Study plan

Name of study plan: Bachelor TET-ITS Full-Time from 2022/23

Faculty/Institute/Others:

Department:

Branch of study guaranteed by the department: Welcome page

Garantor of the study branch:

Program of study: Technology in Transportation and Telecommunications

Type of study: Bachelor full-time

Required credits: 180 Elective courses credits: 0 Sum of credits in the plan: 180

Note on the plan:

Name of the block: Compulsory courses Minimal number of credits of the block: 162

The role of the block: Z

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

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

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

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

Credits in the group: 30 Note on the group:

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

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

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

11LA Linear Algebra Z,ZK 3
Vector spaces (linear combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and their solvability. Determinants and

·	Introduction to Transportation Engineering	Z,ZK	2
Role of transport	ation in land-use planning. Basic terms in transportation engineering. Traffic survey and traffic prognosis. Introduction to topic of ro	oads, public mass trar	sport. Negative
impacts of transp	portation to environment and safety.		
18MTY	Materials Science and Engineering	Z,ZK	3
Basic course of n	naterials science and engineering explains mechanical properties of structural materials based on their bonding forces and micro	structure. However the	e main attention
is paid to metals	as the most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers a	nd composites. Attent	ion is also paid
to degradation pr	ocesses in materials, to defectoscopy and to main mechanical tests.		
11GIE	Geometry	KZ	3
Differential geom	etry of curves - parameterization, the arc of the curve, torsion and curvature, Frenet's trihedron. Kinematics - a curve as a trajec	tory of the motion, the	e velocity, and
acceleration of a	particle moving on a curved path.		
14ASD	Algorithm and Data Structures	KZ	3
Students will ana	lyze problems, design a theoretical solution to a given problem and write the resulting algorithm using flowcharts, practice reading	g algorithms written u	sing flowcharts,
and use basic Bo	polean algebra to construct constraints in algorithms. Students will be introduced to the basics of the Python programming langua	age - variable, branch	ing, loops, they
will learn to work	with variables of basic data types (integer, floating point and string) and the list data structure in their programs.		
14KSP	Constructing with Computer Aid	KZ	2
"CAD systems" to	erm determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic commo	on work rules in graph	ic applications
and CA systems.	Co-ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting policy projecting projecti	ossibilites, AutoCAD e	
nrofiles drawing			environment
promes, drawing:	s with raster foundaments).	, , , , , , , , , , , , , , , , , , , ,	environment
18TED	s with raster foundaments). Technical Documentation	KZ	environment 2
18TED		KZ	2
18TED	Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimens	KZ	2
18TED Technical standa	Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimens trawing sheets.	KZ	2
18TED Technical standa arrangement of de 15DPLG	Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimens	KZ ional and geometrica	2 I accuracy,
18TED Technical standa arrangement of d 15DPLG Subject of psycho	Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensification sheets. Transportation Psychology	KZ ional and geometrica Z e construction. Psychological Z E E E E E E E E E	2 I accuracy,
18TED Technical standa arrangement of d 15DPLG Subject of psycho	Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimens lrawing sheets. Transportation Psychology logy and its basic concepts. Information intake, decision-making and behaviour. Performance. Engineering psychology and vehicle	KZ ional and geometrica Z e construction. Psychological Z E E E E E E E E E	2 I accuracy,
18TED Technical standa arrangement of d 15DPLG Subject of psycho of travel route an 16UDOP	Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimens lrawing sheets. Transportation Psychology ology and its basic concepts. Information intake, decision-making and behaviour. Performance. Engineering psychology and vehicle d traffic conditions, accidents and traffic incidents. Selection and training of the staff. Work and leisure. Age as a factor in transpo	KZ cional and geometrica Z cional and geometrica cional and geomet	2 I accuracy, 2 Dlogical aspects
18TED Technical standa arrangement of d 15DPLG Subject of psycho of travel route an 16UDOP Vehicles and trare	Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensification sheets. Transportation Psychology rlogy and its basic concepts. Information intake, decision-making and behaviour. Performance. Engineering psychology and vehicle d traffic conditions, accidents and traffic incidents. Selection and training of the staff. Work and leisure. Age as a factor in transpo	KZ cional and geometrica Z cional and geometrica cional and geomet	2 I accuracy, 2 Diogical aspects
18TED Technical standa arrangement of d 15DPLG Subject of psycho of travel route an 16UDOP Vehicles and trare	Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensification sheets. Transportation Psychology rlogy and its basic concepts. Information intake, decision-making and behaviour. Performance. Engineering psychology and vehicle diraffic conditions, accidents and traffic incidents. Selection and training of the staff. Work and leisure. Age as a factor in transpo Introduction into Vehicles reportation systems. Functionality and setup. Movement and drive principles. Engines and their characteristics. Rail, road, air and	KZ cional and geometrica Z cional and geometrica cional and geomet	2 I accuracy, 2 Dlogical aspects

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:

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	B 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	S 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	B L	Z
18SAT	Structural Analysis Jaromír Kylar, Veronika Drechslerová, Nela Kr má ová, Jitka ezní ková, Daniel Kytý, Jan Vy ichl, Tomáš Doktor, Jan Falta, Jan Šleichrt Daniel Kytý (Gar.)	Z,ZK	4	2P+2C+14B	L 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 L	Z
14PRG	Programming Alena Kubá ová, Jan Procházka, Martin Fiala, Jana Kaliková, Jan Kr ál, Lukáš Svoboda Jana Kaliková Jana Kaliková (Gar.)	KZ	2	0P+2C+8B	B L	Z
17TEDL	Transport Technology and Logistics Vít Janoš, Michal Drábek, Zden k Michl, Rudolf Vávra, Stanislav Metelka Zden k Michl Vít Janoš (Gar.)	KZ	3	2P+1C	L	Z
21ZALD	Basics of Air Transport Jakub Hospodka, Tomáš Tlu ho, Ji í Volt, Peter Olexa, Jan Slezá ek, Jakub Trýb, Sébastien Lán, Bo Stloukal	KZ	2	0P+2C+8B	L L	Z
TV-2	Physical Education	Z	1		L	Z

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

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

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

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

Name of the group: 3rd Sem. Bachelor Full-Time TET from 2020/21

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

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

Credits in the group: 30 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11FYZ	Physics Old ich Hykš, Jana Kuklová, Pavel Demo, Zuzana Malá, Tomáš Vít Jana Kuklová Pavel Demo (Gar.)	Z,ZK	5	2P+2C+18B	Z	Z
12MDE	Transport Models and Transport Excesses Josef Kocourek, Tomáš Pad lek	Z,ZK	3	2P+1C+8B	Z	Z
17TGA	Graph Theory and its Applications in Transport Alena Rybi ková, Denisa Mocková, Dušan Teichmann	Z,ZK	4	2P+2C+12B	Z	Z
18PZP	Elasticity and Strength Jitka ezni ková, Daniel Kytý, Jan Vy ichl, Tomáš Doktor, Jan Šleichrt, Josef Jíra, Ond ej Jiroušek Ond ej Jiroušek Ond ej Jiroušek (Gar.)	Z,ZK	3	2P+1C+10B	Z	Z
20UITS	Introduction to Intelligent Transport Systems Ji í R ži ka, Patrik Horaž ovský, Kristýna Navrátilová, Viktor Beneš, Eva Haj iarová, Martin Langr, Vladimír Faltus, Pavel Hrubeš Martin Langr	Z,ZK	7	3P+2C+20B	Z	Z
12PPOK	Designing Roads, Highways and Motorways Josef Kocourek, Tomáš Pad lek, Polina Zayats, Petr Kumpošt Josef Kocourek (Gar.)	KZ	3	1P+2C+10B	Z	Z
14DATS	Database Systems Jana Kaliková, Jan Kr ál Jana Kaliková Jana Kaliková (Gar.)	KZ	2	1P+1C+10B	Z	Z
15JZ1A	Foreign Language - English 1 Eva Rezlerová, Markéta Vojanová, Dana Boušová, Marie Michlová, Marek Tome ek, Jan Feit, Markéta Musilová, Peter Morpuss, Lenka Monková,	Z	3	0P+4C+10B	Z	Z

Characteristics of the courses of this group of Study Plan: Code=3S-BP-TET-20/21 Name=3rd Sem. Bachelor Full-Time TET from 2020/21 11FYZ | Physics | Z,ZK | 5

Kinematics, dynamics, Newton's laws, force fields, mechanics of continuum, thermodynamics, introduction to electrostatics and electric current.

12MDE Transport Models and Transport Excesses Z,ZK 3

Parameters of the traffic flow and methods for their measurement. Models of the traffic flow, communications load, line and urban systems. Theory of queues, shock waves. Quality of transport and its assessment. Statistical characteristics of transport. Transport excesses, their analysis, the causes, identify and minimize the consequences. Improving of transport

transport and its assessment. Statistical characteristics of transport excesses, their analysis, the causes, identify and minimize the consequences. Improving of transport safety and fluency.

17TGA 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 other scientific disciplines.

18PZP Elasticity and Strength Z,ZK

Tension and compression. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolted and welded joints of structures. Analysis of deflection curve of beams. Torsion of circular cross sections. Combined loading. Stability.

20UITS	Introduction to Intelligent Transport Systems	Z.ZK	7					
Terminology and legislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamentals of information and telecommunication								
systems for ITS. Principles and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real examples of possible applications of the								
principles of ITS.								
12PPOK	Designing Roads, Highways and Motorways	KZ	3					
Definition, types, owner	ship, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standa	ırd speed. Route i	n rural areas.					
Range of vision for stop	ping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. S	afety device. Cros	sings, junctions,					
intersections.								
14DATS	Database Systems	KZ	2					
Basic concepts of datab	ase systems, conceptual model, relational data model, the principles of normal forms, relational database design, security a	nd integrity of dat	a, database					
queries, relational algeb	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	l communicative s	kills. Elementary					

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

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

Credits in the group: 22 Note on the group:

11MAMY

Mathematical mo

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 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, P emysl Toman, Josef Svoboda Josef Mík	Z,ZK	6	3P+3C	L	Z
15JZ2A	Foreign Language - English 2 Eva Rezlerová, Markéta Vojanová, Marie Michlová, Marek Tome ek, Jan Feit, Markéta Musilová, Peter Morpuss, Lenka Monková, Jitka He manová,	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

Z,ZK

mationation industries of the system and the mationation about prior is a system responded. Convention of the system of generally and the system of general generally and the system of general generally and genera							
state description. Data	state description. Data measurement. Uncertainty in measured data. Data normalization. Preparation of data for further processing. Linear state model over noisy data. Kalman filter						
condition estimation. St	atistical learning methods. Regression, classification.						
14AM	Automation and Measurement	Z,ZK	6				
	Automation and Measurement agent, rational agent, their unification to elements of transportation systems, analogies in nature, regulation in openen loop a	1 ' 1	6 ed loop, reactive				

systems, control using finite state machines. Dynamic system identification. Measurement of basic electric and other physical quantities, principles of measurement instruments, DC and AC measurement, actuators, measurement automation, measurement laboratories.

16DOTE Transport Technology

Types of vehicles, main features and principles. Construction and design elements, important legislation, testing. Drives and transmission, energy accumulation and changes. Road vehicle dynamics (lateral, transversal, vertical, driveability, suspension, wheel-road contact), mathematic solution of dynamic systems. Design features of passive, active and integrated.

vehicle dynamics (lateral, transversal, vertical, driveability, suspension, wheel-road contact), mathematic solution of dynamic systems. Design features of passive, active 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 communicative skills. Elementary stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles of rhetoric.

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

Mathematical Methods

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 current. Magnetic field. Electromagnetic field. Optics. Basics of solid-state physics.							
20ZEKT	Fundamentals of Electrical Engineering	Z,ZK	4				
Maxwell equations, e	Maxwell equations, electrotechnical quantities (electrical current, voltage, resistance, conductivity, resistivity, conductivity, power, energy), Ohm's law, Kirchhoff laws, electrical circuits						
(elements methods	ements methods DC and AC circuits accumulators photovoltaics) electric machines transmission lines reflections on transmission lines has 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 (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 Berånek Daniel Berånek	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	∠,∠K	/
Architecture and cloud	services concept, eGovernment-structure. Electronic communication and signature. IS life cycle and IT projects. Types of info	rmation systems	and specific
implementation in trar	sport. Roles, processes, management, optimization in IS. Oracle data types. SQL Developer, SQL queries. Comprehensive ex	cample and web a	pplication
programming.			
14TAMS	Telecommunications and Local Area Networks	Z,ZK	7
Summary of the curren	nt state and introduction of the new trends in the development of telecommunication systems. The legal environment for the provi	sion and use of te	ecommunication
services is explained,	basic telecommunication solutions in the hierarchical architecture of telecommunication networks are presented, and the links	between the par	ameters of the
parts and the perform	ance of telecommunication systems.		
20RIZE	Railway Traffic Management	Z,ZK	7
Historical developmen	t of security technology, external elements (switches, signals, detection means), station, track and crossing security equipmen	t, existing train se	curity equipmen
and ETCS, traffic con	rol structure, traffic control technology, automation and traffic control optimization, power supply systems, energy calculations	and train running	dynamics.
20ELKA	Qualification in Electrical Engineering	KZ	2
Practical experience v	rith measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock haza	ird, symbols and I	abeling, nomina
voltage, maximum allo	wed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legis	lation, standards	and regulations
in relation to health ar	d 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 i 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 Vit 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 - definition, benefits, ITS legislation, ITS organizations, ITS architecture and its practical use, data structures and data, geographic information systems, toll systems, e-call, fleet management, check-in and information systems, ITS connection to Smart City, ITS applications on specific examples.

20RISI Road Traffic Control Z,ZK 7

Traffic pade management, basic expected, SSZ design gritoria, SSZ production project, dynamic SSZ management, public transport professores, traffic area management, microscopic

Traffic node management - basic concepts, SSZ design criteria, SSZ production project, dynamic SSZ management, public transport preferences, traffic area management, microscopic traffic models, traffic models, traffic management on motorways, tunnel systems.

20APEL Applied Electronics

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 Minimal number of credits of the block: 6

The role of the block: ZP

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

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
16X31S	Project 1 ITS Petr Bouchner, Milan Sliacky, Michal Cenkner	Z	2	0P+1C	L	ZP
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 P ikryl Jan P ikryl Jan P ikryl (Gar.)	Z	2	0P+1C	L	ZP
23X31S	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, Milan Sliacky, Vladimír Faltus, Martin Leso, Ji í Brož	Z	2	0P+1C	L	ZP
21X31S	Project 1 ITS	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
16X32S	Project 2 ITS Milan Sliacky, Josef Mík, Michal Cenkner, Tereza Kunclová	Z	2	0P+1C	Z	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
17X32S	Project 2 ITS	Z	2	0P+1C	Z	ZP
23X32S	Project 2 ITS	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
11X33S	Project 3 ITS 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

16X33S	Project 3 ITS Milan Sliacky, Josef Mík, Michal Cenkner, Tereza Kunclová	Z	2	0P+2C	L	ZP
23X33S	Project 3 ITS	Z	2	0P+2C	L	ZP
21X33S	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
22X33S	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

trom 2022/23			
16X31S	Project 1 ITS	Z	2
15X31S	Project 1 ITS	Z	2
14X31S	Project 1 ITS	Z	2
12X31S	Project 1 ITS	Z	2
11X31S	Project 1 ITS	Z	2
23X31S	Project 1 ITS	Z	2
18X31S	Project 1 ITS	Z	2
20X31S	Project 1 ITS	Z	2
21X31S	Project 1 ITS	Z	2
22X31S	Project 1 ITS	Z	2
17X31S	Project 1 ITS	Z	2
16X32S	Project 2 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
17X32S	Project 2 ITS	Z	2
23X32S	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
11X33S	Project 3 ITS	Z	2
12X33S	Project 3 ITS	Z	2
14X33S	Project 3 ITS	Z	2
15X33S	Project 3 ITS	Z	2
16X33S	Project 3 ITS	Z	2
23X33S	Project 3 ITS	Z	2
21X33S	Project 3 ITS	Z	2
20X33S	Project 3 ITS	Z	2
18X33S	Project 3 ITS	Z	2
17X33S	Project 3 ITS	Z	2
22X33S	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-22/23

Name of the group: Comp. Sel. Courses 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
21Y1AM	Aeronautical Information Management (AIM)	KZ	2	2P+0C	Z	PV
00Y1XB	Active participation in a scientific project, workshop, short-term trip abroad	KZ	2	2P+0C		PV

20Y1AF	Patrik Horaž ovský Patrik Horaž ovský Patrik Horaž ovský (Gar.) Alternative Forms of Transportation Project Financing Mária Jánešová Mária Jánešová	KZ	2	2P+0C	Z	PV
18Y1AM	Anatomy, Mobility and Safety of Man	KZ	2	2P+0C	Z	PV
14Y1AV	Animation and Visualization	KZ	2	2P+0C	L	PV
12Y1AE	Applied Ecology Martin Jacura, Kristýna Neubergová	KZ	2	2P+0C	Z	PV
20Y1AE	Applied Electronics	KZ	2	2P+0C	Z	PV
14Y1BE	Barrierless Transport Jan Kr ál	KZ	2	2P+0C	L	PV
15Y1BO	Work Safety and Health Protection in Transportation	KZ	2	2P+0C	L	PV
11Y1BK	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 Eva Rezlerová, Martín Jacura	KZ	2	2P+0C	L	PV
12Y1DS	Project Documentation in Practice	KZ	2	2P+0C	Z	PV
17Y1EV	Public Sector Economy	KZ	2	2P+0C	Z	PV
23Y1EH	Electronics and hardware in security of transportation	KZ	2	2P+0C	L	PV
20Y1EK	Qualification in Electrical Engineering	KZ	2	2P+0C	L	PV
16Y1EN	Energy Requirements of Vehicles	KZ	2	2P+0C	L	PV
20Y1EA	Environmental Aspects of Transport	KZ	2	2P+0C	Z	PV
15Y1EH	European Integration within Historical Context	KZ	2	2P+0C	Z	PV
18Y1EM	Experimental Methods in Mechanics Daniel Kytý Daniel Kytý Daniel Kytý (Gar.)	KZ	2	2P+0C	Z	PV
15Y1FD	French Area Studies and Transportation	KZ	2	2P+0C	L	PV
14Y1HW	Computer Hardware	KZ	2	2P+0C	L	PV
15Y1HL	History of Civil Aviation Vladimír Plos	KZ	2	2P+0C	L	PV
15Y1HD	History of City Mass Transport Milan Dont	KZ	2	2P+0C	Z	PV
12Y1HD	Traffic Noise Dagmar Ko árková, Libor Ládyš	KZ	2	2P+0C	L	PV
15Y1HE	Work Hygiene and Ergonomics in Traffic Petr Musil	KZ	2	2P+0C	Z	PV
16Y1IS	Interactive simulators and simulations	KZ	2	2P+0C	L	PV
12Y1KN	Combined Transportation Petr Nejedlý	KZ	2	2P+0C	Z	PV
12Y1KP	Communication and Promotion of Transport Projects Dagmar Ko árková, Ond ej Kubala	KZ	2	2P+0C	L	PV
20Y1KP	Communication and presentation skills Ji í R ži ka, Patrik Horaž ovský, Kristýna Navrátilová, Eva Haj iarová Ji í R ži ka	KZ	2	2P+0C	Z	PV
23Y1KM	Crisis Management	KZ	2	2P+0C	Z	PV
23Y1KO	Quantum Physics and Optoelectronics	KZ	2	2P+0C	L	PV
23Y1KY	Cybernality	KZ	2	2P+0C	L	PV
23Y1KB	Cyber security in transportation	KZ	2	2P+0C	L	PV
21Y1LJ	Aeronautical Radio and Flight Instruments	KZ	2	2P+0C	L	PV
21Y1LS	Air Traffic Services	KZ	2	2P+0C	L	PV
17Y1LL	Logistics of Passenger and Freight Air Transport Petra Skolilová Petra Skolilová (Gar.)	KZ	2	2P+0C	L	PV
20Y1LN	Location and Navigation Petr Bureš	KZ	2	2P+0C	L	PV
23Y1MK	Crisis Situation Management in Critical Infrastructure	KZ	2	2P+0C	L	PV
23Y1MU	Emergency Events Management Solution in Transport Infrastructure	KZ	2	2P+0C	Z	PV
17Y1MD	Marketing in Transportation	KZ	2	2P+0C	Z	PV
18Y1MT	Engineering Materials	KZ	2	2P+0C	L	PV
21Y1MP	Jaroslav Valach Jaroslav Valach (Gar.) Matlab for project-oriented study Lenka Hanáková, Vladimír Socha Vladimír Socha	KZ	2	2P+0C	Z	PV
	Lieuka manakova, vianimir Socha vianimir Socha		1	1		I .

15Y1MK	Modern History in Context: Every Day Life and Transport	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
23Y1OK	Protection of Critical Objects and Infrastructures	KZ	2	2P+0C	L	PV
20Y1OI	Fare Collection and Information Systems Patrik Horaž ovský, Milan Sliacky Milan Sliacky (Gar.)	KZ	2	2P+0C	L	PV
14Y1OJ	Object - oriented programming in JAVA	KZ	2	2P+0C	L	PV
14Y1OP	Operating System	KZ	2	2P+0C	Z	PV
17Y1OF	Personal Finance	KZ	2	2P+0C	Z	PV
20Y1OK	Road Lighting František Kekula	KZ	2	2P+0C	L	PV
11Y1PV	Parametrical and Multicriterial Programming Olga Vraštilová Olga Vraštilová (Gar.)	KZ	2	2P+0C	Z	PV
17Y1PM	Personnel Management	KZ	2	2P+0C	L	PV
12Y1PC	Pedestrian and Cycling Transport Denis Liutov	KZ	2	2P+0C	L	PV
14Y1PG	Computer Graphics	KZ	2	2P+0C	L	PV
14Y1P2	Computer Aid of Transportation Projecting 2	KZ	2	2P+0C	Z	PV
18Y1PS	Computer Simulations in Mechanics Petr Zlámal Petr Zlámal (Gar.)	KZ	2	2P+0C	L	PV
14Y1PI	Corporate Information System	KZ	2	2P+0C	Z	PV
14Y1PZ	Advanced Data Processing in Spreadsheets	KZ	2	2P+0C	Z	PV
21Y1PC	ATC Procedures and Activities Terézia Plimannová Terézia Plimannová	KZ	2	2P+0C	Z	PV
12Y1PD	Assessment of Transport Structures	KZ	2	2P+0C	Z	PV
20Y1PK	Product Quality Management Processes Martin Leso Martin Leso	KZ	2	2P+0C	Z	PV
14Y1PJ	C Programming Language	KZ	2	2P+0C	Z	PV
12Y1C1	Designing Roads in Civil 3D I	KZ	2	2P+0C	L	PV
12Y1C2	Designing Roads in Civil 3D II	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
21Y1PL	Operational Aspects of Aerodromes	KZ	2	2P+0C	L	PV
21Y1PA	Air Traffic Control Operating Procedures Terézia Pilmannová	KZ	2	2P+0C	Z	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
21Y1TH	Aircraft Technical Handling Peter Olexa	KZ	2	2P+0C	Z	PV
11Y1TG	Graph Theory Lucie Kárná Lucie Kárná (Gar.)	KZ	2	2P+0C	L	PV
23Y1TP	Criminal Law in IT and Transportation	KZ	2	2P+0C	Z	PV
14Y1TI	Creating Interactive Internet Applications	KZ	2	2P+0C	L	PV

21Y1UL	Aircraft Maintenance Tomáš T ma	KZ	2	2P+0C	L	PV
14Y1UP	Editing of Theses in MS Word	KZ	2	2P+0C	L	PV
18Y1UK	Introduction of Rail Vehicles Jitka ezní ková, Josef Kolá, Josef Kolá Josef Kolá (Gar.)	KZ	2	2P+0C	L	PV
12Y1VR	Public Transport in Cities and Regions Vladimír Pušman	KZ	2	2P+0C	Z	PV
23Y1VS	Negotiation and Cooperation	KZ	2	2P+0C	Z	PV
14Y1VM	Development of Applications for Mobile Devices	KZ	2	2P+0C	Z	PV
16Y1VT	Development in Railroad Vehicles	KZ	2	2P+0C	L	PV
14Y1WG	Webdesign	KZ	2	2P+0C	Z	PV
14Y1W1	Webdesign 1	KZ	2	2P+0C	Z	PV
14Y1W2	Webdesign 2	KZ	2	2P+0C	L	PV
16Y1ZG	Introduction into Applied Computer Graphics	KZ	2	2P+0C	L	PV
14Y1ZM	Fundamentals of parametric and adaptive modeling	KZ	2	2P+0C	L	PV
11Y1ZM	Foundation of MATLAB Programming Šárka Vorá ová Šárka Vorá ová Sárka Vorá ová (Gar.)	KZ	2	2P+0C	L	PV
14Y1ZJ	Fundamentals of programming in JAVA	KZ	2	2P+0C	Z	PV
12Y1ZU	Principles of Urbanism Karel Hájek	KZ	2	2P+0C	Z	PV
15Y1ZV	East-West dichotomy: Prelude to the Cold War Marie Michlová	KZ	2	2P+0C	Z	PV
16Y1ZL	Vehicle Testing, Legislation and Construction Zuzana Radová, Josef Mík	KZ	2	2P+0C	Z	PV

Characteristics of the courses of this group of Study Plan: Code=Y1-BP-ITS-22/23 Name=Comp. Sel. Courses Bachelor Full-Time TET-ITS from 2022/23

21Y1AM	Aeronautical Information Management (AIM)	KZ	2
	erview of AIS and AIM. Transition from AIS to AIM. Regulatory base. Provision of AIS/AIM in the Czech Rep. AIP (Aeronautic	1	
	System. NOTAM messages.PIB (Pre-flight Informtion Bulletin). AIC (Aeoronautical Inf. Circulars). Aeronautical Charts. EAD		
<u>-</u>	ADQ (Aeronautical Data Quality). AIXM (Aeronautical Inf. Exchnage Format).	(Europona / no Bat	ababb). Givio
00Y1XB	Active participation in a scientific project, workshop, short-term trip abroad	KZ	2
20Y1AF	Alternative Forms of Transportation Project Financing	KZ	2
	forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt	1	-
•	direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of		•
	lecomunication projects.	securilles as air air	terriative source
18Y1AM	Anatomy, Mobility and Safety of Man	KZ	2
-	Arratorriy, Mobility and Salety of Mari omical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circula	1 1	
-	uscular-skeletal system. Injury of human organs and musculo-skeletal system during traffic accidents. Mobility of ill and inju	-	
	tive means and traffic safety regulations.	led man and ms tre	atment. Human
14Y1AV	Animation and Visualization	KZ	2
	s and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and	1 1	_
	ering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animati		•
12Y1AE	Applied Ecology	KZ	2
	рарыеч Союду Ogical concepts and principles, ecosystem, ecological factors, energy flow through the ecosystem. Application of knowledge	1 1	
	plogy - origin and historical development. Landscape definition and classification. Success. Traffic constructions in the count		-
protection. Applied eco	• •	yside. Landscape a	and nature
20Y1AE	Applied Electronics	KZ	2
-	nductor components, their principles, characteristics and typical connection diagrams. Semiconductor PN junction diodes, t	1	_
	ates. Functions of basic electronic circuits and methods for their designs (rectifiers, voltage regulator with Zener diode, trans		•
	g and noninverting amplifier).	sistor as an ampline	i, operational
14Y1BE	Barrierless Transport	KZ	2
	accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Stud		-
	ent roads, railway stations, public transport stops, terminal buildings, vehicles, public transport, information and orientation sys	•	
	will be supplemented by practical examples.	ionio ana nanoponio	
15Y1BO	Work Safety and Health Protection in Transportation	KZ	2
-	e, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation	1 1	_
-	ne and foreign business trips, statistics, working practice.	ni. Hould protoction	r programmoo,
11Y1BK	Error Detection Codes for Interlocking Systems	KZ	2
	d methods for its assuring. Safety codes linear codes, cyclic codes, BCH codes, Reed-Solomon codes. Transmission channe	1 1	-
	d error. Design and assessment of detection codes; requirements of the European standard EN 50159.	no, dottodion or train	ornicolori orrore
21Y1BS	Unmanned aircraft systems 1	KZ	2
_	Offinal fred afficialt systems i velopment. Aircraft design. Legislation in force in the Czech Republic. Planning and execution of the flight. Airspace division.	1	_
procedures. Practical fl		Operational risks a	ana operational
14Y1BM	Biometric Methods	KZ	2
		1	-
	authentication methods, principles and performance measurement of biometric systems, overview of biometric technologies od, 2D and 3D face recognition, vein patterns on the wrist, ear biometrics, fingerprint recognition, skin spectroscopy, behavi		
	od, 2D and 3D face recognition, verifications on the wrist, ear biometrics, lingerprint recognition, skin spectroscopy, behavi s, safety and risks of biometric technologies.	orar memous, me u	se of biolitetic
iii iiaiispoit appiidalloll	s, salety and note on biometric technicologies.		

15Y1DZ History of Railway		KZ	2
Horse-drawn railways, steam railways, railway network development in the 2nd half of 19th century, regional railways epoc			
War II railways, railway development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, importa railway accidents, railway junctions. Excursions and projections.	niciong-distance train connection	iis, iaiiway iii	ies construction,
12Y1DS Project Documentation in Practice		KZ	2
Project documentation creating. Project documentation types. Support materials for project documentation creating. Buildi	ng permit obtaining process. Bu	udget 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 tax system of the CR, state budget, management of public projects a their economic efficiency assessment, way of elaborat			·
23Y1EH Electronics and hardware in security of transportation	projects, runding from	KZ	2
Types and parameters of signals. Passive circuits, properties, basic measurements. Passive filters, semiconductors. Opera	ational amplifiers, basic circuits,		
Power supplies. Logic circuits. AD converters. Connection of analog and digital parts. Basic blocks of digital signal processing	g. Measurement processing. De	sign and fab	rication methods
in electronics.			
20Y1EK Qualification in Electrical Engineering	oltogo ologtrio obogly bozord o	KZ	2
Practical experience with measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, maximum allowed currents, electrical equipment protection against short circuit and overload protection, control a	-		-
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		Combustion e	engine, electric
drive, steam engine, air engine. Energy accumulation means, accumulator, flywheel, fuel cell. Energy recuperation. WTW	analysis.	1/7	0
20Y1EA Environmental Aspects of Transport State of the atmosphere, weather observation network, weather in transportation, road meteorology. Weather forecasting,	data assimilation, probabilistic fo	KZ	2 ecast evaluation
Air quality, main pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a	•		
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. Fast	cism, nacism, communism. Little	e Entente, its	s principles and
goals. Europe after Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers	during WWII. Cold war and its o	consequence	s for Europe.
New quality of French-German relationship - a driving power of starting European integration. 18Y1EM Experimental Methods in Mechanics		KZ	2
18Y1EM Experimental Methods in Mechanics The purpose and role of experimental mechanics. Sensors for mechanical testing. Overview of experimental methods. De-	tructive and non-destructive te		
experimental procedures and sample preparation. Tensile and bending tests. Electrical resistance strain gages. Optical ba		-	_
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 French society and culture. Current political system. System of education, studying in France. Selected authors of French		specialised t	erminology.
	literature. French gastronomy.	K7	2
14Y1HW Computer Hardware Computer architecture, basics of logical circuits design and their realization using FPGA. In detail, description of computer		KZ s designing	2 - controllers,
14Y1HW Computer Hardware Computer architecture, basics of logical circuits design and their realization using FPGA. In detail, description of computer arithmetic and logical units, I/O subsystem.			
14Y1HW Computer Hardware Computer architecture, basics of logical circuits design and their realization using FPGA. In detail, description of computer arithmetic and logical units, I/O subsystem. 15Y1HL History of Civil Aviation	r architecture and separate part	ks designing -	- controllers,
14Y1HW Computer Hardware Computer architecture, basics of logical circuits design and their realization using FPGA. In detail, description of computer arithmetic and logical units, I/O subsystem. 15Y1HL History of Civil Aviation Beginnings of flying, development of aircrafts lighter than air. Beginnings of aircrafts heavier than air. Czechoslovak aviation	r architecture and separate part	KZ ports in the 0	controllers, 2 Czech Republic.
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23Y1KY			
-	Cybernality lavior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism	KZ	2
23Y1KB	Cyber security in transportation	KZ	2
_	rity and cyber security, legal status in the field of cyber security, virtual cyberspace and communities, taxonomy of crimes in a	I	_
engineering, cyber atta	ck technology, information security, cyber attacks on telematics systems, security of systems with artificial intelligence, normation	s and standards.	
21Y1LJ	Aeronautical Radio and Flight Instruments	KZ	2
	y of aircraft instrumentation, aerometric instrumentation, Earth magnetism, aircraft electric equipment, gyroscopic instrumentation are instrumentation, are represented by the control of the communication of the control of the communication		
21Y1LS	it, engine instrumentation, warning and recording systems, instrumentation operational requirements, radiocommunication ar Air Traffic Services	KZ	2
	zech Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR,	1	l
· ·	vakia. ATS - Model of financing. Training System of Air Traffic Controllers. Future development of ATS.		
17Y1LL	Logistics of Passenger and Freight Air Transport	KZ	2
	nger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial	transport process	passengers and
20Y1LN	ystems in air transport. Global distribution systems. Location and Navigation	KZ	2
	Location and Navigation les of road networks, localization on the network. Routing algorithms, their properties and implementation. Description and e	1	l .
	routing algorithms, their properties and implementation.		
23Y1MK	Crisis Situation Management in Critical Infrastructure	KZ	2
	I infrastructute elements on all levels, their protection systems, responsibilities of particular agencies of the state administrati	_	overnment, and
-	anounce particular safety provisions. Physical and cyber protection of critical infrastructure with special attention to the soft to		
23Y1MU	Emergency Events Management Solution in Transport Infrastructure	KZ	2
	gency events with emphasis of the transport infrastructure events and their solution management. Knowledge in the emergenc in the transport infrastructure.	y pianining and Sp	eciai procedures
17Y1MD	Marketing in Transportation	KZ	2
	arketing applied to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transport	l .	-
the application of mark	eting.		
18Y1MT	Engineering Materials	KZ	2
-	main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers	=	attention is paid
	and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's selection		
21Y1MP	Matlab for project-oriented study	KZ	2
1	is focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exerci ased on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improven		_
14Y1MP	Modeling Complex Assemblies and Models in Parametric Modeller	KZ	2
	Wedeling Complex / leachibiles and Wedelio in Farametric Wedelion	1 1 1	_
	ng - tools and methodology of working subassemblies and assemblies, sheet metal parts modelling, welded assemblies, pipe	elines, and distribu	ution lines.
Assemblies programmi	ng - tools and methodology of working subassemblies and assemblies, sheet metal parts modelling, welded assemblies, pipe endering - physical and material properties, lighting sources. MKP - visual example.	elines, and distrib	ution lines.
Assemblies programmi		elines, and distrib	ution lines.
Assemblies programmi Photorealistic output re 15Y1MK Historical overview of n	Indering - physical and material properties, lighting sources. MKP - visual example. Modern History in Context: Every Day Life and Transport modern history of every day life, science, technology and transport in a wider context.	KZ	2
Assemblies programmi Photorealistic output re 15Y1MK Historical overview of n 15Y1NE	Indering - physical and material properties, lighting sources. MKP - visual example. Modern History in Context: Every Day Life and Transport nodern history of every day life, science, technology and transport in a wider context. German in the Economy and Society	KZ KZ	2
Assemblies programmi Photorealistic output re 15Y1MK Historical overview of n 15Y1NE Recent economic and s	Indering - physical and material properties, lighting sources. MKP - visual example. Modern History in Context: Every Day Life and Transport modern history of every day life, science, technology and transport in a wider context.	KZ KZ	2
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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		
for cyclists. Separation of cyclists from other transport modes. Cycle tracks and its design - one way streets, reserved traffic lanes, bus stops, crossi crossroads. Traffic signs and road marking for cyclists.	ngs with other tran	isport modes,
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	1	
level scope) using layers, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics cards.	aning programo (w	111111111111111111111111111111111111111
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 tran		
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 develop	· · · · · · · · · · · · · · · · · · ·	
from other CAE systems. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary conditions	and application o	f the load. Basic
tasks of structural and modal analysis. Introduction to complex nonlinear problems.	147	
14Y1PI Corporate Information System	KZ	2
Data-information-knowledge, components of information system, syntatic and semantic sense of data, structure of corporate information system, particle (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.	in or information of	operation,
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	1	
addressing, error detection. Working with large spreadsheets, filters, advanced filters, database functions. Pivot tables and charts, conditional formatting		=
data analysis. Examples and questions from various companies and training.		
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 course	se discusses air tra	affic control at
the airports and low visibility operational procedures. Students will during the course learn basic safety management applications applied across the	e infrastructure.	
12Y1PD Assessment of Transport Structures	KZ	2
Assessment of transport structures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibiliti	=	
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. Draduct Quality Management Processes	1/7	
20Y1PK Product Quality Management Processes Constraint principles of cranging tion management. Management systems and interactional standards; quality management systems. Quality products.	KZ	2
General principles of organization management. Management systems and international standards; quality management systems. Quality products, of standards for systems management, management principles. Principles of process management, monitoring and measurement systems management.		
for systems management. Process management principles. Metrology and testing. Product certification.	int. Offilorin framew	ork or standards
14Y1PJ C Programming Language	KZ	2
C programming language. Preprocessor, basics of the C language (data types, syntax, commands), functions, pointes, dynamical memory allocation,	1	
	Strilla, illes, stract	
Implementations of abstract data types (FIFO, LIFO, list), programming techniques (sorting, searching, recursion), using bitwise oprerators.	stillig, files, struct	ares and amons.
	KZ	2
Implementations of abstract data types (FIFO, LIFO, list), programming techniques (sorting, searching, recursion), using bitwise oprerators.	KZ	2
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17Y1ST Tit	an Simulation	KZ	2
	ne simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same produ		-
	capacity of production, plan budgets for marketing, research and development. They become familiar with the consequer	nces of their decis	ions by the form
	s and they use this information for other business decisions.	V7	2
	C Simulator Dation environment, acquiring basic habits, aircraft identification procedures, vectoring, level changes, ATC clearance, us	KZ	2 Practical
	vectoring, early application of vertical separation, EST and REV message passing. Practical exercises in the APPROAC	•	
departure management pro-		n raica, practicing	anival and
	ensors and Actuators	KZ	2
	tuators. Basics of measuring theory and actuating influence. The respective technologies and construction principles. Sensor	1 1	
•	r), chemical and particle flow values. Electrical, pneumatic and hydraulic actuators and solid phase elements.		
17Y1SL Sc	ociology of Human Resources	KZ	2
Human resources and their i	importance, work group as a special kind of social group, communication, personal management, modern management, h	human resources i	planning, culture
of the organization.			
11Y1SI Tra	ansportation Software Engineering	KZ	2
<u>-</u>	engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and imple	mentation using fo	ormal techniques
and practical usuage.			
	uality and Reliability of Vehicles	KZ	2
	in design, development, production and operation of vehicles. Definition and possible approach to quality and reliability.		•
	, QFD (Quality Function Deployment), DFx (Design for Assamly, Manufacturying, Quality, Services) and other methods of quality and reliability, data collection.	s used in industria	ii applications.
	pad Management and Maintenance	KZ	2
1	hip of roads in the Czech Republic and the administration of the road at the state and county level. It is presented develo	1	_
-	egy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and re	•	
· ·	ment activity in highway engineering.		
	rategy and innovation in mobility	KZ	2
	efinition. Innovation strategy. Innovation life cycle and ecosystem, main sources and funding opportunities. Successful in	1	_
	rint method and its use. Innovative business model - main patterns and examples, design, strategy, processes and outloo		_
of use). Creating an innovati	ion strategy. Customer and value map, design and testing.		
17Y1SK Ur	ban and Regional Rail Transport Systems	KZ	2
Factors affecting transport d	demand, modal-split, distribution of passenger flows on public regional transport lines. Optimization of line management,	line networking. C	reating and
evaluation of the timetable.	Vehicle circulation creation. Optimizing driver shifts and arranging them in turnus. Effects of barrier-free and public transp	ort preferences. T	he role of
marketing.			
	rcraft Technical Handling	KZ	2
Aircraft towing and pushing	tractors. GPU. Air conditioning and heating units. Aircraft fuel equipment. De-acing and anti-icing units. Loading and unlo	and the second teaching the second	
			ment for
	offboarding. Operational processes of aircraft technical handling and regulations. Modernization and technical progress	i.	
11Y1TG Gr	offboarding. Operational processes of aircraft technical handling and regulations. Modernization and technical progress raph Theory	KZ	2
11Y1TG Gr Basic concepts and termino	d offboarding. Operational processes of aircraft technical handling and regulations. Modernization and technical progress raph Theory logy of graph theory, graph representation. Problems of graph theory, problem instance. Graph search algorithms, trees,	KZ	2 ng tree, shortest
11Y1TG Gr Basic concepts and termino path problem, Eulerian path,	d offboarding. Operational processes of aircraft technical handling and regulations. Modernization and technical progress raph Theory logy of graph theory, graph representation. Problems of graph theory, problem instance. Graph search algorithms, trees, bipartite graph matching, flow networks, circulations, critical path method, traveling salesman problem. Problem of existence	KZ	2 ng tree, shortest
11Y1TG Gr Basic concepts and termino path problem, Eulerian path, for their solving. Computation	d offboarding. Operational processes of aircraft technical handling and regulations. Modernization and technical progress raph Theory logy of graph theory, graph representation. Problems of graph theory, problem instance. Graph search algorithms, trees, bipartite graph matching, flow networks, circulations, critical path method, traveling salesman problem. Problem of existent complexity, dealing with NP-complete problems, heuristic approach.	KZ minimum spannir ce and optimizatio	2 ng tree, shortest n and algorithms
11Y1TG Gr Basic concepts and termino path problem, Eulerian path, for their solving. Computatio 23Y1TP Cr	d offboarding. Operational processes of aircraft technical handling and regulations. Modernization and technical progress raph Theory alogy of graph theory, graph representation. Problems of graph theory, problem instance. Graph search algorithms, trees, bipartite graph matching, flow networks, circulations, critical path method, traveling salesman problem. Problem of existent complexity, dealing with NP-complete problems, heuristic approach.	KZ minimum spannir ce and optimizatio	2 ng tree, shortest n and algorithms
11Y1TG Gr Basic concepts and termino path problem, Eulerian path, for their solving. Computatio 23Y1TP Cr Introduction of criminal law i	d offboarding. Operational processes of aircraft technical handling and regulations. Modernization and technical progress raph Theory logy of graph theory, graph representation. Problems of graph theory, problem instance. Graph search algorithms, trees, bipartite graph matching, flow networks, circulations, critical path method, traveling salesman problem. Problem of existent complexity, dealing with NP-complete problems, heuristic approach. Iminal Law in IT and Transportation into legal order, conception of culpability and criminal delict, consequency of other legal standards. international treaty and property of the legal standards.	KZ minimum spannir ce and optimizatio	2 ng tree, shortest n and algorithms
11Y1TG Gr Basic concepts and termino path problem, Eulerian path, for their solving. Computatio 23Y1TP Cr Introduction of criminal law i crime, specific indicia of crin	d offboarding. Operational processes of aircraft technical handling and regulations. Modernization and technical progress raph Theory logy of graph theory, graph representation. Problems of graph theory, problem instance. Graph search algorithms, trees, bipartite graph matching, flow networks, circulations, critical path method, traveling salesman problem. Problem of existent and complexity, dealing with NP-complete problems, heuristic approach. Timinal Law in IT and Transportation into legal order, conception of culpability and criminal delict, consequency of other legal standards. international treaty arminal court cases, practical examples.	KZ minimum spannir ce and optimization KZ nd criminal law, in	2 ng tree, shortest n and algorithms 2 vestigation of
11Y1TG Gr Basic concepts and termino path problem, Eulerian path, for their solving. Computatio 23Y1TP Cr Introduction of criminal law i crime, specific indicia of crin 14Y1TI Cr	d offboarding. Operational processes of aircraft technical handling and regulations. Modernization and technical progress raph Theory logy of graph theory, graph representation. Problems of graph theory, problem instance. Graph search algorithms, trees, bipartite graph matching, flow networks, circulations, critical path method, traveling salesman problem. Problem of existent and complexity, dealing with NP-complete problems, heuristic approach. Timinal Law in IT and Transportation into legal order, conception of culpability and criminal delict, consequency of other legal standards. international treaty arminal court cases, practical examples. Teating Interactive Internet Applications	KZ minimum spannir ce and optimization KZ nd criminal law, in	2 ng tree, shortest n and algorithms 2 vestigation of
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11Y1TG Gr Basic concepts and termino path problem, Eulerian path, for their solving. Computatio 23Y1TP Cr Introduction of criminal law is crime, specific indicia of crim 14Y1TI Cr Possibilities of scripting lang in PHP language. 21Y1UL Air. Air. Air. Air. Air. Air. Air. Air.	and from the composition of the consequency of the regulations. Modernization and technical progress raph Theory I logy of graph theory, graph representation. Problems of graph theory, problem instance. Graph search algorithms, trees, in partition of graph matching, flow networks, circulations, critical path method, traveling salesman problem. Problem of existent and complexity, dealing with NP-complete problems, heuristic approach. I minial Law in IT and Transportation Into legal order, conception of culpability and criminal delict, consequency of other legal standards, international treaty an initial court cases, practical examples. The cating Interactive Internet Applications grape PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions. The creating Interactive Internet Applications grape PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions. The creating Interactive Internet Application. The continuation of time maintenance intervals. Regulation no. 1321/2014 Part 145. Human factors of aircraft maines. Seminars will be focused on practical application. The principles of creating and editing large documents and basic typographic rules. They will properly apply styles, cree-footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless centrate mainly on writing a thesis. The control of Rail Vehicles are a seamles of transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion are gresistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehicle concept rail vehicles and drive of wheel set. The influence of personality traits on the negotiations. Negotiation and commanding. Teamwork. Variants teams. Inforce easence of negotiation, the differences in negotiation in business and in crisis situations, the principle of "win both	minimum spannir ce and optimization of and criminal law, inverse and c	2 ng tree, shortest n and algorithms 2 vestigation of 2 ion programmed 2 iation personnel. tion of director 2 ents, lists of ions and theses, 2 ns. Rolling and c, hydrodynamic 2 line tracing. traffic control. 2 ole in the team. dding, the role of
11Y1TG Gr Basic concepts and termino path problem, Eulerian path, for their solving. Computatio 23Y1TP Cr Introduction of criminal law is crime, specific indicia of crim 14Y1TI Cr Possibilities of scripting lang in PHP language. 21Y1UL Air. Air. Air. Air. Air. Air. Air. Air.	aph Theory logy of graph theory, graph representation. Problems of graph theory, problem instance. Graph search algorithms, trees, bipartite graph matching, flow networks, circulations, critical path method, traveling salesman problem. Problem of existent and complexity, dealing with NP-complete problems, heuristic approach. Iminal Law in IT and Transportation into legal order, conception of culpability and criminal delict, consequency of other legal standards, international treaty at minal court cases, practical examples. Image PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions. International court cases, practical examples. International treaty and functions puage PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions. International demonstration of time maintenance intervals. Regulation no. 1321/2014 Part 145. Human factors of aircraft maintenance. Optimization of time maintenance intervals. Regulation no. 1321/2014 Part 145. Human factors of aircraft maintenance will be focused on practical application. Iting of Theses in MS Word Into the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, crefootnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless rentrate mainty on writing a thesis. Introduction of Rail Vehicles International registrance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehicles are alternations. Types of lines according to their routing and basic operating parameters. Time coordination of I and transport variations. Types of lines according to their routing and basic operating parameters. Time coordination of I and transport variations. Types of lines according to their routing and basic operating parameters. Time coordination of I and transport variations, the differences in negotia	minimum spannir ce and optimization of and criminal law, inverse and c	2 ng tree, shortest n and algorithms 2 vestigation of 2 ion programmed 2 iation personnel. tion of director 2 ents, lists of ions and theses, 2 ns. Rolling and c, hydrodynamic 2 line tracing. traffic control. 2 ole in the team. dding, the role of
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14Y1WG Webdesign Students will learn the basics of HTTP communication, URL and addressing, HTML5 markup language, advanced CSS3 techniques, accessible and usable web rules, responsive webdesign, content management systems, web server installation + configuration directives. The subject matter will be trained on examples. 14Y1W1 2 Webdesian 1 ΚZ Students will learn the basics of communication HTTP, URL and addressing, markup languages HTML and XHTML, HTML tags, rules of web accessibility and usability, CSS properties and selectors, the issue of web browsers, creating one to three column layout pages, sites validation, conditional comments. Topics will be practiced on practical examples Students will learn advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, web server installation + configuration directives. Topics will be practiced on practical examples. Introduction into Applied Computer Graphics Computer graphics, division and applications with emphasis on transport, including development and research. Colours, colour perception, colour schemes, models, principles of 2D and 3D generation, elementary algorithms for graphic data workout. Visualisation principles and tasks, technics, graphics and visualisation HW basics. Introduction to 2D and 3D graphics software. 14Y1ZM Fundamentals of parametric and adaptive modeling Basics of work at products and parts creation. Sketch drawing by help of geometric relations, parametric dimensions, creation of adaptive models from 2D sketches. Import and export from and to another systems. Fundamentals of assemblies creation. 11Y1ZM Foundation of MATLAB Programming ΚZ 2 To explain the principle of algorithmization, flow charts, description of MATLAB environment and its settings, MATLAB help, mathematical operators, matrices and elements operations, control flow, inputs and outputs, graphics, optimization and program code debugging Fundamentals of programming in JAVA Introduction to the Java SE Platform. IDE Installation and First Project. Comments. Variables and Type System. Operators. User Input and Parsing. Chain and Chain Conversion. Text Chain and Mathematical Methods. Terms. Relational Operators and Switches. Cycles for, while, foreach. Field - declaration, initialization, methods for field work. ASCII. Functions, parameters, return value, recursion. Program creation. Principles of Urbanism Survey on history of city and settlement building. Functional components and their mutual relations (working, living, recreation, transportation). Spacial arrangement of settlements. Types of towns or cities with a certain prevailing function, forms of their development. Brief overview of land-use planning. East-West dichotomy: Prelude to the Cold War 15Y1ZV ΚZ 2 Historical prologue, evolution of the "West" and "East" from the 1500s. Focus on the history in the period between 1850 nad 1950. Milestones and continuity of the international relations in the end of 19th century and the beginning of the 20th century. Revolutions, the causes and consequences. Scientific and technological progress, the causes and consequences. Economic and financial history. Social changes. Discussions on texts, sources Vehicle Testing, Legislation and Construction ΚZ Vehicle, bus and motorbike costruction, aggregate computing, driving resistance, build and parameters of traction, constructional arrangement of personal cars, trucks, buses, motorbikes, legislation in the EU and in the world, technical legislation creation, testing methods, vehicle tests, accelerated tests, mathematical modelling in testing

Name of the block: Elective courses 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 ເ	group:					
Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
14DPK	Digital Support for Designing of Roads and Highways Libor Žídek, Drahomír Schmidt Drahomír Schmidt Drahomír Schmidt (Gar.)	Z	0	0P+2C	Z	V
14DZT	Digital Support for Railway Lines Martin Brumovský Martin Brumovský (Gar.)	Z	0	0P+2C	L	V
11SCFZ	Seminar of Physics Old ich Hykš, Jana Kuklová, Zuzana Malá, Tomáš Vít Zuzana Malá Zuzana Malá (Gar.)	Z	0	0P+2C	Z	V
21SLD	Seminar of Air Transport 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

AADDIK	D: 110	7	
14DPK	Digital Support for Designing of Roads and Highways		0
	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.		
11SCFZ	Seminar of Physics	Z	0
Solving problems on ki	nematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermodynamics.	·	•
21SLD	Seminar of Air Transport	Z	0
performance. Flight pla	minology, basic rules. VFR / IFR. Basics of aerodynamics. Propulsion of aircraft. Aircraft design. Basics of navigation, radio r Inning, optimization of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic les and economics. Space technologies.	-	
18SPP	Seminary from Elasticity and Strength	Z	0
Excersise for practice.	Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of	beam. Analysis of	deflection curve
of beam. Torsion of circ	cle cross section. Combined loading. Stability of compressed bar and buckling.		
18STD	Seminary from Technical Documentation	Z	0
Technical standards, in	ternational standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensi	onal and geometric	al accuracy,
arrangement of drawin	g sheets.		
18SS	Seminary from Structural Analysis	Z	0
Examples for practise.	General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate bear	n and simple frame	work. Application
of principle of virtual w	orks for calculation of reactions of staticaly determinate systems. Determination of axial forces in truss construction - metho	d of joints and meth	nod of sections.
Geometry of cross sec	tions. Plane fiber polygons.		
	Secondary School Physics Course	Z	0
11SSF			0
	lynamics, thermodynamics, electric field and magnetic field.		
			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

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

11SEMO	Seminar of Electromagnetic Field and Optics	Z	0
Solving problems on el	ectric and magnetic field, electromagnetic field, optics and basics of solid-state physics.		

Name of the block: Jazyky

Minimal number of credits of the block: 6

The role of the block: J

Code of the group: JZ-BP-TET-22/23

Name of the group: Bachelor TET (ex LED) 2nd Language Courses 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 2 courses

Credits in the group: 6 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
15JZ3F	Foreign Language - French 3 Irena Veselková	Z	3	0P+4C+10B	Z	J
15JZ3I	Foreign Language - Italian 3 Irena Veselková	Z	3	0P+4C+10B	Z	J
15JZ3N	Foreign Language - German 3 Eva Rezlerová, Jana Štikarová, Martina Navrátilová	Z	3	0P+4C+10B	Z	J
15JZ3R	Foreign Language - Russian 3 Marie Michlová	Z	3	0P+4C+10B	Z	J
15JZ3S	Foreign Language - Spanish 3 Nina Hricsina Puškinová	Z	3	0P+4C+10B	Z	J

15JZ4F	Foreign Language - French 4 Irena Veselková	Z,ZK	3	0P+4C+10B	L	J
15JZ4I	Foreign Language - Italian 4	Z,ZK	3	0P+4C+10B	L	J
15JZ4N	Foreign Language - German 4 Eva Rezlerová, Jana Štikarová, Martina Navrátilová	Z,ZK	3	0P+4C+10B	L	J
15JZ4R	Foreign Language - Russian 4 Marie Michlová	Z,ZK	3	0P+4C+10B	L	J
15JZ4S	Foreign Language - Spanish 4 Zuzana Krinkova	Z,ZK	3	0P+4C+10B	L	J

Characteristics of the courses of this group of Study Plan: Code=JZ-BP-TET-22/23 Name=Bachelor TET (ex LED) 2nd Language Courses from 2022/23

	Foreign Language - French 3	Z	3
Grammar and stylistic	s. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement	of language struct	ure knowledge
and perceptive and co	mmunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Wo	ork with (profession	al) text and its
eatures. Practice of or	ral and written presentation.		
I5JZ3I	Foreign Language - Italian 3	Z	3
Grammar and stylistic	s. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement	of language struct	ure knowledge
and perceptive and co	mmunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. We	ork with (profession	al) text and its
eatures. Practice of or	ral and written presentation.		
I5JZ3N	Foreign Language - German 3	Z	3
Grammar and stylistic	s. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement	of language struct	ure knowledge
and perceptive and co	mmunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. We	ork with (profession	nal) text and its
eatures. Practice of or	al and written presentation.		
I5JZ3R	Foreign Language - Russian 3	Z	3
3rammar and stylistic	s. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement	of language struct	ure knowledge
and perceptive and co	mmunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. We	ork with (profession	nal) text and its
eatures. Practice of or	al and written presentation.		
5JZ3S	Foreign Language - Spanish 3	Z	3
Grammar and stylistic	s. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement	of language struct	ure knowledge
and perceptive and co	mmunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. We	ork with (profession	nal) text and its
eatures. Practice of or	al and written presentation.		
5JZ4F	Foreign Language - French 4	Z,ZK	3
Grammar and stylistic	s. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement	of language struct	ure knowledge
nd perceptive and co	mmunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. We	ork with (profession	10 4 4 1 1 14
		(4.0.000	iai) text and its
	ral and written presentation.		,
15JZ4I	Foreign Language - Italian 4	Z,ZK	3
5JZ4I Grammar and stylistic	Foreign Language - Italian 4 s. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement	Z,ZK of language struct	3 ure knowledge
5JZ4I Grammar and stylistics and perceptive and co	Foreign Language - Italian 4 s. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement mmunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. We	Z,ZK of language struct	3 ure knowledge
5JZ4I Grammar and stylistics and perceptive and co eatures. Practice of or	Foreign Language - Italian 4 s. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement mmunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. We ral and written presentation.	Z,ZK of language struct	3 ure knowledge nal) text and its
5JZ4I Grammar and stylistics and perceptive and co eatures. Practice of or 5JZ4N	Foreign Language - Italian 4 s. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement mmunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. We ral and written presentation. Foreign Language - German 4	Z,ZK of language struct ork with (profession	3 ure knowledge nal) text and its
5JZ4I Grammar and stylistics and perceptive and co eatures. Practice of or 5JZ4N Grammar and stylistics	Foreign Language - Italian 4 s. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement mmunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. We ral and written presentation. Foreign Language - German 4 s. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement	Z,ZK of language struct ork with (profession Z,ZK of language struct	3 ure knowledge nal) text and its 3 ure knowledge
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5JZ4I Grammar and stylistics and perceptive and co eatures. Practice of or 5JZ4N Grammar and stylistics and perceptive and co eatures. Practice of or	Foreign Language - Italian 4 s. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement mmunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. We ral and written presentation. Foreign Language - German 4 s. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement mmunicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. We ral and written presentation.	Z,ZK of language struct ork with (profession Z,ZK of language struct ork with (profession	3 ure knowledge nal) text and its 3 ure knowledge nal) text and its
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List of courses of this pass:

and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its

features. Practice of oral and written presentation.

Code	Name of the course	Completion	Credits
00Y1XB	Active participation in a scientific project, workshop, short-term trip abroad	KZ	2
11CAL1	Calculus 1	Z,ZK	7
Sequence of real	numbers and its limit. Basic properties of mappings. Function of one real variable, its limit and derivative. Indefinite integral, Newton integ	ral, Riemann integr	al, improper
	Riemann integral. First-order differential equations, linear differential equations.		
11CAL2	Calculus 2	Z,ZK	5
Line	ar differential equations and their systems, differential calculus of functions of several real variables. Riemann integral in Rn. Line and	surface integrals.	
11EMO	Electromagnetic Field and Optics	Z,ZK	4
	Electric field. Electric current. Magnetic field. Electromagnetic field. Optics. Basics of solid-state physics.		
11FYZ	Physics	Z,ZK	5
	Kinematics, dynamics, Newton's laws, force fields, mechanics of continuum, thermodynamics, introduction to electrostatics and elec	tric current.	

11GIE	Geometry	KZ	3
	etry of curves - parameterization, the arc of the curve, torsion and curvature, Frenet`s trihedron. Kinematics - a curve as a trajectory of acceleration of a particle moving on a curved path.	f the motion, the ve	elocity, and
11LA		Z,ZK	3
	Linear Algebra ear combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and thei		_
vector spaces (iiiie	their applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classificati		minarits and
11MAMY	Mathematical Methods	Z,ZK	7
	deling. The system and its mathematical description. Types of signals. Basic system responses. Convolution. State models. Principle of		
state description. I	Data measurement. Uncertainty in measured data. Data normalization. Preparation of data for further processing. Linear state model	over noisy data. K	alman filter
110057	condition estimation. Statistical learning methods. Regression, classification.	7	
11SCFZ	Seminar of Physics	. Z	0
4405140	Solving problems on kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermody		
11SEMO	Seminar of Electromagnetic Field and Optics Solving problems on electric and magnetic field, electromagnetic field, optics and basics of solid-state physics.	Z	0
11SSF	Secondary School Physics Course	Z	0
	Basics of kinematics, dynamics, thermodynamics, electric field and magnetic field.		ļ
11STAT	Statistics	Z,ZK	4
Basics of probabil	lity Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Paramet	ric tests Nonparan	netric tests
	Regression and correlation analysis		
11X31S	Project 1 ITS	Z	2
11X32S	Project 2 ITS	Z	2
11X33S	Project 3 ITS	Z	2
11Y1BK	Error Detection Codes for Interlocking Systems	KZ	2
	in and methods for its assuring. Safety codes linear codes, cyclic codes, BCH codes, Reed-Solomon codes. Transmission channels, de		_
	probability of undetected error. Design and assessment of detection codes; requirements of the European standard EN 5015		,
11Y1PV	Parametrical and Multicriterial Programming	KZ	2
	plem of linear programming with a parameter in objective function, on right sides and in the matrix of coeficients of linear constraints. Co		l
11Y1SI	Transportation Software Engineering	KZ	2
_	oftware engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and implemen		_
,	and practical usuage.	· ·	•
11Y1TG	Graph Theory	KZ	2
	d terminology of graph theory, graph representation. Problems of graph theory, problem instance. Graph search algorithms, trees, mir		l l
	rian path, bipartite graph matching, flow networks, circulations, critical path method, traveling salesman problem. Problem of existence a		
	for their solving. Computational complexity, dealing with NP-complete problems, heuristic approach.		
11Y1ZM	Foundation of MATLAB Programming	KZ	2
To explain the princ	ciple of algorithmization, flow charts, description of MATLAB environment and its settings, MATLAB help, mathematical operators, matr	ices and elements	operations,
	control flow, inputs and outputs, graphics, optimization and program code debugging.		
12MDE	Transport Models and Transport Excesses	Z,ZK	3
	traffic flow and methods for their measurement. Models of the traffic flow, communications load, line and urban systems. Theory of qu		
transport and its a	assessment. Statistical characteristics of transport. Transport excesses, their analysis, the causes, identify and minimize the consequences.	ences. Improving o	of transport
	safety and fluency.		
12PPOK	Designing Roads, Highways and Motorways	KZ	3
	ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard	•	
Range of vision for	stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet	y device. Crossing	s, junctions,
40)/040	intersections.	7	_
12X31S	Project 1 ITS	Z	2
12X32S	Project 2 ITS	Z	2
12X33S	Project 3 ITS	Z	2
12Y1AE	Applied Ecology	KZ	2
	ecological concepts and principles, ecosystem, ecological factors, energy flow through the ecosystem. Application of knowledge within		
ecology. Landsc	ape ecology - origin and historical development. Landscape definition and classification. Success. Traffic constructions in the countrys protection. Applied ecology.	side. Landscape ar	nd nature
12Y1C1	Designing Roads in Civil 3D I	KZ	2
	voted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through		1
	uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The	=	_
	explanation of the traffic building design in the real-life profession.		
12Y1C2	Designing Roads in Civil 3D II	KZ	2
	voted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through		
particular linear be	uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The	previously acquire	d skills are
	improved and developed. Students learn to design intersections.		
12Y1DS	Project Documentation in Practice	KZ	2
Project documents	ation creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process.	Budget and pricing	g. Practical
	creation of some project documentation parts.		
12Y1HD	Traffic Noise	KZ	2
	on, basic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regulation		
area, principles	of urban acoustic, noise transmission, soundproofing. Types of noise sources in area. Determination of acoustic situation in the area	of interest. Method	dology of
	computing and measurement of transport noise. Acoustic studies, measuring protocol.		
12Y1KN	Combined Transportation	KZ	2
Combined transp	port strategy and legislation. Load units. Means of transport in combined transport. Combined transport systems. Transshipping areas.	Multimodal logisti	c centres.

407/41/D	Communication and Dramation of Transport Drainets	1/7	
12Y1KP	Communication and Promotion of Transport Projects Public Relations and the power of public opinion. Work and tasks of PR department and press spokesperson. Communication with the	KZ	2 lic on social
	ond. Communication strategy of transport projects. Systematic goodwill building. Crisis situations in communication and preparation		
Í	influence of political marketing and political PR on transport projects. Lobbing.		
12Y1PC	Pedestrian and Cycling Transport	KZ	2
Routes for pedestria	ans. Pedestrian crossings. Modifications for blind, dim-sighted and disabled people. Design of cycle routes network. Ways of cycle route	। e layout and desig	n parameters
for cyclists. Separa	ation of cyclists from other transport modes. Cycle tracks and its design - one way streets, reserved traffic lanes, bus stops, crossing	s with other trans	port modes,
	crossroads. Traffic signs and road marking for cyclists.		
12Y1PD	Assessment of Transport Structures	KZ	2
Assessment of trans	sport structures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibilities of	f its protection and	d assessment
transport structures	s on the landscape. Rating fragmentation and landscape connectivity in the preparation of linear structures. Practical examples of as the environment.	sessment of traffic	buildings on
12Y1PU	Organization Disposition of Railway Stations	KZ	2
Connecting static	on. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zo	ne stations. Forma	ation yards.
Reser	ve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republi	c railway network.	
12Y1RU	Railway Lines Reconstruction	KZ	2
Keeping railway lir	ne operational, maintaining lines and stations, geometrical alignment of railway line, vehicles for railway superstructure and substruc		, scheduling
	and organising possesions, preparation of railway lines reconstruction and maintenance, process of ralway line reconstruction		
12Y1SU	Road Management and Maintenance	KZ	2
•	ith ownership of roads in the Czech Republic and the administration of the road at the state and county level. It is presented develop		
medium and long-te	erm strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and repair	r methods are dis-	cussed in the
40.44	classroom as well as investment activity in highway engineering.	T=	
12Y1VR	Public Transport in Cities and Regions	KZ	. 2
	political pillars of public transport. Accessibility of public transport. Transport demand management and directional coordination of lir arameters and transport variations. Types of lines according to their routing and basic operating parameters. Time coordination of lin		_
	Organization of tram operation in Prague. Tram safety.		
12Y1ZU	Principles of Urbanism	KZ	2
Survey on history	of city and settlement building. Functional components and their mutual relations (working, living, recreation, transportation). Spacia	-	settlements.
	Types of towns or cities with a certain prevailing function, forms of their development. Brief overview of land-use planning		
12ZTS	Railway Lines and Stations	Z,ZK	4
Rail transport. Ra	illway track geometry parameters. Route layout of railway lines. Railway line construction - railway substructure and superstructure.	-	ilway lines.
	Railway control systems in relation to infrastructure. Operating and carriage points. Railway lines net and category. Traction in rail		_
12ZYDI	Introduction to Transportation Engineering	Z,ZK	2
Role of transportation	on in land-use planning. Basic terms in transportation engineering. Traffic survey and traffic prognosis. Introduction to topic of roads, p impacts of transportation to environment and safety.	oublic mass transp	ort. Negative
14AM	Automation and Measurement	Z,ZK	6
Introduction into ter	rms agent, rational agent, their unification to elements of transportation systems, analogies in nature, regulation in openen loop and	control in closed I	oop, reactive
systems, control us	sing finite state machines. Dynamic system identification. Measurement of basic electric and other physical quantities, principles of r	neasurement instr	ruments, DC
	and AC measurement, actuators, measurement automation, measurement laboratories.		T
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 algo		-
and use basic Bool	ean algebra to construct constraints in algorithms. Students will be introduced to the basics of the Python programming language - \		g, loops, they
4.40.470	will learn to work with variables of basic data types (integer, floating point and string) and the list data structure in their progra		
14DATS	Database Systems	KZ	2
	f database systems, conceptual model, relational data model, the principles of normal forms, relational database design, security ar	0 ,	i, database
	queries, relational algebra, SQL language, client / server, multilayer architectures, distributed database systems. Access to data via	1	
14DPK	Digital Support for Designing of Roads and Highways	Z	0
44577	Seminars possibilities of technical processing problems focused on designing of roads and highways.		
14DZT	Digital Support for Railway Lines	Z	0
4.4103.45	Seminars possibilities of technical processing problems solved in the field of railway lines.	7 716	
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 infor in transport. Roles, processes, management, optimization in IS. Oracle data types. SQL Developer, SQL queries. Comprehensive ex		
	programming.		
14KSP	Constructing with Computer Aid	KZ	2
	m determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic common wo		
and CA systems.	Co-ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting possil profiles, drawings with raster foundaments).	oilites, AutoCAD e	nvironment
14PRG	Programming	KZ	2
The Course Progr	ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python progra	mming language i	s expanded
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 working with date and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML).	ching, tuples, sets,	, dictionaries,
14TAMS	Telecommunications and Local Area Networks	Z,ZK	7
	rent state and introduction of the new trends in the development of telecommunication systems. The legal environment for the provision		mmunication
convicos is ovalain	ned, basic telecommunication solutions in the hierarchical architecture of telecommunication networks are presented, and the links b parts and the performance of telecommunication systems.	etween the param	neters of the
services is explain			
		7	2
14X31S	Project 1 ITS	Z	2
		Z Z Z	2 2 2

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14Y1AV	Animation and Visualization	KZ	2
Advanced modifica	tions and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and Spa	ace Warp objects. A	Atmospheric
and other effect	s, rendering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animatior	n using Inverse Kin	ematics.
14Y1BE	Barrierless Transport	KZ	2
	! ·		
	rless accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students	J	١
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		
		•	
reuna recognition n	nethod, 2D and 3D face recognition, vein patterns on the wrist, ear biometrics, fingerprint recognition, skin spectroscopy, behavioral r	nemous, the use o	Diometrics
	in transport applications, safety and risks of biometric technologies.		
14Y1HW	Computer Hardware	KZ	2
Computer archite	scture, basics of logical circuits design and their realization using FPGA. In detail, description of computer architecture and separate	narts designing - c	ontrollers
oompator arount	arithmetic and logical units, I/O subsystem.	santo accigimig	,
14Y1MP	Modeling Complex Assemblies and Models in Parametric Modeller	KZ	2
Assemblies prog	gramming - tools and methodology of working subassemblies and assemblies, sheet metal parts modelling, welded assemblies, pipe	lines, and distributi	ion lines.
	Photorealistic output rendering - physical and material properties, lighting sources. MKP - visual example.		
14Y1OJ	Object - oriented programming in JAVA	KZ	2
	Encapsulation. Classes. Attributes. Access modifiers. Methods and overloading. Special methods (constructors, getters / setters). Ba	-	
data types. Inherita	ince. Polymorphism. Statics, constants, interfaces, abstract classes, enum, packages, exceptions, collections, generics, lambda expre	essions, anonymou	s functions.
14Y10P	Operating System	KZ	2
	stallation GNU/Linux OS. X-window system. Rights management - users and groups, ACL rights. Filesystems and attributes. Program		
		•	
runieveis. Basic (console programs / commands. Config files. SW management, package systems. Programs in graphic shell - text, spreadsheet, graph	lic editors, sound,	video and
	communication. Services management. Safe and secure configuration of OS. Remote administration.		
14Y1P2	Computer Aid of Transportation Projecting 2	KZ	2
	oplication for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, dat	a exchange). Adva	nced blocks
	utes, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transition		
modification (attribu		ii cui ve, cioss-aiiu	iorigitudiriai
	section). Basics of 3D modelling.		
14Y1PA	3D Modeling in AutoCAD	KZ	2
Work in 3D non-p	arametric modeller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup creation, object	data creation, work	k with data
	connected with external database. Basic definition of work with lights, materials and reflexes. Models presentation.		
4.4\/4.D.C		1/7	
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 editi	ng programs (withi	n the user
	level scope) using layers, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphic	s cards.	
14Y1PI	Corporate Information System	KZ	2
	on-knowledge, components of information system, syntatic and semantic sense of data, structure of corporate information system, pa		
Data-IIIIOIIIIatio		rticulai iriioriilation	i systeiii
(personalistic, prod	luction, storage, etc.), corporate information politic and information control, risks of information system operation, legal environment of	information syster	n operation,
(personalistic, prod	luction, 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 syster	n operation,
	state information system, information system security, data protection, safety politics.	,	
14Y1PJ	state information system, information system security, data protection, safety politics. C Programming Language	KZ	2
14Y1PJ	state information system, information system security, data protection, safety politics. C Programming Language guage. Preprocessor, basics of the C language (data types, syntax, commands), functions, pointes, dynamical memory allocation, strir	KZ ng, files, structures	2
14Y1PJ C programming lan	state information system, information system security, data protection, safety politics. C Programming Language guage. Preprocessor, basics of the C language (data types, syntax, commands), functions, pointes, dynamical memory allocation, strir Implementations of abstract data types (FIFO, LIFO, LIST), programming techniques (sorting, searching, recursion), using bitwise operations.	KZ ng, files, structures prerators.	2 and unions.
14Y1PJ	state information system, information system security, data protection, safety politics. C Programming Language guage. Preprocessor, basics of the C language (data types, syntax, commands), functions, pointes, dynamical memory allocation, strir	KZ ng, files, structures	2
14Y1PJ C programming lan	state information system, information system security, data protection, safety politics. C Programming Language guage. Preprocessor, basics of the C language (data types, syntax, commands), functions, pointes, dynamical memory allocation, strir Implementations of abstract data types (FIFO, LIFO, LIST), programming techniques (sorting, searching, recursion), using bitwise operations.	KZ ng, files, structures prerators. KZ	2 and unions.
14Y1PJ C programming lan 14Y1PZ Students will be	state information system, information system security, data protection, safety politics. C Programming Language guage. Preprocessor, basics of the C language (data types, syntax, commands), functions, pointes, dynamical memory allocation, strir Implementations of abstract data types (FIFO, LIFO, list), programming techniques (sorting, searching, recursion), using bitwise of Advanced Data Processing in Spreadsheets familiar with principles of working in a spreadsheet. Graphic layout of the table appearance, formatting of numbers, insertion of formations.	KZ ng, files, structures orerators. KZ llas and functions,	2 and unions.
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14Y1PJ C programming lan 14Y1PZ Students will be addressing, error d	state information system, information system security, data protection, safety politics. C Programming Language guage. Preprocessor, basics of the C language (data types, syntax, commands), functions, pointes, dynamical memory allocation, strir Implementations of abstract data types (FIFO, LIFO, list), programming techniques (sorting, searching, recursion), using bitwise or Advanced Data Processing in Spreadsheets familiar with principles of working in a spreadsheet. Graphic layout of the table appearance, formatting of numbers, insertion of formule etection. Working with large spreadsheets, filters, advanced filters, database functions. Pivot tables and charts, conditional formatting, so data analysis. Examples and questions from various companies and training.	KZ ng, files, structures prerators. KZ ulas and functions, solution finding, solv	2 and unions. 2 including ver, macros,
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15JZ1A	Foreign Language - English 1	Z	3
	ures and Style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and co	_	_
	stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles of	of rhetoric.	
15JZ2A	Foreign Language - English 2	Z,ZK	3
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-	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v		_
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15JZ3I	Foreign Language - Italian 3	Z	3
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15JZ3N	Foreign Language - German 3 stics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of la	Z	3
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	features. Practice of oral and written presentation.	_	T
15JZ3S	Foreign Language - Spanish 3	Z	3
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15JZ4F	Foreign Language - French 4	Z.ZK	3
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and perceptive and	d communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work v	with (professional)	text and its
	features. Practice of oral and written presentation.		
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15JZ4I	Foreign Language - Italian 4	Z,ZK	3
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15Y1HE	Work Hygiene and Ergonomics in Traffic	KZ	2
ŭ	of occupational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of these		
Creation and prote	ction of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technology to po	ossibilities and skil	Is of a man.
. =>	Practical examples from the field of transportation; relevant legislature.		
15Y1HL	History of Civil Aviation	KZ	2
	g, development of aircrafts lighter than air. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of a	•	
world airports. Fe	amous aviators. Helicopters. CSA airplanes. Development of aircrafts in Czechoslovakia between the years 1945-1989. Classic era o aviation. Modern era of civil aviation. Airline companies. Supersonic flying.	aviation. Golden	ela di civil
15Y1MK	Modern History in Context: Every Day Life and Transport	KZ	2
131 HVIIX	Historical overview of modern history of every day life, science, technology and transport in a wider context.	IXZ	2
15Y1NE	German in the Economy and Society	KZ	2
	and social issues of German speaking countries and of the EU. Reading and listening of texts. Lexical, grammatical and semantic ar		1
	selected topics.	.,	
15Y1ZV	East-West dichotomy: Prelude to the Cold War	KZ	2
	evolution of the "West" and "East" from the 1500s. Focus on the history in the period between 1850 nad 1950. Milestones and continu		1
in the end of 19th	century and the beginning of the 20th century. Revolutions, the causes and consequences. Scientific and technological progress, the	e causes and cons	equences.
	Economic and financial history. Social changes. Discussions on texts, sources.		
16DOTE	Transport Technology	Z,ZK	6
	main features and principles. Construction and design elements, important legislation, testing. Drives and transmission, energy accurate		-
vehicle dynamics (I	ateral, transversal, vertical, driveability, suspension, wheel-road contact), mathematic solution of dynamic systems. Design features of	passive, active an	d integrated
	safety.		
16SVIR	Vehicle Systems and Interaction with Driver	Z,ZK	7
16UDOP	Introduction into Vehicles	Z	2
Vehicles and trans	portation systems. Functionality and setup. Movement and drive principles. Engines and their characteristics. Rail, road, air and wate	r transport. Alterna	ative means
101/010	of transport. Lifting equipment and conveyors. Legislation.	_	
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 energy	_	ne, electric
40)(410	drive, steam engine, air engine. Energy accumulation means, accumulator, flywheel, fuel cell. Energy recuperation. WTW anal	-	
16Y1IS	Interactive simulators and simulations	KZ	2
	ry and application of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical models are typically expensed by the computing and interesting typical expenses are lead corriege in particular Virtual reality extense. Practical expenses with circulation confusion and interesting typical expenses and interesting typical expenses.		methods.
16Y1KS	lation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and intera	KZ	2
	Quality and Reliability of Vehicles ility theory in design, development, production and operation of vehicles. Definition and possible approach to quality and reliability. K		1
-	Analysis), QFD (Quality Function Deployment), DFx (Design for Assamly, Manufacturying, Quality, Services) and other methods u		
	Knowledge-based systems of quality and reliability, data collection.	000 III II 1000 II 101	- pca
16Y1PV	Operation, Construction and Maintenance of Vehicles	KZ	2
	production. Vehicle maintenance. Vehicle diagnostics. Maintenence and repair plans. Engine maintenance and emission measurement		
	General principles of engine diagnostics.		
16Y1RE	Control and Electronic Vehicle Systems	KZ	2
Elementary concep	ts of regulation. Tools for analytical solution, linear system description. Basic types of a regulator (PID), properties, advantages, disadva	ntages, function. C	Conventional
and hybrid drive	$control.\ Electric\ drive.\ Vehicle\ communication\ bus\ (CAN,\ LIN,\ FlexRay,\ ISObus,\ KWP2000\ protocole\ etc.).\ Vehicle\ electronic\ control,$	safety, communication	ation and
	comfort systems.		
16Y1SO	Strategy and innovation in mobility	KZ	2
	novation, definition. Innovation strategy. Innovation life cycle and ecosystem, main sources and funding opportunities. Successful innovation of the control		- 1
co-financing, evalua	ation. Sprint method and its use. Innovative business model - main patterns and examples, design, strategy, processes and outlook (I	ousiness plan and	possibilities
4 C V / 4 V / T	of use). Creating an innovation strategy. Customer and value map, design and testing.	1/7	
16Y1VT	Development in Railroad Vehicles s traction. Railroad vehicle parametres regulation. Control and driving of railroad vehicles. Importance in heavy duty and personal trar	KZ	l situation
ramoad veriicies	assesment. New materials in design. International standardization.	isportation. Ontica	i situation
16Y1ZG	Introduction into Applied Computer Graphics	KZ	2
	s, division and applications with emphasis on transport, including development and research. Colours, colour perception, colour sche		1
	on, elementary algorithms for graphic data workout. Visualisation principles and tasks, technics, graphics and visualisation HW basics		
	graphics software.		
16Y1ZL	Vehicle Testing, Legislation and Construction	KZ	2
	otorbike costruction, aggregate computing, driving resistance, build and parameters of traction, constructional arrangement of personal of	ars, trucks, buses,	motorbikes,
legi	slation in the EU and in the world, technical legislation creation, testing methods, vehicle tests, accelerated tests, mathematical mode	elling in testing.	
17TEDL	Transport Technology and Logistics	KZ	3
	sport technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and freight tran	-	
	odus, technologic factors of the side of operator and client, organisation of city transport, logistic technologies and their aplication usi		
17TGA	Graph Theory and its Applications in Transport	Z,ZK	4
	graph theory, paths in graphs, flows in networks, location problems, design problems on graphs, optimum routing, use of graphs in c		<u> </u>
17X31S	Project 1 ITS	Z	2
17X32S	Project 2 ITS	Z	2
17X33S	Project 3 ITS	Z	2
17Y1EV	Public Sector Economy	KZ	2
	ncial theory of public sector, public choice theory, externalites, decisions about public finance allocation, economic assesment of public projects a their economic efficiency assessment, way of elaboration of PPP projects, funding from		
ray evetem of the C	k, state budget, management of bublic projects a their economic ethiclency assessment, way of elaboration of DDD projects, funding fro	am Frittinds aroa	ram HI 1M-//

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17Y1LL	Logistics of Passenger and Freight Air Transport nger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial transport	KZ	2 engers and
ogistios airinie passer	air cargo. Information systems in air transport. Global distribution systems.	process pass	crigers arr
17Y1MD	Marketing in Transportation	KZ	2
General principles of n	narketing applied to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transport and th the application of marketing.	e resulting dif	ferences in
17Y1OF	Personal Finance	KZ	2
Personal finance (bud	get, financing of basic living needs), debt (loans and credits, payment instruments, interest and fees, debt trap), financing of housing (rent, mortgag	e, savings,
onsumer loans, refinal	ncing), savings and investments (investment horizon, return, risk, investment strategy), insurance (insurance types, suitability and adequ (retirement savings and insurance).	uacy), securin	g the futur
17Y1PM	Personnel Management	KZ	2
Human sources,	work group, man as personality, planning, choice, evaluation and education of human sources, work adaptation, teamwork, interculture	al communica	ation.
17Y1SK	Urban and Regional Rail Transport Systems	KZ	2
_	nsport demand, modal-split, distribution of passenger flows on public regional transport lines. Optimization of line management, line ne netable. Vehicle circulation creation. Optimizing driver shifts and arranging them in turnus. Effects of barrier-free and public transport pr	_	-
17Y1SL	marketing. Sociology of Human Resources	KZ	2
-	bociology of numan Resources their importance, work group as a special kind of social group, communication, personal management, modern management, human re		
	of the organization.		
17Y1ST	Titan Simulation	KZ	2
-	ent game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same product. Str	-	
etermine the quantity	and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequences of the of financial corporate reports and they use this information for other business decisions.	eir decisions	by the forn
18MTY	Materials Science and Engineering	Z,ZK	3
	als science and engineering explains mechanical properties of structural materials based on their bonding forces and microstructure. Ho		
s paid to metals as the	e most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and composit to degradation processes in materials, to defectoscopy and to main mechanical tests.	tes. Attention	is also pai
18PZP	Elasticity and Strength	Z,ZK	3
	ion. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolted and w		-
	Analysis of deflection curve of beams. Torsion of circular cross sections. Combined loading. Stability.		
18SAT	Structural Analysis	Z,ZK	4
=	rces in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determinate bea . Kinematic method for calculation of reactions of statically determinate systems. Determination of axial forces in truss constructions. Cross	-	-
morpio or virtual work		o occional one	araotoriotio
	of planar shapes. Fiber polygons and chains.		
18SPP	Seminary from Elasticity and Strength	Z	0
	Seminary from Elasticity and Strength Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam. Ana	_	-
Excersise for practice.	Seminary from Elasticity and Strength Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam. And of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling.	alysis of defle	ction curve
Excersise for practice.	Seminary from Elasticity and Strength Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam. Analysis of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Seminary from Structural Analysis	alysis of defle	ction curve
Excersise for practice. 18SS Examples for practise.	Seminary from Elasticity and Strength Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam. And of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Seminary from Structural Analysis General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and simp vorks for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of joints	Z le framework.	ction curve 0 Applicatio
18SS xamples for practice.	Seminary from Elasticity and Strength Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam. And of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Seminary from Structural Analysis General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and simp vorks for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of joints Geometry of cross sections. Plane fiber polygons.	Z le framework. and method c	0 Application of sections.
18SS sxamples for practice.	Seminary from Elasticity and Strength Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam. And of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Seminary from Structural Analysis General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and simply orks for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of joints Geometry of cross sections. Plane fiber polygons. Seminary from Technical Documentation international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional and	Z le framework. and method o	0 Application of sections.
18SS xamples for practise. 18SS principle of virtual writing to the standards,	Seminary from Elasticity and Strength Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam. And of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Seminary from Structural Analysis General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and simply orks for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of joints Geometry of cross sections. Plane fiber polygons. Seminary from Technical Documentation international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional and arrangement of drawing sheets.	Z le framework. and method c	O Application of sections O accuracy,
18SS xamples for practice. 18SS xamples for practise. of principle of virtual was 18STD Technical standards,	Seminary from Elasticity and Strength Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam. And of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Seminary from Structural Analysis General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and simply orks for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of joints Geometry of cross sections. Plane fiber polygons. Seminary from Technical Documentation international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional and arrangement of drawing sheets. Technical Documentation international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional and international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional and international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional and international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional and international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional and international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional and international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional and international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional and international standardization, technical drawings, representation of technical objects, technical diagram	Z le framework. and method of geometrical at KZ	O Application of sections O accuracy,
18SS sxamples for practice. 18SS sxamples for practise. of principle of virtual w 18STD Technical standards, 18TED Technical standards,	Seminary from Elasticity and Strength Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam. And of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Seminary from Structural Analysis General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and simply orks for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of joints Geometry of cross sections. Plane fiber polygons. Seminary from Technical Documentation international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional and arrangement of drawing sheets. Technical Documentation international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional and arrangement of drawing sheets.	Z le framework. and method of geometrical a	O Application of sections O accuracy, 2 accuracy,
18SS xamples for practice. 18SS xamples for practise. of principle of virtual was principle of virtual was principle. Technical standards, 18TED Technical standards, 18X31S 18X31S	Seminary from Elasticity and Strength Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam. And of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Seminary from Structural Analysis General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and simply orks for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of joints Geometry of cross sections. Plane fiber polygons. Seminary from Technical Documentation international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional and arrangement of drawing sheets. Technical Documentation international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional and arrangement of drawing sheets. Project 1 ITS	Z le framework. and method of geometrical a KZ geometrical a	O Application of sections O accuracy, 2 accuracy,
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21X31S	Project 1 ITS	Z	2
21X32S	Project 2 ITS	Z	2
21X33S	Project 3 ITS	Z	2
21Y1AM	Aeronautical Information Management (AIM) c overview of AIS and AIM. Transition from AIS to AIM. Regulatory base. Provision of AIS/AIM in the Czech Rep. AIP (Aeronautical Inf	KZ	2 R Manual of
	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).		
21Y1BS	Unmanned aircraft systems 1	KZ	2
Unmanned Aviation	n Development. Aircraft design. Legislation in force in the Czech Republic. Planning and execution of the flight. Airspace division. Ope	rational risks and	operationa
	procedures. Practical flights.		T
21Y1LJ	Aeronautical Radio and Flight Instruments	KZ	2
	story of aircraft instrumentation, aerometric instrumentation, Earth magnetism, aircraft electric equipment, gyroscopic instrumentation,		
21Y1LS	Ift equipment, engine instrumentation, warning and recording systems, instrumentation operational requirements, radiocommunication Air Traffic Services	KZ	2
	in Czech Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, APP		I
, mopaco on actaro .	at USA and Czechoslovakia. ATS - Model of financing. Training System of Air Traffic Controllers. Future development of ATS		0.0.7
21Y1MP	Matlab for project-oriented study	KZ	2
The subject's syllab	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 exampl	les, based on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improvement	nt of students' Ma	tlab skills.
21Y1OH	Airline Business and Operations	KZ	2
•	s a comprehensive view of the commercial, operational and transportation activities of air transport companies. It focuses on the organization		
various aspects of t	heir strategy, economic and operational indicators. It introduces students in detail to operational processes and the essentials of transport. a basic view of the economic aspects of air transport.	ortation processes	s. It provide
21Y1PA	Air Traffic Control Operating Procedures	KZ	2
	on the ATC simulator with the following focus - getting familiar with the simulation environment, acquiring basic habits, aircraft identifi		_
	C clearance, use of RNAV points. Practical exercises focused on the basis of vectoring, timely application of vertical spacing, EST and	•	
	Exercises in the APPROACH airspace, arrivals, departures and conflict solutions.		
21Y1PC	ATC Procedures and Activities	KZ	2
-	procedures, basics of communication and phraseology, aircraft identification, spacing and traffic coordination. In addition, the course d		
	ts and low visibility operational procedures. Students will during the course learn basic safety management applications applied across		
21Y1PL	Operational Aspects of Aerodromes ts of aerodromes. Location of aerodrome and orientation of runways. Requirements for apron. Capacity of airports runways and termi	KZ	2
Operational aspec	conditions. Firefighting units. Protection against unlawful interference. Local transport connection. Environmental protection.		nder winter
21Y1RZ	Human Resources Management	KZ	2
l l	numan resources in the organization and related disciplines file. Substance, importance and challenges of human resources manager		_
environment of hum	nan resource management. Human resource planning. Search, recruitment and selection of employees. Motivation, evaluation and rem	uneration of staff.	Positioning
	dismissal and redundancies of employees. Education of employees. Planning career management.		1
21Y1SI	ATC Simulator		
		KZ	2
	with the simulation environment, acquiring basic habits, aircraft identification procedures, vectoring, level changes, ATC clearance, use	e of RNAV points.	Practical
	with the simulation environment, acquiring basic habits, aircraft identification procedures, vectoring, level changes, ATC clearance, use ng on basic vectoring, early application of vertical separation, EST and REV message passing. Practical exercises in the APPROACH	e of RNAV points.	Practical
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23Y1KY	Cybernality	KZ	2
_	behavior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism. Inf	• •=	_
23Y1MK	Crisis Situation Management in Critical Infrastructure	KZ	2
_			_
	ritical infrastructute elements on all levels, their protection systems, responsibilities of particular agencies of the state administration	-	nment, and
tneir	responsibilities to anounce particular safety provisions. Physical and cyber protection of critical infrastructure with special attention to	the soft targets.	
23Y1MU	Emergency Events Management Solution in Transport Infrastructure	KZ	2
Basic solutions of e	mergency events with emphasis of the transport infrastructure events and their solution management. Knowledge in the emergency pla	anning and special	procedures
	in liquidation work within the transport infrastructure.		
23Y1OK	Protection of Critical Objects and Infrastructures	KZ	2
Types of technologi	cal systems, critical item, risks and their courses, criticality, vulnerability, connectivity, dependability, resilience, failure, protection, safe	v of critical objects	and critical
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	infrastructures.	,	
23Y1TP	Criminal Law in IT and Transportation	KZ	2
Introduction of cri	minal law into legal order, conception of culpability and criminal delict, consequency of other legal standards. international treaty and	criminal law, inves	stigation of
	crime, specific indicia of criminal court cases, practical examples.		
23Y1VS	Negotiation and Cooperation	KZ	2
Code of conduct for	r negotiation. The influence of personality traits on the negotiations. Negotiation and commanding. Teamwork. Variants teams. Inform	al and formal role	in the team.
Principles of negoti	ation, the essence of negotiation, the differences in negotiation in business and in crisis situations, the principle of "win both", specific	ations and bidding	a, the role of
	trust.	•	
TV-1	Physical Education	Z	1
TV-2	Physical Education	Z	1
TVKLV	Physical Education Course	Z	0
TVKZV	Physical Education Course	Z	0

For updated information see http://bilakniha.cvut.cz/en/FF.html Generated: day 2025-06-28, time 01:06.