acc teral, transversal, vertical, driveability, suspension, wheel-road contact), mathematic solution of dynamic systems. Design features o safety.		-
16SVIR	Vehicle Systems and Interaction with Driver	Z,ZK	7
16UDOP	Introduction into Vehicles	7	2
	ortation systems. Functionality and setup. Movement and drive principles. Engines and their characteristics. Rail, road, air and wate of transport. Lifting equipment and conveyors. Legislation.	er transport. Altern	-
16X31S	Project 1 ITS	Z	2
16X32S	Project 2 ITS	Z	2
16X33S	Project 3 ITS	Z	2
16Y1EN	Energy Requirements of Vehicles	KZ	2
Dynamics and the	driving inertial of the vehicles. Types of energy - kinetic, static, heat, chemical and others. Ways of energy change into kinetic energ drive, steam engine, air engine. Energy accumulation means, accumulator, flywheel, fuel cell. Energy recuperation. WTW and	, .	jine, electric
16Y1IS	Interactive simulators and simulations	KZ	2
	r and application of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical n tion of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and inter		methods.
16Y1KS	Quality and Reliability of Vehicles	KZ	2
-	lity theory in design, development, production and operation of vehicles. Definition and possible approach to quality and reliability. Analysis), QFD (Quality Function Deployment), DFx (Design for Assamly, Manufacturying, Quality, Services) and other methods Knowledge-based systems of quality and reliability, data collection.		-
16Y1PV	Operation, Construction and Maintenance of Vehicles	KZ	2
	production. Vehicle maintenance. Vehicle diagnostics. Maintenence and repair plans. Engine maintenance and emission measurem General principles of engine diagnostics.		
16Y1RE	Control and Electronic Vehicle Systems	KZ	2
	s of regulation. Tools for analytical solution, linear system description. Basic types of a regulator (PID), properties, advantages, disadv control. Electric drive. Vehicle communication bus (CAN, LIN, FlexRay, ISObus, KWP2000 protocole etc.). Vehicle electronic control	-	
401/100	comfort systems.	1/7	
16Y1SO	Strategy and innovation in mobility ovation, definition. Innovation strategy. Innovation life cycle and ecosystem, main sources and funding opportunities. Successful inn		2
	tion. Sprint method and its use. Innovative business model - main patterns and examples, design, strategy, processes and outlook of use). Creating an innovation strategy. Customer and value map, design and testing.		-
16Y1VT	Development in Railroad Vehicles	KZ	2
	traction. Railroad vehicle parametres regulation. Control and driving of railroad vehicles. Importance in heavy duty and personal tra assesment. New materials in design. International standardization.		1
16Y1ZG	Introduction into Applied Computer Graphics	KZ	2
	division and applications with emphasis on transport, including development and research. Colours, colour perception, colour schen, elementary algorithms for graphic data workout. Visualisation principles and tasks, technics, graphics and visualisation HW basic		•
16Y1ZL	graphics software. Vehicle Testing, Legislation and Construction	KZ	2
	orbike costruction, aggregate computing, driving resistance, build and parameters of traction, constructional arrangement of personal		
	ation in the EU and in the world, technical legislation creation, testing methods, vehicle tests, accelerated tests, mathematical mod		,
17TEDL	Transport Technology and Logistics	KZ	3
	port technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and freight tra		
each transport mo	dus, technologic factors of the side of operator and client, organisation of city transport, logistic technologies and their aplication us Project 1 ITS	Z	2
17X32S	Project 111S Project 2 ITS	Z	2
17X33S	Project 2 ITS Project 3 ITS	Z	2
17X333	Public Sector Economy	KZ	2
conomic and finance	cial theory of public sector, public choice theory, externalites, decisions about public finance allocation, economic assesment of pul s, state budget, management of public projects a their economic efficiency assessment, way of elaboration of PPP projects, funding fi	olic projects (CBA,	MCA, CEA)
17Y1LL	Logistics of Passenger and Freight Air Transport	KZ	2
1	senger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial transport air cargo. Information systems in air transport. Global distribution systems.		1
17Y1MD	Marketing in Transportation	KZ	2
	f marketing applied to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transport the application of marketing.	1	1
17Y10F	Personal Finance	KZ	2
1	udget, financing of basic living needs), debt (loans and credits, payment instruments, interest and fees, debt trap), financing of hou	ising (rent, mortga	ge, savings,
consumer loans, refi	nancing), savings and investments (investment horizon, return, risk, investment strategy), insurance (insurance types, suitability and (retirement savings and insurance).	adequacy), secur	ing the future

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Both Starting Note: Starting KZ KZ 17Y15L Sociology of Human Resources KZ			1		
Instrument Image: control in the importance, work group as a second and of coal group, commutation, percent an anagement, modern management, human assocrate permiting, culture of the coal group and the	-		-	-	
17Y1SL Sociology of Human Resources KZ 2 18Y1S Tan is annagement junce an special biol of boost pace. Common management, human mesusce planning, culture of the organization. KZ 2 19Y1ST Tan is annagement junce simulating the business decisions. Lets 2-6 students and carpoint plants with the man packade students as a plant and or foreign the plants in the transmitter in the same packade. KZ 2 10MT Materials States and Engineering KZ 3 10MT Materials States and Engineering KZ 3 10MT Materials States and Engineering Carpost and Engineering KZ 3 10MT Materials States and Engineering Carpost and Engineering Carpost and Engineering Carpost and Engineering 10PAZ Elesticity and Strength Elesticity and Strength Carpost and plants Carpost and plants 18SAT Ippear decision and compression. Bending Cleants and analysis of coase screture. Combineering Stateling Zarpost and strength Carpost and stre			Sit preferences. IT		
Name neurons and their importance, work group as a special finited reads graph, communication, personal management, modern management, hurden measures planning, Lular of the organization. 1171131 Titles is a management game sincitient, the buaness decision. In LeS 24 studyet approximation to provide in the namest with the same product. Students test and advectore is the humans the intervent of the advectore plan to approximate and capacity of postation. In the fact advectore plan to approximate and capacity of postation. In the capacity of postation can be experimentation of the advectore plan to approximate and capacity of postation. The buanes decision. In the capacity of postation of the advectore plan to approximate and capacity of postation. The buanes decision. In the capacity of postation of the advectore plan to approximate and capacity of postation products and the plan to approximate and capacity of postation products and the plan to approximate and capacity of postation products and the plan to approximate and capacity of postation products and the plan to approximate and capacity of postation of the plan to approximate and capacity of postation products and the plan to approximate and capacity of the plan to approximate and the plan to approximate and capacity of the plan to approximate and capacity of the plan to approximate and capacity of the plan to approximate and capacity and the plan to approximate and capacity of the plan to approximate and capacity approximate and capacity of the plan to approximate and capacity of the plan to approximate and capacity approximate and capacity approximate and capacity approximate and capacity of the plan to approximate and capacity approximate and capproximate and capacity of the pla	17Y1SL		KZ	2	
17Y1ST Then Simulation KZ 2 18m is a management game simulating the bueness declosite. Like 24 student gravity to produce in the manket with the same product. Students set aprice and development. They secons threat studence of primary and capacity of production, plan budgets for marketing, needed and development. They secons threat studence of deprivation and the studence and deprivation regiment and the studence and deprivation regiment and they use the formation for order to antice studence and monotorucure. Newwork The mark attention is paid to market a store and a component. They secons the studence and component experiments at a store and the producing fores and monotorucure. Newwork The mark attention is paid to market a store and a component experiment and the plan to instance and component. A store and a store plan and component experiments at a store and the plan to antiget and the store and component experiments. Store and the store and component experiments at a store and the store and component experiments at a store and the store and component experiments at a store and the store and component experiments at a store and the store and component experiments at a store and the store and component experiments at a store and the store a			1	1	
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estermine the quantity and capacity of production, piles todgets for marketing, research and development. They become tarvitation with the consequences of their decisions by the form of thrance accomposite sports and any use the intermination or their busines decisions. 1MIT Materials Science and Engineering Z,ZK 3 Basic course of market sports and development. They become their boding forces and microprostites. Actention is acid to advect the sport on an mechanical population development. They decision and composites. Actention is acid to advect they and the development of the sport sport of the sport			1	1	
of Imarcial corporate sports and they use this information for other buillings decisions. 3 19MTV Matriands Science and Engineering accellant, advanced propensition of antucharal metalities as do on their bonding fores and microscients. Alterioline is at a possibility of the structure in the sport of registric and compression. Bending of beam. These in seeking of beam. Design and analysis of cross section of bases. Design and compression. Bending of beam. Sheer stress in hending of beam. Design and analysis of cross section of bases. The section of the se					
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Instantials, to defectacopy and to main mechanical tests. Variability ZZK 3 18PE2P Elasticity and Strength ZZK 4 3 18SAT Structural Analysis of defection or eve obtems. These in other and statute structures. Analysis of defection or eve obtems. These interests ensities. Contributed to the structures. Assessment of interest foress on statute by determinate part ensities on statute by determinate part ensities or a statute by determinate part ensities or plane and part. ZZK 4 18SPP Seminary from Elasticity and Strength Z 0 2. Exernsise for practice. Flexion and structures. Assessment of chairs. 0 0 2. Exernsise for practice. Flexion and structures. Assessment of chairs. Z 0 2. Exernsise for practice. Clearcial system of forces. Reactions of mass objects and analysis of crass section. Chairs and system of crass section. Z 0 2. Exernsise for practice. Clearcial system of forces. Reactions of mass objects and analysis of crass section. Xasis for a structure analysis of defection curve or other exercises and structures. Z 0 2. Exernsise for practice. Clearcial system of forces. Reactions of mass objects and analysis of crass section. Xasis for a structure analysis of defection curve or other sections and structure analysis of defection curve analysis of defection curve or othestas section. Z 0 </td <td></td> <td></td> <td></td> <td></td>					
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20RISI Road Traffic Control Z,ZK 7 Traffic node management - basic concepts, SSZ design criteria, SSZ production project, dynamic SSZ management, public transport preferences, traffic area management, microscopic	voltage, maximum				
Traffic node management - basic concepts, SSZ design criteria, SSZ production project, dynamic SSZ management, public transport preferences, traffic area management, microscopic					
				1	
ITATIC MODELS, MACTOSCODIC ITATIC MODELS, ITATIC MANAGEMENT ON MOTORWAYS, TUNNEL SYSTEMS	iranic node manag	ement - basic concepts, SSZ design criteria, SSZ production project, dynamic SSZ management, public transport preferences, traffic a traffic models, macroscopic traffic models, traffic management on motorways, tunnel systems.	rea management,	microscopic	

			r
20RIZE	Railway Traffic Management	Z,ZK	7
	ent of security technology, external elements (switches, signals, detection means), station, track and crossing security equipment, ex control structure, traffic control technology, automation and traffic control optimization, power supply systems, energy calculations a		
20SYSA	Systems Analysis	Z,ZK	5
	m sciences, system viewpoint, terminology, typical system analysis tasks, system identification, system interface and interface tasks,	,	-
	rong 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
	slative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamentals of inform		
systems for ITS. Prir	ciples and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real examples	of possible applic	ations of the
20/240	principles of ITS.	7	<u> </u>
20X31S	Project 1 ITS	Z Z	2
20X32S	Project 2 ITS		2
20X33S	Project 3 ITS	Z	2
20Y1AE	Applied Electronics	KZ	
	gic gates. Functions of basic electronic circuits and methods for their designs (rectifiers, voltage regulator with Zener diode, transisto	-	-
	amplifier as an inverting and noninverting amplifier).		
20Y1AF	Alternative Forms of Transportation Project Financing	KZ	2
In will be specifed su	ich forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt paym	ents come from it	s budget bu
the final debtor is no	t a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of secu	urities as an altern	ative source
	of transportation and telecomunication projects.		
20Y1EA	Environmental Aspects of Transport	KZ	2
•	nere, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilistic 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
-	with measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock hazard, s		1
	allowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legislatic	-	-
5,	in relation to health and safety and electrical engineering.		0
20Y1KP	Communication and presentation skills	KZ	2
Motivation, priorities	and their fulfillment, current communication networks, work with various sources, formal requirements of emails and final theses, b	asic typology of p	ersonalities
teamwork, emoti-	onal intelligence, manipulation and way of working with it, coping with stressful situations, formal requirements of presentations, way	s of communication	on during
	presentation, presentation skills, presentation skills in online environment.		
20Y1LN	Location and Navigation	KZ	2
Description and ex	amples of road networks, localization on the network. Routing algorithms, their properties and implementation. Description and exal transport connections, routing algorithms, their properties and implementation.	npies of datasets	for finding
20Y1OI	Fare Collection and Information Systems	KZ	2
	tems in public transport and their components (on-board units, validators, turnstiles,). Information systems and their components		1
	els) and operators (cycles, location or current delay of vehicles,). The issue of tariff systems. Other examples of clearance syste		, -1-,
20Y1OK	Road Lighting	KZ	2
Basic lighting quantit	ies and terms, street lighting components (luminaires, control cabinets for street lighting, street lighting cables), characteristics of lumin	naires (lifetime of l	ight sources
light distribution), s	tandards, measurement of illuminance and luminance in road lighting, tunnels, conceptual approach to street lighting design, lighting	g calculations in [DIALux and
	Relux, street lighting control systems.		
20Y1PK	Product Quality Management Processes	KZ	2
	f organization management. Management systems and international standards; quality management systems. Quality products, proc ems management, management principles. Principles of process management, monitoring and measurement systems management. U		
of standards for syste	for systems management. Process management principles. Metrology and testing. Product certification.	monnmanework	orstandard
20Y1SC	Sensors and Actuators	KZ	2
	and actuators. Basics of measuring theory and actuating influence. The respective technologies and construction principles. Sensors of		
-	state (temperature, humidity), chemical and particle flow values. Electrical, pneumatic and hydraulic actuators and solid phase electrical	ments.	-
20ZEKT	Fundamentals of Electrical Engineering	Z,ZK	4
	electrotechnical quantities (electrical current, voltage, resistance, conductivity, resistivity, conductivity, power, energy), Ohm's law, Ki		
	ods, DC and AC circuits, accumulators, photovoltaics), electric machines, transmission lines, reflections on transmission lines, basic		1
21SLD	Seminar of Air Transport	Ζ	0
	ns, terminology, basic rules. VFR / IFR. Basics of aerodynamics. Propulsion of aircraft. Aircraft design. Basics of navigation, radio na t planning, optimization of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic ma		
penormance. r nyn	security. Air crew. Airlines and economics. Space technologies.	lagement, ground	a nanuliny,
21X31S	Project 1 ITS	Z	2
21X32S	Project 2 ITS	Z	2
	Project 2 110	Z	2
	Aeronautical Information Management (AIM)	KZ	2
21X33S		· \	1
21X33S 21Y1AM	overview of AIS and AIM. Transition from AIS to AIM. Regulatory base. Provision of AIS/AIM in the Czech Rep. AIP (Aeronautical In	f. Publication). VF	R Manual o
21X33S 21Y1AM Definition and basic		,	
21X33S 21Y1AM Definition and basic the Czech Rep. Alf	overview of AIS and AIM. Transition from AIS to AIM. Regulatory base. Provision of AIS/AIM in the Czech Rep. AIP (Aeronautical In	ropena AIS Datab	
21X33S 21Y1AM Definition and basic the Czech Rep. AIF 21Y1BS	overview of AIS and AIM. Transition from AIS to AIM. Regulatory base. Provision of AIS/AIM in the Czech Rep. AIP (Aeronautical In RAC System. NOTAM messages.PIB (Pre-flight Informtion Bulletin). AIC (Aeoronautical Inf. Circulars). Aeronautical Charts. EAD (Eu (Quality Mng. System). ADQ (Aeronautical Data Quality). AIXM (Aeronautical Inf. Exchnage Format). Unmanned aircraft systems 1	ropena AIS Datab	base). QMS
21X33S 21Y1AM Definition and basic the Czech Rep. AIF 21Y1BS	overview of AIS and AIM. Transition from AIS to AIM. Regulatory base. Provision of AIS/AIM in the Czech Rep. AIP (Aeronautical In RAC System. NOTAM messages.PIB (Pre-flight Informtion Bulletin). AIC (Aeoronautical Inf. Circulars). Aeronautical Charts. EAD (Eu (Quality Mng. System). ADQ (Aeronautical Data Quality). AIXM (Aeronautical Inf. Exchnage Format). Unmanned aircraft systems 1 Development. Aircraft design. Legislation in force in the Czech Republic. Planning and execution of the flight. Airspace division. Ope	ropena AIS Datab	oase). QMS
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21X33S 21Y1AM Definition and basic the Czech Rep. AIF 21Y1BS Unmanned Aviation 21Y1LJ	overview of AIS and AIM. Transition from AIS to AIM. Regulatory base. Provision of AIS/AIM in the Czech Rep. AIP (Aeronautical In RAC System. NOTAM messages.PIB (Pre-flight Informtion Bulletin). AIC (Aeoronautical Inf. Circulars). Aeronautical Charts. EAD (Eu (Quality Mng. System). ADQ (Aeronautical Data Quality). AIXM (Aeronautical Inf. Exchnage Format). Unmanned aircraft systems 1 Development. Aircraft design. Legislation in force in the Czech Republic. Planning and execution of the flight. Airspace division. Ope	KZ KZ KZ KZ	oase). QMS 2 operational 2

21Y1LS	Air Traffic Services	KZ	2	
Airspace structure	n Czech Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, APP	a ACC control. His	story of ATS	
	at USA and Czechoslovakia. ATS - Model of financing. Training System of Air Traffic Controllers. Future development of ATS	6.		
21Y1MP	Matlab for project-oriented study	KZ	2	
The subject's sylla	bus is focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exercises	will be prepared a	ccording to	
particular examp	les, based on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improvement	ent of students' Mat	tlab skills.	
21Y1OH	Airline Business and Operations	KZ	2	
The course provide	s a comprehensive view of the commercial, operational and transportation activities of air transport companies. It focuses on the organiz	ational structure of	companies,	
various aspects of t	heir strategy, economic and operational indicators. It introduces students in detail to operational processes and the essentials of transp	ortation processes	s. It provides	
	a basic view of the economic aspects of air transport.			
21Y1PC	ATC Procedures and Activities	KZ	2	
	procedures, basics of communication and phraseology, aircraft identification, spacing and traffic coordination. In addition, the course			
the airpor	ts and low visibility operational procedures. Students will during the course learn basic safety management applications applied acro	ss the infrastructur	re.	
21Y1RZ	Human Resources Management	KZ	2	
The position of h	numan resources in the organization and related disciplines file. Substance, importance and challenges of human resources manage	ment. Internal and	external	
environment of hum	nan resource management. Human resource planning. Search, recruitment and selection of employees. Motivation, evaluation and ren	nuneration of staff.	Positioning,	
	dismissal and redundancies of employees. Education of employees. Planning career management.			
21Y1SI	ATC Simulator	KZ	2	
	vith the simulation environment, acquiring basic habits, aircraft identification procedures, vectoring, level changes, ATC clearance, us			
exercises focusir	g on basic vectoring, early application of vertical separation, EST and REV message passing. Practical exercises in the APPROACH	l area, practicing a	rrival and	
	departure management procedures, conflict resolution.			
21Y1UL	Aircraft Maintenance	KZ	2	
	and technical operations. Maintenance and work processes. Defects search methods, status check diagnostic tools. Selection and qua		•	
Basic documentati	on for maintenance. Optimization of time maintenance intervals. Regulation no. 1321/2014 Part 145. Human factors of aircraft maintenance	enance. Regulation	of director	
	EASA for aircraft maintenance. Seminars will be focused on practical application.			
21ZALD	Basics of Air Transport	KZ	2	
	terminology, basic rules. VFR/IFR. Basics of aerodynamics. Propulsion of aircraft. Aircraft design. Basics of navigation, radio navigation.			
Flight planning, 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.			
22X31S	Project 1 ITS	Z	2	
22X32S	Project 2 ITS	Z	2	
22X33S	Project 3 ITS	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 <u>http://bilakniha.cvut.cz/en/FF.html</u> Generated: day 2025-06-03, time 05:36.