Study plan

Name of study plan: BEZ bak.prez.17/18 - v 1.sem. si NEZAPSALI 14DB

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: 128
Elective courses credits: 52
Sum of credits in the plan: 180

Note on the plan:

Name of the block: Compulsory courses Minimal number of credits of the block: 94

The role of the block: Z

Code of the group: 1.S.BP 15/16

Name of the group: 1.sem.bak.prez. od 15/16

to degradation processes in materials, to defectoscopy and to main mechanical tests.

Requirement credits in the group: In this group you have to gain 28 credits

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

Credits in the group: 28 Note on the group:

Note on the grou	۲۰					
Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11CAL1	Calculus 1 Olga Vraštilová, Magdalena Hykšová, Ond ej Navrátil, Tomáš Tasák, Bohumil Ková Magdalena Hykšová	Z,ZK	7	2P+4C+22B	Z	Z
11LA	Linear Algebra Lucie Kárná, Martina Be vá ová, Pavel Provinský Martina Be vá ová	Z,ZK	3	2P+1C+10B	Z	Z
12ZYDI	Introduction to Transportation Engineering Zuzana arská, Vojt ch Novotný, Dagmar Ko árková	Z,ZK	2	1P+1C	Z	Z
18MTY	Materials Science and Engineering Jitka ezní ková, Michaela Neuhäuserová, Radim Dvo ák, Václav Rada, Jan Falta, Jaroslav Valach	Z,ZK	3	2P+1C+10B	Z	Z
20SYSA	Systems Analysis Zuzana B linová, Ji í R ži ka, Patrik Horaž ovský, Petr Bureš	Z,ZK	5	2P+2C+14B	L	Z
11GIE	Geometry Pavel Provinský, Šárka Vorá ová, Old ich Hykš Šárka Vorá ová	KZ	3	2P+2C+12B	Z	Z
18TED	Technical Documentation Jitka ezní ková, Vít Malinovský	KZ	2	1P+1C+8B	Z	Z
16UDOP	Introduction into Vehicles Zuzana Radová, Josef Mík, 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=1.S.BP 15/16 Name=1.sem.bak.prez. od 15/16

11CAL1	Calculus 1	Z,ZK	7					
Sequence of real number	pers and its limit. Basic properties of mappings. Function of one real variable, its limit and derivative. Geometric properties of n-	dimensional Eukl	idean space and					
Cartesian coordinate s	ystem. Geometric meaning of the differential of functions several real variables, differential calculus of functions of several rea	ıl variables.						
11LA	Linear Algebra	Z,ZK	3					
Vector spaces (linear of	ombinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and	their solvability. D	eterminants and					
their applications. Scal	ar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classification.							
12ZYDI	Introduction to Transportation Engineering	Z,ZK	2					
Role of transportation	n land-use planning. Basic terms in transportation engineering. Traffic survey and traffic prognosis. Introduction to topic of road	s, public mass tra	nsport. Negative					
impacts of transportati	on to environment and safety.							
18MTY	Materials Science and Engineering	Z,ZK	3					
Basic course of materi	als science and engineering explains mechanical properties of structural materials based on their bonding forces and microstru	acture. However th	ne main attention					
is paid to metals as the	s paid to metals as the most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and composites. Attention is also paid							

20SYSA	Systems Analysis	Z,ZK	5				
Introduction to system sciences, system viewpoint, terminology, typical system analysis tasks, system identification, system interface and interface tasks, processes, system behaviour							
and its analysis, strong functions and processes, genetic code, system identity, system architecture. Tools for system analysis - Petri nets, decision tables, algorithms for structural							
tasks. Soft and hard sys	tems, methods for soft system analysis.						
11GIE	Geometry	KZ	3				
Differential geometry of	curves - parameterization, the arc of the curve, torsion and curvature, Frenet's trihedron. Kinematics - a curve as a trajector	y of the motion, th	ne velocity, and				
acceleration of a particle	e moving on a curved path.						
18TED	Technical Documentation	KZ	2				
Technical standards, int	ernational standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensior	nal and geometric	al accuracy,				
arrangement of drawing	sheets.						
16UDOP	Introduction into Vehicles	Z	2				
Vehicles and transportation systems. Functionality and setup. Movement and drive principles. Engines and their characteristics. Rail, road, air and water transport. Alternative means							
of transport. Lifting equi	pment and conveyors. Legislation.						
TV-1	Physical Education	Z	1				

Code of the group: 1.S.BP VÝB R 15/16

Name of the group: 1.sem.bak. prez výb r p edm tu od 15/16

Requirement credits in the group: In this group you have to gain 2 credits

Requirement courses in the group: In this group you have to complete 1 course

Credits in the group: 2 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) Titlers authors and quaranters (gar.)	Completion	Credits	Scope	Semester	Role
14AS	Tutors, authors and guarantors (gar.) Algorithm and Data Structures	KZ	2	0+2	Z	Z
14AZ	Data Analysis and Processing	KZ	2	0+2	Z	Z
14DB	Database Systems	KZ	2	0+2	Z	Z

Characteristics of the courses of this group of Study Plan: Code=1.S.BP VÝB R 15/16 Name=1.sem.bak. prez výb r p edm tu od 15/16

Algorithm and Data Structures Students will be familiarized with selected basic and derived data structures, algorithms, their properties and their design procedure. Students will analyze problems, propose theoretical solutions to the set task and the resulting algorithm write by means of flowcharts, practice in reading algorithms recorded by means of the flowchart and use the basics of Boolean algebra with forming the conditions for the algorithms.

14A7 Data Analysis and Processing Main aim of this course is learn students how to prepare raw data for following processing and analysis. Knowledge of algorithms for determining the parameters of different data

sources; source can be used images, text, time series, etc. The next step is the theoretical skills and knowledge to apply in solving the problem, e. g. extraction parameters from the image data or from the Internet.

14DB Database Systems

K7 Basic concepts of database systems, conceptual model, relational data model, the principles of normal forms, relational database design, security and integrity of data, database queries, relational algebra, SQL language, client / server, multilayer architectures, distributed database systems. Access to data via the WWW.

Code of the group: 2.S.BP 15/16

Name of the group: 2.sem.bak.prez. 15/16

Requirement credits in the group: In this group you have to gain 28 credits

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

Credits in the group: 28

Note on the group.

Note on the group	φ.					
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, Magdalena Hykšová, Ond ej Navrátil, Tomáš Tasák, Old ich Hykš Magdalena Hykšová Ond ej Navrátil (Gar.)	Z,ZK	5	2P+3C+20B	L	Z
11FY1	Physics 1	Z,ZK	4	2P+2C	L	Z
11STAS	Statistics Ivan Nagy	Z,ZK	5	2P+2C	L	Z
12ZTS	Railway Lines and Stations Lukáš Týfa, Martin Jacura, Petr Šatra, Tomáš Javo ík, Ond ej Trešl	Z,ZK	4	2P+2C+10B	L	Z
18SAT	Structural Analysis Jitka ezní ková, Radim Dvo ák, Václav Rada, Jan Falta, Petr Koudelka, Daniel Kytý, Ján Kopa ka, Jan Vy ichl, Tomáš Doktor,	Z,ZK	4	2P+2C+14B	L	Z
17TEDL	Transport Technology and Logistics Vít Janoš, Michal Drábek, Zden k Michl, Milan K íž, Ji í Pospíšil	KZ	3	2P+1C	L	Z

21ZALD	Basics of Air Transport Jakub Hospodka, Peter Olexa, Tereza Topková, Kate ina Machula P Ipánová, Sébastien Lán, Jakub Steiner Jakub Hospodka	KZ	2	0P+2C+8B	L	Z
TV-2	Physical Education	Z	1		L	Z
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Characteristics of the courses of this group of Study Plan: Code=2.S.BP 15/16 Name=2.sem.bak.prez. 15/16

11CAL2	Calculus 2	Z,ZK	5
Antiderivative, Newt	tonian integral, Riemannian integral of the function of one variable, improper Riemannian integral, Riemannian integral in Rn. Pa	rametric descripti	on of regular
k-dimensional surfa	ces in Rn, Riemannian integral over regular surfaces. Line and surface integrals of the second type, Stokes theorems, ordinary of	differential equation	ns of the first
order, linear differer	ntial equations with constant coefficients and its systems.		
11FY1	Physics 1	Z,ZK	4
Kinematics, particle	dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermodynamics, electric field, directed electric	current.	
11STAS	Statistics	Z,ZK	5
Definition of probabi	ility, random variable and its description, known distributions, random vector, function of random variable. Methods of point estimati	on. Testing of stati	stical hypothesi
Regression and cor	relation, linear regression, correlation coefficient, coefficient of determination, the general linear model, statistical inference in line:	ar regression, ana	lysis of variance
multiple regression,	the use of matrices in regression.		
12ZTS	Railway Lines and Stations	Z,ZK	4
Rail transport. Railw	vay track geometry parameters. Route layout of railway lines. Railway line construction - railway substructure and superstructure.	Spatial layout of	railway lines.
Railway control syst	tems in relation to infrastructure. Operating and carriage points. Railway lines net and category. Traction in rail transport.		
18SAT	Structural Analysis	Z,ZK	4
General system of f	orces in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determin	ate beams and si	nple girders.
Principle of virtual w	ork. Kinematic method for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction	ons. Cross-section	al characteristic
of planar shapes. Fi	ber polygons and chains.		
17TEDL	Transport Technology and Logistics	KZ	3
Basic terms in trans	sport technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and freight	transport, organis	ation of traffic in
each transport mod	us, technologic factors of the side of operator and client, organisation of city transport, logistic technologies and their aplication us,	using various tran	sport modus.
21ZALD	Basics of Air Transport	KZ	2
History, definitions, t	terminology, basic rules. VFR/IFR. Basics of aerodynamics. Propulsion of aircraft. Aircraft design. Basics of navigation, radio navigat	ion. Weight, balan	ce, performanc
Flight planning, opti	mization of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic management,	ground handling,	security. Air cre
Airlines and econon	nics. Space technologies.		
TV-2	Physical Education	Z	1

Code of the group: 2.S.BP VÝB R 15/16

Name of the group: 2.sem.bak. prez výb r p edm tu od 15/16

Requirement credits in the group: In this group you have to gain 2 credits

Requirement courses in the group: In this group you have to complete 1 course

Credits in the group: 2 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
14KSP	Constructing with Computer Aid Ji í Brož, Ji í Brož, Martin Brumovský, Vladimír Douda, Radek Kratochvíl, Michal Mlada, Lukáš Svoboda, Martin Šrotý, Jan Vogl, Lukáš Svoboda	KZ	2	0P+2C+8B	Z	Z
14PRG	Programming Lukáš Svoboda, Jana Kaliková, Jan Kr ál, Michal Je ábek, Alena Plašilová, Jan Procházka Jana Kaliková (Gar.)	KZ	2	0P+2C+8B	L	Z

Characteristics of the courses of this group of Study Plan: Code=2.S.BP VÝB R 15/16 Name=2.sem.bak. prez výb r p edm tu od 15/16

14KSP Constructing with Computer Aid

"CAD systems" term determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic common work rules in graphic applications and CA systems. Co-ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting possibilities, AutoCAD environment profiles, drawings with raster foundaments).

14PRG Programming KZ 2

Algorithm development, methods of structured programming, high-level programming languages, basics of C programming languages (types, variables, conditions, cycles, arrays, functions), programming techniques, complexity.

Code of the group: 3.S.BP 17/18

Name of the group: 3.sem.bak.prez. 17/18 (bez Fyziky; v 1.sem. se NEzapsali 14DB)

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
15DPLG	Transportation Psychology Eva Rezlerová, Jan Feit, Jana Stikarová	Z	2	2P+0C+6B	Z	Z
23BDIS	Safety Technologies of Transportation and Information Systems	KZ	3	2+0	Z	Z
12MDE	Transport Models and Transport Excesses Milan Dont, Josef Kocourek	Z,ZK	3	2P+1C+8B	Z	Z
17TGA	Graph Theory and its Applications in Transport Alena Rybi ková, Denisa Mocková, Dušan Teichmann	Z,ZK	4	2P+2C+12B	Z	Z
18PZP	Elasticity and Strength Jitka ezní ková, Petr Koudelka, Daniel Kytý, Ján Kopa ka, Jan Vy ichl, Tomáš Doktor, Jan Šleichrt, Petr Zlámal, Radek Kolman,	Z,ZK	3	2P+1C+10B	Z	Z
20UITS	Introduction to Intelligent Transport Systems Ji í R ži ka, Patrik Horaž ovský, Kristýna Navrátilová, Pavel Hluska, Martin Šrotý, Martin Langr, Tomáš Zelinka, Vladimír Faltus, Pavel Hrubeš	Z,ZK	7	3P+2C+20B	Z	Z
12PPOK	Designing Roads, Highways and Motorways Petr Šatra, Ji í arský, Jan Gallia, Tomáš Pad lek, Petr Kumpošt	KZ	3	1P+2C+10B	Z	Z
14DATS	Database Systems Jana Kaliková, Jan Kr ál, Alena Plašilová, Jan Procházka	KZ	2	1P+1C+10B	Z	Z
15JZ1A	Foreign Language - English 1 Eva Rezlerová, Jan Feit, Peter Morpuss, Dana Boušová, Jitka He manová, Lenka Monková, Markéta Olehlová, Marie Michlová, Markéta Vojanová,	Z	3	0P+4C+10B		Z

Characteristics of the courses of this group of Study Plan: Code=3.S.BP 17/18 Name=3.sem.bak.prez. 17/18 (bez Fyziky; v 1.sem. se

15DPLG	Transportation Psychology	l Z	2
Subject of psychol	ology and its basic concepts. Information intake, decision-making and behaviour. Performance. Engineering psychology at	nd vehicle construction. Psych	ı nological aspect
of travel route and	d traffic conditions, accidents and traffic incidents. Selection and training of the staff. Work and leisure. Age as a factor in	n transport operation.	
23BDIS	Safety Technologies of Transportation and Information Systems	KZ	3
Safety of transpor	rtation means - principles, testing, evaluation. Safety of infrastructures, critical structures, crisis scenarios. Safety of info	ormation systems and their ro	bustness.
12MDE	Transport Models and Transport Excesses	Z,ZK	3
Parameters of the	e traffic flow and methods for their measurement. Models of the traffic flow, communications load, line and urban system	ns. Theory of queues, shock v	vaves. Quality o
ransport and its a	assessment. Statistical characteristics of transport. Transport excesses, their analysis, the causes, identify and minimize	e the consequences. Improvir	ng of transport
safety and fluency	у.		
17TGA	Graph Theory and its Applications in Transport	Z,ZK	4
Basic terms of gra	aph theory, paths in graphs, flows in networks, location problems, design problems on graphs, optimum routing, use of	graphs in other scientific disci	iplines.
18PZP	Elasticity and Strength	Z,ZK	3
Tension and comp	pression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam. Design	of riveted, bolted and welded	joint of structure
Analysis of deflect	tion curve of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Beam	on elastic foundation. Strengt	h analysis.
Analysis of deflect 20UITS		on elastic foundation. Strengt Z,ZK	h analysis.
20UITS	tion curve of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Beam Introduction to Intelligent Transport Systems legislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Funda	Z,ZK	7
20UITS Terminology and le	Introduction to Intelligent Transport Systems	Z,ZK amentals of information and tel	7 ecommunication
20UITS Terminology and le	Introduction to Intelligent Transport Systems legislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Funda	Z,ZK amentals of information and tel	7 ecommunication
20UITS Terminology and lessystems for ITS. Perinciples of ITS.	Introduction to Intelligent Transport Systems legislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Funda	Z,ZK amentals of information and tel	7 ecommunication
20UITS Terminology and lessystems for ITS. Principles of ITS. 12PPOK	Introduction to Intelligent Transport Systems legislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Funda Principles and technical support measurement of traffic data, localization and navigation. Practical work with traffic data.	Z,ZK umentals of information and tel Real examples of possible ap	7 ecommunication of the 3
20UITS Terminology and lessystems for ITS. P principles of ITS. 12PPOK Definition, types, of	Introduction to Intelligent Transport Systems legislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Funda Principles and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Designing Roads, Highways and Motorways	Z,ZK umentals of information and tel Real examples of possible ap KZ y and standard speed. Route	7 ecommunicatio pplications of the 3 in rural areas.
20UITS Terminology and lessystems for ITS. P principles of ITS. 12PPOK Definition, types, of	Introduction to Intelligent Transport Systems legislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Funda Principles and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Designing Roads, Highways and Motorways ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity	Z,ZK umentals of information and tel Real examples of possible ap KZ y and standard speed. Route	7 ecommunication of the polications of the 3 in rural areas.
20UITS Terminology and lessystems for ITS. Pprinciples of ITS. 12PPOK Definition, types, cannot go be a controlled to the controlled to th	Introduction to Intelligent Transport Systems legislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Funda Principles and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Designing Roads, Highways and Motorways ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity	Z,ZK umentals of information and tel Real examples of possible ap KZ y and standard speed. Route	7 ecommunication of the polications of the 3 in rural areas.
20UITS Terminology and lessystems for ITS. Principles of ITS. 12PPOK Definition, types, continued the sections. 14DATS	Introduction to Intelligent Transport Systems legislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Funda Principles and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Designing Roads, Highways and Motorways ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity or stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components	Z,ZK Imentals of information and tel Real examples of possible ap KZ y and standard speed. Route s of roads. Safety device. Cros	7 ecommunicatio pplications of th 3 in rural areas. ssings, junctions
20UITS Terminology and lessystems for ITS. Principles of ITS. 12PPOK Definition, types, cange of vision for intersections. 14DATS Basic concepts of	Introduction to Intelligent Transport Systems legislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Funda Principles and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Designing Roads, Highways and Motorways ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity or stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components Database Systems	Z,ZK Imentals of information and tel Real examples of possible ap KZ y and standard speed. Route s of roads. Safety device. Cros	7 ecommunicatio pplications of th 3 in rural areas. ssings, junctions
20UITS Terminology and lessystems for ITS. Principles of ITS. 12PPOK Definition, types, cange of vision for intersections. 14DATS Basic concepts of	Introduction to Intelligent Transport Systems legislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Funda Principles and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Designing Roads, Highways and Motorways ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity or stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components Database Systems f database systems, conceptual model, relational data model, the principles of normal forms, relational database design	Z,ZK Imentals of information and tel Real examples of possible ap KZ y and standard speed. Route s of roads. Safety device. Cros	7 ecommunicatio oplications of th 3 in rural areas. esings, junctions
20UITS Terminology and lessystems for ITS. Principles of ITS. 12PPOK Definition, types, certain for the sections. 14DATS Basic concepts of queries, relational 15JZ1A	Introduction to Intelligent Transport Systems legislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Funda Principles and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Designing Roads, Highways and Motorways ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity or stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components Database Systems f database systems, conceptual model, relational data model, the principles of normal forms, relational database design I algebra, SQL language, client / server, multilayer architectures, distributed database systems. Access to data via the N	Z,ZK Imentals of information and tel Real examples of possible ap KZ In and standard speed. Route is of roads. Safety device. Cross KZ In, security and integrity of dat NWW. Z	7 ecommunicatio pplications of th 3 in rural areas. ssings, junctions 2 a, database

Code of the group: 4.S.BBEZ VÝB R 17/18

Name of the group: 4.sem bak. BEZ výb r p edm tu (od)17/18

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:

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Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11EMO	Electromagnetic Field and Optics Zuzana Malá, Tomáš Vít Tomáš Vít Zuzana Malá (Gar.)	Z,ZK	4	2P+1C	L	Z
17SFID	Public Administration and Financing in Transport Olga Mertlová, Rudolf F. Heidu	Z,ZK	4	2P+1C+12B	L	Z

Characteristics of the courses of this group of Study Plan: Code=4.S.BBEZ VÝB R 17/18 Name=4.sem bak. BEZ výb r p edm tu (od)17/18

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11EMO	Electromagnetic Field and Optics	Z,ZK	4				
Electric field. Electric	current. Magnetic field. Electromagnetic field. Optics. Basics of solid-state physics.	'					
17SFID	Public Administration and Financing in Transport	Z,ZK	4				
Basic issues of trans	Basic issues of transport and transport policy in the social context, environmental issues in transport, economical aspects of transport, public administration and financing of transport.						

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

The role of the block: ZP

Code of the group: XB 4,5,6 13/14

Name of the group: Projekty bak. 4.5.6.sem. (od)13/14 - pro B3710

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
11X31	Project 1 Bohumil Ková, Jan Pikryl, Ivan Nagy, Evženie Uglickich Jan Pikryl Jan Pikryl (Gar.)	Z	2	0P+1C	L	ZP
12X31	Project 1 Zuzana arská, Vojt ch Novotný, Dagmar Ko árková, Jan Kruntorád, Andreas Papadopulos, Lukáš Týfa, Martin Jacura, Tomáš Javo ík, Ond ej Trešl,	Z	2	0P+1C	L	ZP
14X31	Project 1 Jana Kaliková, Vít Fábera	Z	2	0P+1C	L	ZP
15X31	Project 1	Z	2	0P+1C	L	ZP
16X31	Project 1 Josef Mik, P emysl Toman, Dmitry Rozhdestvenskiy	Z	2	0P+1C	L	ZP
17X31	Project 1 Vít Janoš, Michal Drábek, Zden k Michl, Milan K íž, Ji í Pospíšil, Alena Rybi ková, Denisa Mocková, Dušan Teichmann, Olga Mertlová,	Z	2	0P+1C	L	ZP
18X31	Project 1 Michaela Neuhäuserová, Jan Falta, Jaroslav Valach, Jan Šleichrt, Tomáš Fíla	Z	2	0P+1C	L	ZP
20X31	Project 1 Ji í R ži ka, Milan Sliacky, Martin Leso	Z	2	0P+1C	L	ZP
21X31	Project 1 Jakub Hospodka, Jakub Steiner, Terézia Pilmannová, Jakub Kraus, Peter Vittek, Andrej Lališ, Slobodan Stoji , Stanislav Pleninger, Vladimír Socha,	Z	2	0P+1C	L	ZP
22X31	Project 1 Michal Frydrýn, Karel Kocián, Luboš Nouzovský, Zden k Svatý	Z	2	0P+1C	L	ZP
23X31	Project 1 Milena Macková	Z	2	0P+1C	L	ZP
11X32	Project 2 Bohumil Ková , Jan P ikryl, Ivan Nagy, Evženie Uglickich, Ond ej P ibyl Ond ej P ibyl Bohumil Ková (Gar.)	Z	2	0P+2C	Z	ZP
12X32	Project 2 Zuzana arská, Vojt ch Novotný, Dagmar Ko árková, Lukáš Týfa, Martin Jacura, Tomáš Javo ík, Ond ej Trešl, Pavel Purkart, Josef Kocourek,	Z	2	0P+2C	Z	ZP
14X32	Project 2 Martin Šrotý, Jana Kaliková, Vít Fábera, Marek Kalika, Ota Hajzler	Z	2	0P+2C	Z	ZP
15X32	Project 2	Z	2	0P+2C	Z	ZP
16X32	Project 2 Josef Mik, P emysl Toman	Z	2	0P+2C	Z	ZP
17X32	Project 2 Vít Janoš, Michal Drábek, Zden k Michl, Milan K íž, Ji í Pospíšil, Alena Rybi ková, Denisa Mocková, Dušan Teichmann, Olga Mertlová,	Z	2	0P+2C	Z	ZP
18X32	Project 2 Jaroslav Valach, Daniel Kytý	Z	2	0P+2C	Z	ZP
20X32	Project 2 Ji í R ži ka, Martin Leso	Z	2	0P+2C	Z	ZP
21X32	Project 2 Jakub Hospodka, Jakub Steiner, Terézia Pilmannová, Peter Vittek, Andrej Lališ, Slobodan Stoji , Stanislav Pleninger, Vladimír Socha, Lenka Hanáková,	Z	2	0P+2C	Z	ZP
22X32	Project 2 Michal Frydrýn, Karel Kocián, Luboš Nouzovský, Zden k Svatý, Tomáš Mi unek	Z	2	0P+2C	Z	ZP
23X32	Project 2 Václav Jirovský, Milena Macková	Z	2	0P+2C	Z	ZP

11X33	Project 3 Bohumil Ková , Jan P ikryl, Ivan Nagy, Evženie Uglickich Jan P ikryl Jan P ikryl (Gar.)	Z	2	0P+1C	L	ZP
12X33	Project 3 Zuzana arská, Vojt ch Novotný, Dagmar Ko árková, Jan Kruntorád, Andreas Papadopulos, Lukáš Týfa, Martin Jacura, Tomáš Javo ík, Ond ej Trešl,	Z	2	0P+1C	L	ZP
14X33	Project 3 Martin Šrotý, Jana Kaliková, Tomáš Zelinka, Vít Fábera, Ota Hajzler, Zden k Lokaj	Z	2	0P+1C	L	ZP
15X33	Project 3	Z	2	0P+1C	L	ZP
16X33	Project 3 Josef Mik, Pemysl Toman	Z	2	0P+1C	L	ZP
17X33	Project 3 Vit Janoš, Michal Drábek, Zden k Michl, Milan K íž, Ji í Pospíšil, Alena Rybi ková, Denisa Mocková, Dušan Teichmann, Olga Mertlová,	Z	2	0P+1C	L	ZP
18X33	Project 3 Michaela Neuhäuserová, Jan Falta, Jaroslav Valach, Jan Šleichrt, Tomáš Fíla	Z	2	0P+1C	L	ZP
20X33	Project 3 Ji í R ži ka, Patrik Horaž ovský, Martin Leso	Z	2	0P+1C	L	ZP
21X33	Project 3 Jakub Hospodka, Peter Olexa, Sébastien Lán, Jakub Steiner, Terézia Pilmannová, Jakub Kraus, Peter Vittek, Andrej Lališ, Slobodan Stoji,	Z	2	0P+1C	L	ZP
22X33	Project 3 Michal Frydrýn, Karel Kocián, Luboš Nouzovský, Zden k Svatý	Z	2	0P+1C	L	ZP
23X33	Project 3	Z	2	0P+1C	L	ZP

11X31	Project 1	Z	2
12X31	Project 1	Z	2
14X31	Project 1	Z	2
15X31	Project 1	Z	2
16X31	Project 1	Z	2
17X31	Project 1	Z	2
18X31	Project 1	Z	2
20X31	Project 1	Z	2
21X31	Project 1	Z	2
22X31	Project 1	Z	2
23X31	Project 1	Z	2
11X32	Project 2	Z	2
12X32	Project 2	Z	2
14X32	Project 2	Z	2
15X32	Project 2	Z	2
16X32	Project 2	Z	2
17X32	Project 2	Z	2
18X32	Project 2	Z	2
20X32	Project 2	Z	2
21X32	Project 2	Z	2
22X32	Project 2	Z	2
23X32	Project 2	Z	2
11X33	Project 3	Z	2
12X33	Project 3	Z	2
14X33	Project 3	Z	2
15X33	Project 3	Z	2
16X33	Project 3	Z	2
17X33	Project 3	Z	2
18X33	Project 3	Z	2
20X33	Project 3	Z	2
21X33	Project 3	Z	2
22X33	Project 3	Z	2
23X33	Project 3	Z	2

Name of the block: Compulsory courses in the program Minimal number of credits of the block: 22

The role of the block: P

Code of the group: 4.S.BBEZ 17/18

Name of the group: 4.sem.BEZ bak.prez.(od)17/18

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 7 courses

Credits in the group: 22

Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11MSP	Modeling of Systems and Processes Bohumil Ková , Lucie Kárná, Jan P ikryl, Marek Honc Bohumil Ková (Gar.)	Z,ZK	4	2P+2C+12B	L	Р
18KAD	Kinematics and Dynamics Vít Malinovský, Ján Kopa ka, Jan Šleichrt, Radek Kolman, Tomáš Fíla	Z,ZK	4	2P+1C	L	Р
11LP	Linear Programming Ivan Nagy, Karel Je men Ivan Nagy Ivan Nagy (Gar.)	KZ	3	2P+1C+12B	L	Р
14OJEM	Object Modelling	KZ	3	2+1	L	Р
23BER	Safety and Ergonomical Solutions in Transport	KZ	3	2+1	L	Р
23PSOB	Psychology and Sociology in the Security	Z	2	2+0	L	Р
15JZ2A	Foreign Language - English 2 Eva Rezlerová, Jan Feit, Peter Morpuss, Jitka He manová, Lenka Monková, Markéta Olehlová, Marie Michlová, Markéta Vojanová, Marek Tome ek	Z,ZK	3	0P+4C+10B		Р

Characteristics of the courses of this group of Study Plan: Code=4.S.BBEZ 17/18 Name=4.sem.BEZ bak.prez.(od)17/18

11MSP	Modeling of Systems and Processes	Z,ZK	4
System and subsystem	, external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of dif	ferential and differe	ential equations.
Linear and nonlinear sy	stem, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer functio	n. Stability of LTI s	ystems.
Discretization of contin	uous systems. System interconnection.		
18KAD	Kinematics and Dynamics	Z,ZK	4
Motion along a line, mo	tion along a curve. Kinematics of rigid plane, kinematics of rigid body. Point mass kinematics, system of point masses. Point m	ass dynamics and	system of point
masses, equation of m	otion. Method of Newton. Princle of D'Alembert. Free and forced vibration with one degree of freedom. Viscous damping. Impa	act theory. Introduc	tion to the
solution of vibration wit	h multiple degrees of freedom.		
11LP	Linear Programming	KZ	3
Formulation of the prob	lem of linear programming, transcription of some practical problems to the linear programming problems. Simplex and convex	c polyedra. Simplex	method, basic
solutions, duality princi	ple in linear programming, stability of solution of linear programming problem. Traffic problem.		
14OJEM	Object Modelling	KZ	3
Programming and mod	elling, method and attribute, object and encapsulation, class, inheritance, polymorphism, perzistence, preconditions, postcondit	ions, consistence o	hecks, abstract
classess, design patter	ns, annotations, C++, Java, Eifel, UML and others object oriented languages and tools.		
23BER	Safety and Ergonomical Solutions in Transport	KZ	3
Safety principles in tran	sport and ergonomy. Basics of human-machine interface (HMI). Vehicle design from passengers safety point of view. Evaluat	ion of safety criteri	a and vehicle
parameters.			
23PSOB	Psychology and Sociology in the Security	Z	2
The role of sociology ar	d psychology as a discipline in the discourse of security. Security of information in cyberspace from the perspective of social psy	chology. Application	n of sociological
and psychological metl	nodology in communication security in cyberspace.		
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 sk	ills. Elementary
stylistics forms. Oral ar	d written presentation of original research. Academic text principles and reading comprehension. Principles of rhetoric.		

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-BBEZ 17/18

Name of the group: PVP bak.prez.BEZ 17/18

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
17Y1AF	Alternative Forms of Transportation Project Financing	KZ	2	2+0	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
20Y1AE	Applied Electronics Vít Fábera, Tomáš Musil Vít Fábera (Gar.)	KZ	2	2P+0C	Z	PV

an Kr ál ork Safety and Health Protection in Transportation a Rezlerová, Petr Musil ometric Methods	KZ KZ	2	2P+0C	L	PV
	KZ	2	 		
		_	2P+0C	Z	PV
ata and Their Processing for Engineering Fields Needs	KZ	2	2P+0C	Z	PV
story of Art and Society	KZ	2	2+0	Z	PV
story of Railway rtin Jacura, Eva Rezlerová	KZ	2	2P+0C	L	PV
oject Documentation in Practice	KZ	2	2P+0C	Z	PV
ıblic Sector Economy	KZ	2	2P+0C	Z	PV
ualification in Electrical Engineering d ich Sadii	KZ	2	2P+0C	L	PV
nergy Requirements of Vehicles oslav Opava	KZ	2	2P+0C	L	PV
nvironmental Aspects of Transport	KZ	2	2P+0C	Z	PV
uropean Integration within Historical Context a Rezlerová, Jan Feit	KZ	2	2P+0C	Z	PV
perimental Methods in Mechanics niel Kytý, Ján Kopa ka	KZ	2	2P+0C	Z	PV
actors Affecting the Rate of Accidents in Aviation	KZ	2	2+0	Z	PV
ench Area Studies and Transportation a Rezlerová, Irena Veselková	KZ	2	2P+0C	L	PV
omputer Hardware	KZ	2	2P+0C	L	PV
story of Civil Aviation a Rezlerová, Jakub Kraus, Vladimír Plos	KZ	2	2P+0C	L,Z	PV
story of City Mass Transport	KZ	2	2P+0C	Z	PV
a Režlerová, Jan Feit, Milan Dont affic Noise or Ládyš	KZ	2	2P+0C	L	PV
ork Hygiene and Ergonomics in Traffic a Rezlerová, Jan Feit, Petr Musil	KZ	2	2P+0C	Z	PV
teractive simulators and simulations	KZ	2	2P+0C	L	PV
ombined Transportation	KZ	2	2P+0C	Z	PV
	KZ	2	2P+0C	L	PV
erobatics	KZ	2	2+0	L	PV
adio Technology in Aviation	KZ	2	2+0	L	PV
ogistics of Passenger and Freight Air Transport	KZ	2	2P+0C	L	PV
ocation and Navigation	KZ	2	2P+0C	L	PV
anagerial Ethics	KZ	2	2+0	Z	PV
arketing in Transportation tra Skolilová	KZ	2	2P+0C	Z	PV
athematical Models in Economy	KZ	2	2P+0C	Z	PV
ngineering Materials	KZ	2	2P+0C	L	PV
odeling Complex Assemblies and Models in Parametric odeller	KZ	2	2P+0C	Z	PV
erman in the Economy and Society	KZ	2	2P+0C	Z	PV
ecurity of Air Transport	KZ	2	2+0	L	PV
otection of Critical Objects and Infrastructures	KZ	2	2P+0C	L	PV
re Collection and Information Systems	KZ	2	2P+0C	L	PV
	KZ	2	2P+0C	Z	PV
ersonal Finance	KZ	2	2P+0C	Z	PV
rametrical and Multicriterial Programming	KZ	2	2P+0C	Z	PV
ersonnel Management	KZ	2	2P+0C	L	PV
	K7	2	2P+0C	L	PV
	NZ	_			
omputer Graphics	KZ KZ	2	2P+0C	L	PV
nis Liutov			2P+0C 2P+0C	L Z	PV PV
adi ogi ogi opi an arl tra od od err or o	io Technology in Aviation istics of Passenger and Freight Air Transport Skolilová ation and Navigation Bureš agerial Ethics keting in Transportation Skolilová hematical Models in Economy ineering Materials lav Valach leling Complex Assemblies and Models in Parametric leller man in the Economy and Society Rezlerová, Jan Feit urity of Air Transport lection of Critical Objects and Infrastructures ok e Collection and Information Systems is Horaž ovský, Milan Sliacky rating System sonal Finance ametrical and Multicriterial Programming Vraštilová Olga Vraštilová (Gar.) sonnel Management	batics	batics KZ 2 io Technology in Aviation KZ 2 istics of Passenger and Freight Air Transport KZ 2 Skolilová KZ 2 agerial Ethics KZ 2 agerial Ethics KZ 2 keting in Transportation Skolilová KZ 2 ineering Materials KZ 2 leling Complex Assemblies and Models in Parametric leller KZ 2 leling Complex Assemblies and Models in Parametric KZ 2 aurity of Air Transport KZ 2 cection of Critical Objects and Infrastructures ok thoraz ovský, Milan Sliacky rating System KZ 2 ametrical and Multicriterial Programming KZ 2 ametrical and Multicriterial Programming KZ 2 ametrical and Management KZ 2 ametrical and Cycling Transport KZ 2	batics io Technology in Aviation istics of Passenger and Freight Air Transport Skolilová ation and Navigation Bureš agerial Ethics keting in Transportation Skolilová hematical Models in Economy ineering Materials lav Valach leller man in the Economy and Society Rezlerová, Jan Feit lection of Critical Objects and Infrastructures ok Collection and Information Systems KZ 2 2P+0C Rezlerová, Jan Information Systems Rezlerová, Jan Feit Rezlero	Dibatics KZ 2 2+0 L

I4Y1PI	Tomáš Brandejský Tomáš Brandejský (Gar.)	KZ	2	2P+0C	Z	PV
4Y1PZ	Advanced Data Processing in Spreadsheets	KZ	2	2P+0C	Z	PV
2Y1PD	Assessment of Transport Structures Kristýna Neubergová	KZ	2	2P+0C	Z	PV
0Y1PK	Product Quality Management Processes Martin Leso Martin Leso (Gar.)	KZ	2	2P+0C	Z	PV
4Y1PJ	C Programming Language Vít Fábera Vít Fábera (Gar.)	KZ	2	2P+0C	Z	PV
2Y1C1	Designing Roads in Civil 3D I Tomáš Honc	KZ	2	2P+0C	L	PV
2Y1C2	Designing Roads in Civil 3D II Tomáš Honc	KZ	2	2P+0C	Z	PV
4Y1PA	3D Modeling in AutoCAD	KZ	2	2P+0C	Z	PV
6Y1PV	Operation, Construction and Maintenance of Vehicles	KZ	2	2P+0C	L	PV
2Y1PU	Organization Disposition of Railway Stations Martin Jacura	KZ	2	2P+0C	L	PV
6Y1RE	Control and Electronic Vehicle Systems Josef Mík, P emysl Toman, Ji í First	KZ	2	2P+0C	Z	PV
1Y1RZ	Human Resources Management	KZ	2	2P+0C	L	PV
7Y1ST	Titan Simulation	KZ	2	2P+0C	L	PV
0Y1SC	Sensors and Actuators Pavel Hrubeš	KZ	2	2P+0C	L	PV
1Y1SI	Transportation Software Engineering Martin P ni ka Martin P ni ka (Gar.)	KZ	2	2P+0C	Z	PV
2Y1SZ	Forensic Expertise	KZ	2	2P+0C	L	PV
6Y1KS	Quality and Reliability of Vehicles	KZ	2	2P+0C	Z	PV
2Y1SU	Road Management and Maintenance	KZ	2	2P+0C	L	PV
1Y1TH	Aircraft Technical Handling Peter Olexa, Jakub Kraus, Slobodan Stoji	KZ	2	2P+0C	Z	PV
1Y1TG	Graph Theory Lucie Kárná Lucie Kárná	KZ	2	2P+0C	L	PV
4Y1TI	Creating Interactive Internet Applications	KZ	2	2P+0C	L	PV
1Y1UT	Airports Maintenance	KZ	2	2+0	L	PV
4Y1UP	Editing of Theses in MS Word	KZ	2	2P+0C	L	PV
BY1UK	Introduction of Rail Vehicles Josef Kolá	KZ	2	2P+0C	L	PV
2Y1VC	Waterways and Shipping	KZ	2	2P+0C	Z	PV
3Y1VS	Negotiation and Cooperation Milena Macková	KZ	2	2P+0C	Z	PV
4Y1VM	Development of Applications for Mobile Devices	KZ	2	2P+0C	Z	PV
6Y1VT	Development in Railroad Vehicles Jaroslav Opava	KZ	2	2P+0C	L	PV
4Y1W1	Webdesign 1	KZ	2	2P+0C	Z	PV
4Y1W2	Webdesign 2	KZ	2	2P+0C	L	PV
6Y1ZG	Introduction into Applied Computer Graphics Adam Orlický, Stanislav Novotný, Ond ej Piksa	KZ	2	2P+0C	L	PV
4Y1ZM	Fundamentals of parametric and adaptive modeling	KZ	2	2P+0C	L	PV
1Y1ZM	Foundation of MATLAB Programming Pavla Pecherková	KZ	2	2P+0C	L	PV
2Y1ZU	Principles of Urbanism Karel Hájek	KZ	2	2P+0C	Z	PV
6Y1ZL	Vehicle Testing, Legislation and Construction	KZ	2	2P+0C	Z	PV
aracteristics o	of the courses of this group of Study Plan: Code=Y1-BBEZ 17/18	Name=PVP bal	c.prez.B	EZ 17/18		
7Y1AF	Alternative Forms of Transportation Project Financing				Σ	2

Corporate Information System

14Y1PI

Characteristics of the courses of this group of Study Plan: Code=Y1-BBEZ 17/18 Name=PVP bak.prez.BEZ 17/18

17Y1AF Alternative Forms of Transportation Project Financing
There will be specifed such forms of financing in transportation, where the public sector body perform the final debtor, i. e. debtor payments come from its budget, but the final debtor is not a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of securities as an alternative source of transportation project.

18Y1AM Anatomy, Mobility and Safety of Man KZ 2

Survey of tissues. Anatomical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circulation and nervous system. Structure and biomechanics of muscular-skeletal system. Injury of human organs and musculo-skeletal system during traffic accidents. Mobility of ill and injured man and his treatment. Human joint prostheses. Protective means and traffic safety regulations.

14Y1AV Animation and Visualization KZ 2

Advanced modifications and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and Space Warp objects. Atmospheric and other effects, rendering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animation using Inverse Kinematics.

20Y1AE	Applied Electronics	KZ	2
	inductor components, their principles, characteristics and typical connection diagrams. Semiconductor PN junction diodes, tra ates. Functions of basic electronic circuits and methods for their designs (rectifiers, voltage regulator with Zener diode, transi	=	-
	ates. Functions of basic electronic circuits and methods for their designs (rectiliers, voltage regulator with Zener diode, transi- g and noninverting amplifier).	stor as an ampline	er, operational
14Y1BE	Barrierless Transport	KZ	2
	accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Stude		etical knowledge
of barrierless environme	ent roads, railway stations, public transport stops, terminal buildings, vehicles, public transport, information and orientation syste	ems and transporta	ation technology.
	will be supplemented by practical examples.		
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 ne and foreign business trips, statistics, working practice.	i. Health protection	n programmes,
14Y1BM	Biometric Methods	KZ	2
	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, behavior		_
in transport applications	s, safety and risks of biometric technologies.		
23Y1DZ	Data and Their Processing for Engineering Fields Needs	KZ	2
	erms, data collection, data sets, data random uncertainty and data epistemic uncertainty, data processing, hazard, risk, value	e scales, analytica	I, empirical and
	ard determination and risk determination, methods for variants' creation, decision support systems.	1/7	
15Y1DU History of art - definition	History of Art and Society s, terminology, division into periods. Architecture, fine arts, design. Situation in Central Europe, today in the Czech Republic.	Stations bridges	2 industrial
buildings. Design of tran		. Otationo, briagoo	, irradotriai
15Y1DZ	History of Railway	KZ	2
	steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Re	epublic", electric tr	action, World
• • •	development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train conn	ections, railway lin	es construction,
	ay junctions. Excursions and projections.		
12Y1DS	Project Documentation in Practice	KZ	2
creation of some project	creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining proces	ss. Budget and pri	cing. Practical
17Y1EV	Public Sector Economy	KZ	2
	theory of public sector, public choice theory, externalites, decisions about public finance allocation, economic assessment of		
	ate budget, management of public projects a their economic efficiency assessment, way of elaboration of PPP projects, fundin		-
20Y1EK	Qualification in Electrical Engineering	KZ	2
-	th measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock haza	-	-
-	ved currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legisl	lation, standards a	and regulations
	safety and electrical engineering.	V7	
16Y1EN Dynamics and the driving	Energy Requirements of Vehicles g inertial of the vehicles. Types of energy - kinetic, static, heat, chemical and others. Ways of energy change into kinetic ene	ray Combustion e	2 naine electric
•		igy. Combaction o	rigirio, didottio
	engine. Energy accumulation means, accumulator, flywheel, fuel cell. Energy recuperation. WTW analysis.		
<u>_</u>	engine. Energy accumulation means, accumulator, flywheel, fuel cell. Energy recuperation. WTW analysis. Environmental Aspects of Transport	KZ	2
20Y1EA	engine. Energy accumulation means, accumulator, flywheel, fuel cell. Energy recuperation. WTW analysis. Environmental Aspects of Transport e, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabili		-
20Y1EA State of the atmosphere Air quality, main pollutar	Environmental Aspects of Transport e, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilints and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transp	istic forecasts, fore ortation in climate	ecast evaluation.
20Y1EA State of the atmosphere Air quality, main pollutar 15Y1EH	Environmental Aspects of Transport e, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilints and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transperson integration within Historical Context	istic forecasts, fore	ecast evaluation. change.
20Y1EA State of the atmosphere Air quality, main polluta 15Y1EH Versailles system, form	Environmental Aspects of Transport e, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilints and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transperupean Integration within Historical Context ation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism	istic forecasts, forecortation in climate KZ Little Entente, its	ecast evaluation. e change. 2 s principles and
20Y1EA State of the atmosphere Air quality, main polluta 15Y1EH Versailles system, form goals. Europe after Hitle	Environmental Aspects of Transport e, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilints and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transportation within Historical Context ation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communismer's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and	istic forecasts, forecortation in climate KZ Little Entente, its	ecast evaluation. e change. 2 s principles and
20Y1EA State of the atmosphere Air quality, main polluta 15Y1EH Versailles system, form goals. Europe after Hitle New quality of French-C	Environmental Aspects of Transport e, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilints and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transpecturopean Integration within Historical Context ation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communismer's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and German relationship - a driving power of starting European integration.	istic forecasts, fore ortation in climate KZ Little Entente, its dits consequence	ecast evaluation. e change. 2 s principles and s for Europe.
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20Y1EA State of the atmosphere Air quality, main polluta 15Y1EH Versailles system, form goals. Europe after Hitle New quality of French-O 18Y1EM The purpose and role of experimental procedure Instrumented hardness 21Y1FN Introduction. The scope and interpretation of ICA reports. 15Y1FD France - geography and French society and cult 14Y1HW Computer architecture, arithmetic and logical u 15Y1HL Beginnings of flying, de World airports. Famous aviation. Modern era of 15Y1HD History of city mass tract clearance systems. Hist 12Y1HD	Environmental Aspects of Transport e, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilish and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transper turn of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism or spetting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and German relationship - a driving power of starting European integration. Experimental Methods in Mechanics fexperimental mechanics. Sensors for mechanical testing. Overview of experimental methods. Destructive and non-destructive sand sample preparation. Tensile and bending tests. Electrical resistance strain gages. Optical based strain measurement. Feactors Affecting the Rate of Accidents in Aviation of international and national organizations in civil aviation. The scope of the investigation organisations within the state and in AO Annexes 13 and 19. Analysis and interpretation of the Regulation (EC), Regulation (EU). Human factor. Utilization of informational regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air travec. Current political system. System of education, studying in France. Selected authors of French literature. French gastrono Computer Hardware basics of logical circuits design and their realization using FPGA. In detail, description of computer architecture and separate inits, I/O subsystem. History of Civil Aviation velopment of aircrafts lighter than air. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of aviators. Helicopters. CSA airplanes. Development of aircrafts in Czechoslovakia between the years 1945-1989. Classic era civil aviation. Airline companies. Supersonic flying. History of Civy Mass Transport Insport in the world, development of tram, bus and	istic forecasts, forecortation in climate KZ in Little Entente, its disconsequence KZ ive testing of mate atigue and lifetime KZ international comment of from the in KZ affic, specialised to my. KZ affic specialised to my. KZ	ecast evaluation. e change. 2 s principles and s for Europe. 2 drials. Design of e prediction. 2 drials. Analysis nvestigation 2 erminology. 2 controllers, 2 ezech Republic. n era of civil 2 ents of tariff and 2
20Y1EA State of the atmosphere Air quality, main pollutar 15Y1EH Versailles system, form goals. Europe after Hitle New quality of French-O 18Y1EM The purpose and role of experimental procedure Instrumented hardness 21Y1FN Introduction. The scope and interpretation of ICA reports. 15Y1FD France - geography and French society and cultar 14Y1HW Computer architecture, arithmetic and logical un 15Y1HL Beginnings of flying, de World airports. Famous aviation. Modern era of 15Y1HD History of city mass tranclearance systems. Hist 12Y1HD Acoustic introduction, b	Environmental Aspects of Transport a, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilints and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transp European Integration within Historical Context ation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism ar's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and serman relationship - a driving power of starting European integration. Experimental Methods in Mechanics fexperimental Methods in Mechanics fexperimental methods. Destructive and non-destructives and sample preparation. Tensile and bending tests. Electrical resistance strain gages. Optical based strain measurement. Fetsting. Introduction to electron microscopy. Errors in measurement. Factors Affecting the Rate of Accidents in Aviation of international and national organizations in civil aviation. The scope of the investigation organisations within the state and in AO Annexes 13 and 19. Analysis and interpretation of the Regulation (EC), Regulation (EU). Human factor. Utilization of informations, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air traver. Current political system. System of education, studying in France. Selected authors of French literature. French gastrono Computer Hardware basics of logical circuits design and their realization using FPGA. In detail, description of computer architecture and separate inits, I/O subsystem. History of Civil Aviation History of Civil Aviation History of City Mass Transport In the world, development of aircrafts lighter than air. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of aircrafts lighter than air. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Deve	istic forecasts, forecortation in climate KZ in Little Entente, its disconsequence KZ ive testing of mate atigue and lifetime KZ international comment of from the in KZ affic, specialised to my. KZ e parts designing - KZ of airports in the Cof aviation. Golder KZ ids and development KZ ids and development KZ ids and development KZ ids and comment KZ ids and development KZ ids and comment KZ ids and development KZ ids and comment KZ ids and c	ecast evaluation. e change. 2 s principles and s for Europe. 2 drials. Design of e prediction. 2 drittees. Analysis exestigation 2 erminology. 2 controllers, 2 exect Republic. era of civil 2 ents of tariff and 2 dustic climate in
20Y1EA State of the atmosphere Air quality, main pollutar 15Y1EH Versailles system, form goals. Europe after Hitle New quality of French-O 18Y1EM The purpose and role of experimental procedure Instrumented hardness 21Y1FN Introduction. The scope and interpretation of ICA reports. 15Y1FD France - geography and French society and cultar 14Y1HW Computer architecture, arithmetic and logical under the society and cultar 15Y1HL Beginnings of flying, de World airports. Famous aviation. Modern era of 15Y1HD History of city mass transclearance systems. Hist 12Y1HD Acoustic introduction, but area, principles of urbar	Environmental Aspects of Transport e, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilish and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transper turn of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism or spetting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and German relationship - a driving power of starting European integration. Experimental Methods in Mechanics fexperimental mechanics. Sensors for mechanical testing. Overview of experimental methods. Destructive and non-destructive sand sample preparation. Tensile and bending tests. Electrical resistance strain gages. Optical based strain measurement. Feactors Affecting the Rate of Accidents in Aviation of international and national organizations in civil aviation. The scope of the investigation organisations within the state and in AO Annexes 13 and 19. Analysis and interpretation of the Regulation (EC), Regulation (EU). Human factor. Utilization of informational regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air travec. Current political system. System of education, studying in France. Selected authors of French literature. French gastrono Computer Hardware basics of logical circuits design and their realization using FPGA. In detail, description of computer architecture and separate inits, I/O subsystem. History of Civil Aviation velopment of aircrafts lighter than air. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of aviators. Helicopters. CSA airplanes. Development of aircrafts in Czechoslovakia between the years 1945-1989. Classic era civil aviation. Airline companies. Supersonic flying. History of Civy Mass Transport Insport in the world, development of tram, bus and	istic forecasts, forecortation in climate KZ in Little Entente, its disconsequence KZ ive testing of mate atigue and lifetime KZ international comment of from the in KZ affic, specialised to my. KZ e parts designing - KZ of airports in the Cof aviation. Golder KZ ids and development KZ ids and development KZ ids and development KZ ids and comment KZ ids and development KZ ids and comment KZ ids and development KZ ids and comment KZ ids and c	ecast evaluation. e change. 2 s principles and s for Europe. 2 drials. Design of e prediction. 2 drittees. Analysis exertinology. 2 erminology. 2 econtrollers, 2 exert Republic. era of civil 2 ents of tariff and 2 pustic climate in

15Y1HE	Work Hygiene and Ergonomics in Traffic	KZ	2
-	cupational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of these and the influence of the second strangers and the influence of the seco		
	n of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technology t m the field of transportation; relevant legislature.	o possibilities and	skills of a man.
16Y1IS	Interactive simulators and simulations	KZ	2
Simulation theory and	application of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical n	1	methods.
	ynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation software and interactive simulation software and interactive simulation.		
12Y1KN	Combined Transportation	KZ	2
	rategy and legislation. Load units. Means of transport in combined transport. Combined transport systems. Transshipping area	, 	
23Y1KO Ground of quantum ph	Quantum Physics and Optoelectronics ysics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics components.	KZ	2
21Y1LA	Aerobatics	KZ	2
	erobatic figures. Aerodynamics and flight mechanics of aerobatic figures. Aerobatic training syllabi and aerobatic competitions	1	
Safety in aerobatics, a	ccidents related to aerobatics. Physiological aspects of flying aerobatics. Aircraft structure loads and construction fatigue stre	ngth of aerobatic a	ircraft. Upset
	T) for commercial pilots and related accidents.		
21Y1LR	Radio Technology in Aviation	KZ	2 Waya rangaa
=	e wave spectrum. Analog and digital modulations. Noises. Filters. Resonance circuits. Electromagnetic field. Electromagnetic vand reception of electromagnetic field. Antennas in aviation, receivers and transmitters.	wave propagation.	wave ranges
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	1	
air cargo. Information s	systems in air transport. Global distribution systems.		
20Y1LN	Location and Navigation	KZ	2
	oles of road networks, localization on the network. Routing algorithms, their properties and implementation. Description and experting algorithms, their properties and implementation.	xamples of datase	ts for finding
21Y1MZ	routing algorithms, their properties and implementation. Managerial Ethics	KZ	2
	of managerial ethics. Basics of etiquette and rules of social contact. Social events. Etiquette of working contacts. The art of pres	1 1	_
• • • • • • • • • • • • • • • • • • • •	ocol. Managerial ethics. Business ethics.	5	
17Y1MD	Marketing in Transportation	KZ	2
	narketing applied to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transpo	rt and the resulting	g differences in
the application of mark		1/7	
11Y1MM The goal of the course	Mathematical Models in Economy is to teach selected methods of linear programming, with theoretical procedures applicable for individual tasks and their programming.	KZ	2 on The outcom
	lity to implement and solve basic tasks from the queue theory, graph theory and both free and constrained optimization.	,ram implementatio	Jii. The outcom
18Y1MT	Engineering Materials	KZ	2
Systematic overview of	main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers	and composites, a	attention is paid
-	and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's selection		
14Y1MP	Modeling Complex Assemblies and Models in Parametric Modeller	KZ	2
	ing - 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.	and distribu	mon lines.
15Y1NE	German in the Economy and Society	KZ	2
	social issues of German speaking countries and of the EU. Reading and listening of texts. Lexical, grammatical and semantic	1	
selected topics.			
21Y1OL	Security of Air Transport	KZ	2
•	ril aviation. Definitions and regulations. History of acts of unlawful interference. Terrorism in aviation. National security progran Il procedures. Modern means of protection and control.	n. Crisis managem	ent. Protection
23Y10K	Protection of Critical Objects and Infrastructures	KZ	2
	systems, critical item, risks and their courses, criticality, vulnerability, connectivity, dependability, resilience, failure, protection,	1	
infrastructures.			
20Y1OI	Fare Collection and Information Systems	KZ	2
•	s in public transport and their components (on-board units, validators, turnstiles,). Information systems and their componer	,	ables, maps,
· · · · · · · · · · · · · · · · · · ·	rs (cycles, location or current delay of vehicles,). The issue of tariff systems. Other examples of clearance systems (parking	,	2
14Y10P Distributions Installation	Operating System On GNU/Linux OS. X-window system. Rights management - users and groups, ACL rights. Filesystems and attributes. Program	KZ	2 s OS boot
	e programs / commands. Config files. SW management, package systems. Programs in graphic shell - text, spreadsheet, gra	•	
communication. Service	es management. Safe and secure configuration of OS. Remote administration.		
17Y1OF	Personal Finance	KZ	2
· -	jet, financing of basic living needs), debt (loans and credits, payment instruments, interest and fees, debt trap), financing of h		
(retirement savings and	ncing), savings and investments (investment horizon, return, risk, investment strategy), insurance (insurance types, suitability and insurance)	and adequacy), se	curing the luture
11Y1PV	Parametrical and Multicriterial Programming	KZ	2
	of linear programming with a parameter in objective function, on right sides and in the matrix of coeficients of linear constraints	1 1	_
17Y1PM	Personnel Management	KZ	2
	group, man as personality, planning, choice, evaluation and education of human sources, work adaptation, teamwork, intercu	1	
12Y1PC	Pedestrian and Cycling Transport	KZ	2
•	Pedestrian crossings. Modifications for blind, dim-sighted and disabled people. Design of cycle routes network. Ways of cycle routes from other transport modes. Cycle tracks and its design - one way streets, reserved traffic lanes, but stops crossing.		
	of cyclists from other transport modes. Cycle tracks and its design - one way streets, reserved traffic lanes, bus stops, crossi s and road marking for cyclists.	ngo with other traf	aport moues,
14Y1PG	Computer Graphics	KZ	2
	ic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with editing and mutual conversion.		
Javal agang) wain - !	ro DDI colors Paging of digital photography accoming and computer technology like manitage and graphing and re-		

	puter Aid of Transportation Projecting 2	KZ	2
	r transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting,		
section). Basics of 3D modelling	n to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic trans o.	illon curve, cross-	-and longitudinal
<u> </u>	puter Simulations in Mechanics	KZ	2
	s for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model develop	ment and adaptat	tion of geometry
-	gnment of material properties. The types of elements and their use. Discretization of solid model. Boundary conditions	and application o	f the load. Basic
	nalysis. Introduction to complex nonlinear problems.	V7	2
· · · · · · · · · · · · · · · · · · ·	porate Information System omponents of information system, syntatic and semantic sense of data, structure of corporate information system, par	KZ rticular informatio	n system
	age, etc.), corporate information politic and information control, risks of information system operation, legal environmen		-
state information system, inform	mation system security, data protection, safety politics.		
	anced Data Processing in Spreadsheets	KZ	2
	rinciples of working in a spreadsheet. Graphic layout of the table appearance, formatting of numbers, insertion of form orking with large spreadsheets, filters, advanced filters, database functions. Pivot tables and charts, conditional formattin		-
•	uestions from various companies and training.	g, solution illialing	, solver, macros,
	essment of Transport Structures	KZ	2
	ures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibilitie	s of its protection	and assessment
·	dscape. Rating fragmentation and landscape connectivity in the preparation of linear structures. Practical examples of	assessment of tra	affic buildings on
the environment. 20Y1PK Prod	Lust Quality Management Processes	V7	2
	luct Quality Management Processes ion management. Management systems and international standards; quality management systems. Quality products,	KZ processes system	_
• • •	gement, management principles. Principles of process management, monitoring and measurement systems managemer	•	
for systems management. Proc	cess management principles. Metrology and testing. Product certification.		
	ogramming Language	KZ	2
	processor, basics of the C language (data types, syntax, commands), functions, pointes, dynamical memory allocation, s	string, files, struct	ures and unions.
	tat types (FIFO, LIFO, list), programming techniques (sorting, searching, recursion), using bitwise oprerators. gning Roads in Civil 3D I	KZ	2
	affic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go throu		
	the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The	-	-
·	ng design in the real-life profession.		
	gning Roads in Civil 3D II	KZ	2
	affic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go throu the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. Th	-	_
•	ents learn to design intersections.	o proviously doqu	
14Y1PA 3D M	Modeling in AutoCAD	KZ	2
•	deller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup creation, object	ct data creation, v	vork with data
	ase. Basic definition of work with lights, materials and reflexes. Models presentation.		
	ration, Construction and Maintenance of Vehicles	KZ	2
General principles of engine dia	Vehicle maintenance. Vehicle diagnostics. Maintenence and repair plans. Engine maintenance and emission measure agnostics.	ment. nansmissi	on mechanism.
<u> </u>	anization Disposition of Railway Stations	KZ	2
, ,	transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zo		
	of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic railway n		
	trol and Electronic Vehicle Systems	KZ	2
	iion. Tools for analytical solution, linear system description. Basic types of a regulator (PID), properties, advantages, disa ic drive. Vehicle communication bus (CAN, LIN, FlexRay, ISObus, KWP2000 protocole etc.). Vehicle electronic control,	-	
comfort systems.	to drive. Venicle communication bus (OAN, Lin, Flexitay, 100bus, twi 2000 protocole etc.). Venicle electronic control,	Salety, communic	cation and
	an Resources Management	KZ	2
The position of human resource	es in the organization and related disciplines file. Substance, importance and challenges of human resources manage	ment. Internal an	d external
	e management. Human resource planning. Search, recruitment and selection of employees. Motivation, evaluation and	remuneration of s	staff. Positioning,
	employees. Education of employees. Planning career management.	1/7	
	n Simulation simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same produ	KZ uct. Students set a	2 a price and
= =	pacity of production, plan budgets for marketing, research and development. They become familiar with the consequen		· ·
of financial corporate reports a	nd they use this information for other business decisions.		
20Y1SC Sens	sors and Actuators	KZ	2
	tors. Basics of measuring theory and actuating influence. The respective technologies and construction principles. Sensor	s of mechanical, e	electro-magnetic,
	chemical and particle flow values. Electrical, pneumatic and hydraulic actuators and solid phase elements.	V7	2
· ·	sportation Software Engineering ineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and impler	KZ mentation using fo	2 ormal techniques
and practical usuage.		g	
22Y1SZ Forei	nsic Expertise	KZ	2
Historical evolution of forensic	engineering, forensic activity, current legislature in the Czech Republic, different disciplines, notion of forensic, forensic	c legislation, basi	
- ·	ofs, forensic methodology. Notion of the evidence, general principles of evidence obtaining, metrology, protocol, evidence obtaining, evidence obtai	nces collection, si	ite inspection,
forensic report, elements. Findi 16Y1KS Qual		KZ	2
I '	lity and Reliability of Vehicles design, development, production and operation of vehicles. Definition and possible approach to quality and reliability.		
	FD (Quality Function Deployment), DFx (Design for Assamly, Manufacturying, Quality, Services) and other methods		·
Knowledge-based systems of o	quality and reliability, data collection.		

12Y1SU Road Management and Maintenance	KZ	2
Getting familiar with ownership of roads in the Czech Republic and the administration of the road at the state and county level. It is presented dev	elopment of road net	work, short,
medium and long-term strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and	d repair methods are	discussed in the
classroom as well as investment activity in highway engineering.	1/7	
21Y1TH Aircraft 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 passangers onboarding and offboarding. Operational processes of aircraft technical handling and regulations. Modernization and technical progr		ment for
	KZ	2
11Y1TG Graph Theory Basic concepts and terminology of graph theory, graph representation. Problems of graph theory, problem instance. Graph search algorithms, tre	1 1	_
path problem, Eulerian path, bipartite graph matching, flow networks, circulations, critical path method, traveling salesman problem. Problem of exist		-
for their solving. Computational complexity, dealing with NP-complete problems, heuristic approach.	,	
14Y1TI Creating Interactive Internet Applications	KZ	2
Possibilities of scripting language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions.	ns. Your own applicati	on programmed
in PHP language.		
21Y1UT Airports Maintenance	KZ	2
Summer airport maintenance. Summer maintenance equipment. Winter airport maintenance. Winter maintenance equipment. De-icing / anti-icing	of aircraft. De-icing /	anti-icing liquid.
Operating procedures, limitations, practices.		
14Y1UP Editing of Theses in MS Word	KZ	2
Students will be introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, figures, tables, graphs, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seam		
so that they are able to concentrate mainly on writing a thesis.	less editing dissertation	ons and meses,
18Y1UK Introduction of Rail Vehicles	KZ	2
Basic characteristics and parameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of mot	1	
track resistance. Total running resistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehicle.		- 1
and electric drive. Design concept rail vehicles and drive of wheel set.		
12Y1VC Waterways and Shipping	KZ	2
Basic modes of transport. The position of water transport in the transport system of the Czech Republic and the EU. Advantages and disadvantages	ges of water transport	t. Basic systems
of waterways in Europe, a network of waterways in the Czech Republic. Construction of the waterway and its equipment. Management of waterway	ys and its operation. T	The legal regime
in inland navigation, navigation rules of operation, navigation maps.	1/7	
23Y1VS Negotiation and Cooperation	KZ	2
Code of conduct for negotiation. The influence of personality traits on the negotiations. Negotiation and commanding. Teamwork. Variants teams. Principles of negotiation, the essence of negotiation, the differences in negotiation in business and in crisis situations, the principle of "win both",		
trust.	specifications and bid	iding, the role of
14Y1VM Development of Applications for Mobile Devices	KZ	2
Object oriented programming, Java programming language, development environment, operating system Android, development application - wid	gets, containers, thre	ads, menu,
permissions, services, GUI.		
16Y1VT Development in Railroad Vehicles	KZ	2
Railroad vehicles traction. Railroad vehicle parametres regulation. Control and driving of railroad vehicles. Importance in heavy duty and personal	I transportation. Critic	al situation
assesment. New materials in design. International standardization.		
14Y1W1 Webdesign 1	KZ	2
Students will learn the basics of communication HTTP, URL and addressing, markup languages HTML and XHTML, HTML tags, rules of web accessed earliers, the insure of web browness greating one to three column level to page, gitter validation, conditional comments. Topics will be practic		
and selectors, the issue of web browsers, creating one to three column layout pages, sites validation, conditional comments. Topics will be practice 14Y1W2 Webdesign 2		2
Students will learn advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, v	KZ web server installation	
directives. Topics will be practiced on practical examples.	vob doi voi inotaliation	i i comiguration
16Y1ZG Introduction into Applied Computer Graphics	KZ	2
Computer graphics, division and applications with emphasis on transport, including development and research. Colours, colour perception, colou		
and 3D generation, elementary algorithms for graphic data workout. Visualisation principles and tasks, technics, graphics and visualisation HW b	asics. Introduction to	2D and 3D
graphics software.		
14Y1ZM Fundamentals of parametric and adaptive modeling	KZ	2
Basics of work at products and parts creation. Sketch drawing by help of geometric relations, parametric dimensions, creation of adaptive models	from 2D sketches. Im	nport and export
from and to another systems. Fundamentals of assemblies creation.	1/7	
11Y1ZM Foundation of MATLAB Programming To explain the principle of algorithmization, flow charts, description of MATLAB environment and its settings, MATLAB help, mathematical operator	KZ KZ	2
to explain the principle of algorithmization, flow charts, description of MALLAB environment and its settings, MALLAB nelp, mathematical operator control flow, inputs and outputs, graphics, optimization and program code debugging.	.s, mainces and elem	ents operations,
12Y1ZU Principles of Urbanism	KZ	2
Survey on history of city and settlement building. Functional components and their mutual relations (working, living, recreation, transportation). S		
Types of towns or cities with a certain prevailing function, forms of their development. Brief overview of land-use planning.	. 5.	

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.

ΚZ

2

16Y1ZL

Vehicle Testing, Legislation and Construction

List of courses of this pass:

11CAL Calculus 1 11CAL Calculus 1 11CAL Calculus 1 11CAL Calculus 1 11CAL Calculus 2 Calculus 3 Calculus 2 Calculus 3 Calculus 2 Calculus 3 Calculus 2 Calculus 3 Calculus 4 Calculus 3 Calculus 4 Calculus 3 Calculus 4 Calculus 3 Calculus 4 Calculus 5 Calculus 6 Calculus 7 Calculus 6 Calculus 7 Ca	Code	Name of the course	Completion	Credits
TICAL Z Calculus 2 Ca	11CAL1	Calculus 1	Z,ZK	7
Antothiratives, Networkins integral, Remains integral of the function of non-variable, improper Remains integral. Remains integral of the function of non-variable, improper Remains integral on the Parameter Coestribution of applications of the first cortex. International surfaces in Riv, Riemannian integral or one regular surfaces. Like and surface integrals of the second type, Stokes theorems, orders y differential equations with contents understood and systems. All properties and its systems. 11FM Electric field Electric communication of the first contents of the C	Sequence of real n	umbers and its limit. Basic properties of mappings. Function of one real variable, its limit and derivative. Geometric properties of n-dime	ensional Euklidea	n space and
Antidorente, Newtonian integral, Remansian integral of the function of one variable, improper Remansian integral. Ritimating evaluates and exidences in Rit, Ritimatina integral over register surfaces in the function of one variable integral over the second type, Stokes becomes, ordinary differential equations of the first integral over register second type, Stokes becomes, ordinary differential equations of the first integral over the second type, Stokes becomes, ordinary differential equations of the first integral over the second type, Stokes and Stokes and Stokes. Beside in stole-state physics. 11FV1	Cartesia	in coordinate system. Geometric meaning of the differential of functions several real variables, differential calculus of functions of several real variables.	eral real variables	
Reformational surfaces in Rn, Remaintain integral over regular surfaces. Like and surface integrals of the sectord plays, Stokes theorems, ordinary differential equations of the first order. Internal differential equations with constant collisions and its systems. 11	11CAL2	Calculus 2	Z,ZK	5
ITEMO Electromagnetic Field and Oppics Z,ZK 4 Electromagnetic Field and Oppics S Electromagnetic Field and Oppics S Electromagnetic Field and Oppics S ITEM S Electromagnetic Field Physics 1 ITEM S Electromagnetic Field Physics 1 Physics 1 Field S Electromagnetic Field Physics 1 Field S Electromagnetic Field Physics 2 Field S Electromagnetic Field Physics 3 Field S Electromagnetic Field Physics 4 Field S Fie	Antiderivative, No	wtonian integral, Riemannian integral of the function of one variable, improper Riemannian integral, Riemannian integral in Rn. Parar	metric description	of regular
Electromagnetic Field and Optics Electromagnetic Field and Optics Electromagnetic Field and Optics Electromagnetic Electromagnetic Moderate physics Z,ZK 4	k-dimensional su	faces in Rn, Riemannian integral over regular surfaces. Line and surface integrals of the second type, Stokes theorems, ordinary diffe	erential equations	of the first
Electric Field. Electric current. Negretics for 15 Physics 1 11FY1 Physics 1 Physics 1 Remulsic, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermodynamics, electric field, directed electric current. 11GIE Geometry Differential geometry of curves - parameterization, the air of the curve, tostion and curvature, Frener's trihedron. Kinematics - a curve as a trajectory of the motion, the velocity, and scalestance of a particle moring on a curved path. 11LA Longar Algebra 11LB Linear Physics 1 11LP Continuum mechanics, therefore, Kinematics - a curve as a trajectory of the motion, the velocity, and scalestance of a particle moring on a curved path. 11LP Continuum mechanics, therefore, an operation of the programming product. Smillarity of matrices (eigenvalues and deprendents. Systems of linear equations and their actualistic action. 11LP Continuum mechanics, therefore, an operation of the programming product. Smillarity of matrices (eigenvalues and deprendents. Systems and convex polyedra. Simples method, basis continuum of the programming product. Smillarity of matrices (eigenvalues and deprendents. Simples and convex polyedra. Simples method, basis southers, cultility principle in linear programming problems. Simples and convex polyedra. Simples method, basis southers, cultility principle in linear programming problems. Simples and convex polyedra. Simples method, basis southers, cultility principle in linear programming problems. Simples and convex polyedra. Simples method basis southers, cultility problems of linear programming problems. Simples and convex polyedra. Simples method to the linear programming problems. Simples and convex polyedra. Simples method to the linear programming problems. Simples and convex polyedra. Simples method to the linear programming problems. Simples and convex polyedra. Simples method to the linear programming problems. Simples and convex polyedra. Simples and convex polyedra. Simples and convex polyedra. Simples and convex poly		order, linear differential equations with constant coefficients and its systems.		
11STAS Statistics Submission of confinence system, astionary and non-stationary system, actions of producting, making and or of statistics Submission of the project of the control of the control of producting in the control of the control o	11EMO	Electromagnetic Field and Optics	Z,ZK	4
In In In In In In In In		Electric field. Electric current. Magnetic field. Electromagnetic field. Optics. Basics of solid-state physics.		
11 Cit Geometry	11FY1	Physics 1	Z,ZK	4
Differential geometry of curves - parameterization, the and of the curve, brothin and curvature, Frenet's trihedron. Kinematics - a curve as a trajectory of the motion, the velocity, and acceleration to a particle moving on a curved parti. 11.LA Lineat / Algebra Verticor spaces (finear combinations, linear independence, dimension, basis, accordinates). Matrices and operations. Systems of linear equations and their subshilish. Determinants and their applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors), Quadratic forms and their classification. 11.LP Lineat / Programming KZ 3 Formutation of the problem of linear programming in transcription of some practical problems to the linear programming problems. Simplex and convex polyedos. Simplex membranes as solutions, duality principle in linear programming sability of solution of linear programming problems. Trailife problems Simplex and convex polyedos. Simplex method, beas solutions, duality principle in linear programming sability of solution of linear programming problems. Trailife problems. 11.MSP Modeling of Systems and Processes Western and understand system description, continuous and discrete a patern, mathematics as a stock, examples of formutation of differential equations. Linear and nonlinear system, stationary and non-stationary system, causality. Convolutional integral Laplace and 2 transformations. Transfer function. Stability of LTI systems. Discretization of continuous systems. System interconnection. Statistics 11.STAS In System and substance and its description, known distributions, and or an acceleration of production of transformation. Transfer function. Stability of LTI systems. Statistics 11.X31 Project 1 Z 2 11.X33 Project 2 2 2 11.X33 Project 3 Z 2 11.X33 Project 3 Z 2 2 2 11.X33 Project 3 Z 2 2 2 11.X33 Project 3 Z 2 2 2 2 3 2 3 2 3 2 3 2 3 2	Kinen	atics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermodynamics, electric field, directed	l electric current.	,
acceleration of a parallel moving on a curved path. 11LA 11LA Linear Algebra Linear Algebra their applications. Scalar product. Similarly of matrices (eigenvalues and eigenvectors). Quadratic forms and their classification. 11LP Linear Programming Linear Programming Linear Programming problems. Simples and convex plyedra. Simples method basis solidions, duality principle in linear programming, stability of solution of linear programming problem. Taffic problem. 11MSP Modelling of Systems and eProcesses JAZK 4 System and subsystem, external and internal system description, continuous and discrete systems, mathematics as a tod, examples of formulation of differential and differential quadratic. Internal programming and and differential equation. Linear and nonlinear system, stationary and non-stationary system, causally, Convolutional integral. Lipitace and 2 transformations. Transfer function. Stability of LTI systems. Description of probability, random variable and its description, known distributions, andom vector, function of madom variable. Methods of point estimation. Testing of statistical hypothetics Regression and correlation, linear regression, correlation celeficient of determination, the general linear model, statistical inference in linear regression, analysis of variance multiple regression, the use of matrices in regression. 111X31 Project 1 Project 1 Regression for probability, random variable and list description, known distributions, andom vector, function of madom variable. Methods of point estimation. Testing of statistical hypothetics Regression and correlation, linear regression, correlation cellification of probability random variable and list description, known distributions, and make the program linear model, statistical inference in linear regression, and variance regression, correlation and statistical inference in linear regression. 111X31 Project 1 Regression of probability random variable and list description, known distributions, and probability in the program i	11GIE	Geometry	KZ	3
Linear Algebra (vector spaces (linear combinations, linear independence, dimension, basis, coordinates), Martines and operations. Systems of linear equations and their solvebility; Determinants an their applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors), Quedratic forms and their classification. Linear Programming Formulation of the problem of linear programming, transcription of some practical proteins to the linear programming problems. Simplex and convex polyedra. Simplex methods, basis solutions, duality principle in linear programming, stability of solution of linear programming problem. Tarifle problem. 11MSP Modelling of Systems and Processes Modelling of Systems and Processes Note of the Processes System interpretations of continuous and discrete system, mathematics as a tool, examples of formulation of alterential equations. Discretization of continuous systems. System interconnection. 11STAS Institute of the problem of linear programming and interest systems. Discretization of continuous systems. System interconnection. 11STAS Statistics Statistics Statistics Statistics Statistics Linear and provides littly and on variable and its description, known distributions, random vector, function of random variable. Methods of point estimaton. Testing of statistical hypothesis Regression and correlation, linear regression, correlation coefficient, coefficient of determination, the general linear model, statistical inference in linear regression, analysis of evariance multiple regression, and correlation in determination of the correlation in the programming with parameterial models in Economy 11X31 Project 1 Project 2 Project 3 Project 4 Project 4 Project 4 Project 5 Project 5 Project 6 Project 7 Project 7 Project 8 Project 9 Projec	Differential geome	try of curves - parameterization, the arc of the curve, torsion and curvature, Frenet's trihedron. Kinematics - a curve as a trajectory of	the motion, the v	elocity, and
vicetor spaces (linear combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and their classification. 11.LP		acceleration of a particle moving on a curved path.		
their applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classification. 11P	11LA	Linear Algebra	Z,ZK	3
Linear Programming Linear Programming Linear Programming problems Simplex and convex polyedra. Simplex methods basis solutions, duality principle in linear programming, stability of solution of linear programming problems. Traffic problem. Traffic problem. Traffic problems and subsystem, external and internal system description, continuous and discrete systems, mathematics as a tool, examples of formulation of differential equations. Linear and nonlinear system, stationary and non-stationary system, causality. Computitional integral, Laptace and 2 transformations. Transfer function. Stability of LTI systems. Discretization of continuous systems, mathematics as a tool, examples of formulation of differential and differential equations. Linear and nonlinear system, stationary and non-stationary system, causality. Combutional integral, Laptace and 2 transformations. Transfer function. Stability of LTI systems. Discretization of continuous systems, System interacomactions. 11 STAS Statistics Statistics Statistics Statistics Statistics Statistics Statistics Project 1	Vector spaces (line	ar combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and their	r solvability. Deter	ninants and
Formulation of the problem of linear programming, transcription of some practical problems to the linear programming problems. Simplex and convex polyedra. Simplex method, basis solutions, duality principle in linear programming, stability of solution of linear programming problem. Traffic problem. 11MSP		their applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classification	on.	
Formulation of the problem of linear programming, transcription of some practical problems to the linear programming problems. Simplex and convex polyedra. Simplex method, basis solutions, duality principle in linear programming, stability of solution of linear programming problem. Traffic problem. 11MSP	11LP	Linear Programming	KZ	3
11MSP				ethod, basi
System and subsystem, external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of differential equations. Linear and nonlinear system, stationary and non-stationary system, causality, Convolutional integral. Laplace and Z transformations, Transfer function. Stability of LTI systems. Discretization of continuous systems. System interconnection. 11STAS Statistics Z,ZK 5 Definition of probability, random variable and its description, known distributions, random vector, function of random variable. Methods of point estimation. Testing of statistical hypothesis Regression and correlation, linear regression, correlation coefficient, coefficient of determination, the general linear model, statistical inference in linear regression, analysis of variance multiple regression, the use of matrices in regression. 11X31 Project 1 Z 2 11X32 Project 2 Z 2 11X33 Project 3 Z 2 11Y1MM Mathematical procedures applicable for individual tasks and their program implementation. The outcoment of the course is to teach selected methods of linear programming, with theoretical procedures applicable for individual tasks and their program implementation of the course is to teach selected methods of linear programming, with theoretical procedures applicable for individual tasks and their program implementation. The outcoment of the course is to teach selected methods of linear programming, with theoretical procedures applicable for individual tasks and their program implementation. The outcoment of the course is to teach selected methods of linear programming, with theoretical procedures applicable for individual tasks and their program implementation. The outcoment of the course is the ability to implement and solve basic tasks from the queue theory, graph theory and both free and constrained optimization. 11Y1PV Project 3 Transportation Software Engineering 2alsic concepts of software engineering, ranging from domain analysis, requiremen		solutions, duality principle in linear programming, stability of solution of linear programming problem. Traffic problem.		
System and subsystem, external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of differential equations. Linear and nonlinear system, stationary and non-stationary system, causality, Convolutional integral. Laplace and Z transformations, Transfer function. Stability of LTI systems. Discretization of continuous systems. System interconnection. 11STAS Statistics Z,ZK 5 Definition of probability, random variable and its description, known distributions, random vector, function of random variable. Methods of point estimation. Testing of statistical hypothesis Regression and correlation, linear regression, correlation coefficient, coefficient of determination, the general linear model, statistical inference in linear regression, analysis of variance multiple regression, the use of matrices in regression. 11X31 Project 1 Z 2 11X32 Project 2 Z 2 11X33 Project 3 Z 2 11Y1MM Mathematical procedures applicable for individual tasks and their program implementation. The outcoment of the course is to teach selected methods of linear programming, with theoretical procedures applicable for individual tasks and their program implementation of the course is to teach selected methods of linear programming, with theoretical procedures applicable for individual tasks and their program implementation. The outcoment of the course is to teach selected methods of linear programming, with theoretical procedures applicable for individual tasks and their program implementation. The outcoment of the course is to teach selected methods of linear programming, with theoretical procedures applicable for individual tasks and their program implementation. The outcoment of the course is the ability to implement and solve basic tasks from the queue theory, graph theory and both free and constrained optimization. 11Y1PV Project 3 Transportation Software Engineering 2alsic concepts of software engineering, ranging from domain analysis, requiremen	11MSP	Modeling of Systems and Processes	7 7K	4
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TISTAS Statistics Statistical proprohesis Statistical proportions of probability, random variable and its description, known distributions, random vector, function of random variable. Methods of point estimation. Testing of statistical hypothesis Regression and correlation, linear regression, correlation, coefficient of determination, the general linear model, statistical inference in linear regression, analysis of variance multiple regression, the use of martinear model, statistical inference in linear regression, analysis of variance multiple regression, the use of martinear model, statistical inference in linear regression, analysis of variance multiple regression, the use of martinear model, statistical inference in linear regression, analysis of variance multiple regression, the use of martinear model, statistical inference in linear regression, analysis of variance multiple regression, the use of martinear model, statistical inference in linear regression, analysis of variance multiple regression and correlation of the course is to teach selected methods of linear programming, with the oretical procedures applicable for individual tasks and their program implementation. The outcorrect of the course is the ability to implement and solve basic tasks from the queue theory, graph theory and both free and constrained optimization. The outcorrect of the course is the ability to implement and solve basic tasks from the queue theory, graph theory and both free and constraints. Computation of efficients of linear constraints. Computation of efficients of linear constraints. Computation of efficients of the problem of linear programming with a parameter in objective function, on right sides and in the matrix of coefficients of linear constraints. Computation of efficients and in the matrix of coefficients of linear co				-
Statistics Statis			,	,
Definition of probability, random variable and its description, known distributions, random vector, function of random variable. Methods of point estimation. Testing of statistical properties. Regression and correlation, linear regression, correlation coefficient, coefficient of determination, the general linear model, statistical inference in linear regression, analysis of variance multiple regression, the use of matrices in regression. 11X31	11STAS		7 7K	5
Regression and correlation, linear regression, correlation coefficient, coefficient of determination, the general linear model, statistical inference in linear regression, analysis of variance multiple regression. The use of matrices in regression. 11X31			,	_
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11X31 Project 1 Z 2 11X33 Project 2 Z 2 11X33 Project 3 Z 2 11X33 Project 3 Z 2 11Y1MM Mathematical Models in Economy The goal of the course is to teach selected methods of linear programming, with theoretical procedures applicable for individual tasks and their program implementation. The outcome of the course is the ability to implement and solve basic tasks from the queue theory, graph theory, and both free and constrained optimization. 11Y1PV Project 3 RZ 2 2 11Y1MM Parametrical and Multicriterial Programming Fortunation of the course is the ability to implement and solve basic tasks from the queue theory, graph theory, and both free and constrained optimization. 11Y1PV Project 1 Parameterical and Multicriterial Programming Fortunation of the problem of linear programming with a parameter in objective function, on right sides and in the matrix of coeficients of linear constraints. Computation of efficient solution 11Y1SI Transportation Software Engineering KZ 2 2 2 3 3 3 4 4 5 5 5 6 8 2 5 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	•		, ,	
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11Y1MM		•		
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12Y1C2	Designing Roads in Civil 3D II	KZ	2
The course is dev	voted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through	the complete des	ign of this
particular linear b	uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The	previously acquired	d skills are
	improved and developed. Students learn to design intersections.		
12Y1DS	Project Documentation in Practice	KZ	2
Project document	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
	ion, basic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regulation		
area, principies	of urban acoustic, noise transmission, soundproofing. Types of noise sources in area. Determination of acoustic situation in the area computing and measurement of transport noise. Acoustic studies, measuring protocol.	of interest. Method	lology of
12Y1KN		KZ	2
	Combined Transportation port strategy and legislation. Load units. Means of transport in combined transport. Combined transport systems. Transshipping areas		
12Y1PC	Pedestrian and Cycling Transport	KZ	
	Fedestrian and Cycling Transport ians. Pedestrian crossings. Modifications for blind, dim-sighted and disabled people. Design of cycle routes network. Ways of cycle route		2 narameters
· · · · · · · · · · · · · · · · · · ·	ration of cyclists from other transport modes. Cycle tracks and its design - one way streets, reserved traffic lanes, bus stops, crossings	-	- 1
ioi oyonotoi oopai	crossroads. Traffic signs and road marking for cyclists.	o min outor transpe	
12Y1PD	Assessment of Transport Structures	KZ	2
	isport structures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibilities of	I	
	s on the landscape. Rating fragmentation and landscape connectivity in the preparation of linear structures. Practical examples of ass		I
•	the environment.		-
12Y1PU	Organization Disposition of Railway Stations	KZ	2
	on. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zon		
Reser	rve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic	railway network.	
12Y1SU	Road Management and Maintenance	KZ	2
Getting familiar w	with ownership of roads in the Czech Republic and the administration of the road at the state and county level. It is presented develop	ment of road netwo	ork, short,
medium and long-to	erm strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and repair	methods are discu	ussed in the
	classroom as well as investment activity in highway engineering.		
12Y1VC	Waterways and Shipping	KZ	2
Basic modes of tra	nsport. The position of water transport in the transport system of the Czech Republic and the EU. Advantages and disadvantages of v	vater transport. Ba	sic systems
of waterways in Eu	rope, a network of waterways in the Czech Republic. Construction of the waterway and its equipment. Management of waterways and	its operation. The le	egal regime
	in inland navigation, navigation rules of operation, navigation maps.		
12Y1ZU	Principles of Urbanism	KZ	2
Survey on history	of city and settlement building. Functional components and their mutual relations (working, living, recreation, transportation). Spacial	arrangement of se	ettlements.
	Types of towns or cities with a certain prevailing function, forms of their development. Brief overview of land-use planning.		
12ZTS	Railway Lines and Stations	Z,ZK	4
	ailway track geometry parameters. Route layout of railway lines. Railway line construction - railway substructure and superstructure. S	patial layout of rail	-
Rail transport. Ra	ailway track geometry parameters. Route layout of railway lines. Railway line construction - railway substructure and superstructure. S Railway control systems in relation to infrastructure. Operating and carriage points. Railway lines net and category. Traction in rail to	patial layout of rail ransport.	way lines.
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Rail transport. Ra 12ZYDI Role of transportati 14AS Students will be fan	ailway track geometry parameters. Route layout of railway lines. Railway line construction - railway substructure and superstructure. So Railway control systems in relation to infrastructure. Operating and carriage points. Railway lines net and category. Traction in rail to Introduction to Transportation Engineering ion in land-use planning. Basic terms in transportation engineering. Traffic survey and traffic prognosis. Introduction to topic of roads, point impacts of transportation to environment and safety. Algorithm and Data Structures niliarized with selected basic and derived data structures, algorithms, their properties and their design procedure. Students will analyze	patial layout of rail ransport. Z,ZK ublic mass transpo KZ problems, propose	way lines. 2 ort. Negative 2 ortheoretical
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14Y1BE	Barrierless Transport	KZ	2
	erless accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students v	-	_
or darrieriess envir	ronment roads, railway stations, public transport stops, terminal buildings, vehicles, public transport, information and orientation systems and transport in the supplementation by practical examples.	and transportati	ion technology
4.4)/4.DM	Theoretical knowledge will be supplemented by practical examples.	1/7	
14Y1BM	Biometric Methods	KZ	2
	erms, authentication methods, principles and performance measurement of biometric systems, overview of biometric technologies, hal		
etina recognition i	method, 2D and 3D face recognition, vein patterns on the wrist, ear biometrics, fingerprint recognition, skin spectroscopy, behavioral management applications, agents and interest applications, agents and interest applications.	nethods, the us	e or biometric
4.43/41.134/	in transport applications, safety and risks of biometric technologies.	1/7	
14Y1HW	Computer Hardware	KZ	2
Computer archit	tecture, basics of logical circuits design and their realization using FPGA. In detail, description of computer architecture and separate p	arts designing	- controllers,
4.074115	arithmetic and logical units, I/O subsystem.	1/7	
14Y1MP	Modeling Complex Assemblies and Models in Parametric Modeller	KZ	2
Assemblies pro	ogramming - tools and methodology of working subassemblies and assemblies, sheet metal parts modelling, welded assemblies, pipel	ines, and distrib	oution lines.
	Photorealistic output rendering - physical and material properties, lighting sources. MKP - visual example.		
14Y10P	Operating System	KZ	2
	stallation GNU/Linux OS. X-window system. Rights management - users and groups, ACL rights. Filesystems and attributes. Programs		
runlevels. Basic	console programs / commands. Config files. SW management, package systems. Programs in graphic shell - text, spreadsheet, graph	ic editors, soun	d, video and
	communication. Services management. Safe and secure configuration of OS. Remote administration.		
14Y1P2	Computer Aid of Transportation Projecting 2	KZ	2
	application for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, data		
odification (attrib	outes, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transition	curve, cross-a	nd longitudina
	section). Basics of 3D modelling.		
14Y1PA	3D Modeling in AutoCAD	KZ	2
Work in 3D non-p	parametric modeller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup creation, object of	data creation, w	ork with data
	connected with external database. Basic definition of work with lights, materials and reflexes. Models presentation.		
14Y1PG	Computer Graphics	KZ	2
	graphic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with editing	ng programs (w	ithin the user
	level scope) using layers, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics	cards.	
14Y1PI	Corporate Information System	KZ	2
	on-knowledge, components of information system, syntatic and semantic sense of data, structure of corporate information system, par		1
	duction, storage, etc.), corporate information politic and information control, risks of information system operation, legal environment of		=
′ '		,	•
	state information system, information system security, data protection, safety politics.		
14Y1P I	state information system, information system security, data protection, safety politics. C. Programming Language	K7	2
14Y1PJ	C Programming Language	KZ a. files. structur	2 res and unions
	C Programming Language nguage. Preprocessor, basics of the C language (data types, syntax, commands), functions, pointes, dynamical memory allocation, strin	g, files, structur	1
C programming lar	C Programming Language nguage. Preprocessor, basics of the C language (data types, syntax, commands), functions, pointes, dynamical memory allocation, strin Implementations of abstract data types (FIFO, LIFO, list), programming techniques (sorting, searching, recursion), using bitwise op	g, files, structur rerators.	es and unions
C programming lar	C Programming Language nguage. Preprocessor, basics of the C language (data types, syntax, commands), functions, pointes, dynamical memory allocation, strin Implementations of abstract data types (FIFO, LIFO, list), programming techniques (sorting, searching, recursion), using bitwise op Advanced Data Processing in Spreadsheets	g, files, structur rerators. KZ	es and unions
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2 programming lar 14Y1PZ Students will be	C Programming Language nguage. Preprocessor, basics of the C language (data types, syntax, commands), functions, pointes, dynamical memory allocation, strin Implementations of abstract data types (FIFO, LIFO, list), programming techniques (sorting, searching, recursion), using bitwise op Advanced Data Processing in Spreadsheets e familiar with principles of working in a spreadsheet. Graphic layout of the table appearance, formatting of numbers, insertion of formulate detection. Working with large spreadsheets, filters, advanced filters, database functions. Pivot tables and charts, conditional formatting, so	g, files, structur rerators. KZ las and functior	es and unions 2 ns, including
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14Y1PZ Students will be ddressing, error of 14Y1TI cossibilities of scrience 14Y1UP	C Programming Language Inguage. Preprocessor, basics of the C language (data types, syntax, commands), functions, pointes, dynamical memory allocation, strin Implementations of abstract data types (FIFO, LIFO, list), programming techniques (sorting, searching, recursion), using bitwise op Advanced Data Processing in Spreadsheets In a familiar with principles of working in a spreadsheet. Graphic layout of the table appearance, formatting of numbers, insertion of formute detection. 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. Creating Interactive Internet Applications In the processing of the processing in Spreadsheets Creating Interactive Internet Applications In the processing in Spreadsheets Editing of Theses in MS Word	g, files, structur rerators. KZ las and functior olution finding, s KZ own applicatio	es and unions 2 ns, including solver, macros 2 n programme
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15Y1BO	Work Safety and Health Protection in Transportation	KZ	2
Fundamental legis	lative, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation. H health insurance of home and foreign business trips, statistics, working practice.	ealth protection pr	ogrammes,
15Y1DU	History of Art and Society	KZ	2
	efinitions, terminology, division into periods. Architecture, fine arts, design. Situation in Central Europe, today in the Czech Republic.	l	
	buildings. Design of transport vehicles.	,g,	
15Y1DZ	History of Railway	KZ	2
	rays, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Repi	l	
	vay development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connecti railway accidents, railway junctions. Excursions and projections.		
15Y1EH	European Integration within Historical Context	KZ	2
	formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism. Li	ttle Entente, its pri	nciples and
goals. Europe afte	er Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and i	ts consequences f	or Europe.
	New quality of French-German relationship - a driving power of starting European integration.		
15Y1FD	French Area Studies and Transportation	KZ	2
France - geograp	hy and regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air tral	ffic, specialised ter	minology.
Frer	nch society and culture. Current political system. System of education, studying in France. Selected authors of French literature. French	ch gastronomy.	
15Y1HD	History of City Mass Transport	KZ	2
	transport in the world, development of tram, bus and trolley-bus systems. History of transport networks in the world, current trends	•	of tariff and
cleara	nce systems. History of city transport in Prague and Brno. History of tram, bus and trolley-bus operation systems in the Czech Repul	blic and Slovakia.	
15Y1HE	Work Hygiene and Ergonomics in Traffic	KZ	2
Basic knowledge	of occupational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of these	factors on health o	f workers.
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	s 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. Fa	amous aviators. Helicopters. CSA airplanes. Development of aircrafts in Czechoslovakia between the years 1945-1989. Classic era o	f aviation. Golden	era of civil
	aviation. Modern era of civil aviation. Airline companies. Supersonic flying.	ı	
15Y1NE	German in the Economy and Society	KZ	2
Recent economic	and social issues of German speaking countries and of the EU. Reading and listening of texts. Lexical, grammatical and semantic ar	alysis of texts. Dis	cussion on
	selected topics.		_
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	tive means
101/01	of transport. Lifting equipment and conveyors. Legislation.	_	
16X31	Project 1	Z	2
16X32	Project 2	Z	2
16X33	Project 3	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	. Combustion engi	ne, electric
	drive, steam engine, air engine. Energy accumulation means, accumulator, flywheel, fuel cell. Energy recuperation. WTW anal		
16Y1IS	Interactive simulators and simulations	KZ	2
	y and application of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical m		nethods.
	ation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and intera		
16Y1KS	Quality and Reliability of Vehicles	KZ	2
	ility theory in design, development, production and operation of vehicles. Definition and possible approach to quality and reliability. K		•
Mode and Effects	Analysis), QFD (Quality Function Deployment), DFx (Design for Assamly, Manufacturying, Quality, Services) and other methods u	ised in industrial ap	plications.
40\/4D\/	Knowledge-based systems of quality and reliability, data collection.	1/7	
16Y1PV	Operation, Construction and Maintenance of Vehicles	KZ	2
iviethous of venicle	production. Vehicle maintenance. Vehicle diagnostics. Maintenence and repair plans. Engine maintenance and emission measureme General principles of engine diagnostics.	ent. Iransmission r	iechanism.
16V1DE		V7	2
16Y1RE	Control and Electronic Vehicle Systems	KZ	2
	ts of regulation. Tools for analytical solution, linear system description. Basic types of a regulator (PID), properties, advantages, disadva	-	
and hybrid drive	control Electric drive Vehicle communication has (CAN LIN EleyPay ISOhus KWP2000 protocole etc.) Vehicle electronic control	cafety communica	ilion and
	control. Electric drive. Vehicle communication bus (CAN, LIN, FlexRay, ISObus, KWP2000 protocole etc.). Vehicle electronic control,	safety, communica	
16V1\/T	comfort systems.		2
16Y1VT	comfort systems. Development in Railroad Vehicles	KZ	2
	comfort systems. Development in Railroad Vehicles traction. Railroad vehicle parametres regulation. Control and driving of railroad vehicles. Importance in heavy duty and personal trar	KZ	
Railroad vehicles	comfort systems. Development in Railroad Vehicles traction. Railroad vehicle parametres regulation. Control and driving of railroad vehicles. Importance in heavy duty and personal trar assesment. New materials in design. International standardization.	KZ nsportation. Critica	situation
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Railroad vehicles 16Y1ZG Computer graphics	comfort systems. Development in Railroad Vehicles traction. Railroad vehicle parametres regulation. Control and driving of railroad vehicles. Importance in heavy duty and personal trar assesment. New materials in design. International standardization. Introduction into Applied Computer Graphics	KZ nsportation. Critica KZ mes, models, princ	situation 2 siples of 2D
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17X31	Project 1	Z	2
17X31	Project 2	Z	2
	,		1
17X33	Project 3	Z	2
17Y1AF	Alternative Forms of Transportation Project Financing	KZ	2
•	ifed such forms of financing in transportation, where the public sector body perform the final debtor, i. e. debtor payments come from its sipant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of securities as an alternative project.	-	
17Y1EV	Public Sector Economy	KZ	2
	ncial theory of public sector, public choice theory, externalites, decisions about public finance allocation, economic assesment of public R, state budget, management of public projects a their economic efficiency assessment, way of elaboration of PPP projects, funding fror	projects (CBA,	
17Y1LL	Logistics of Passenger and Freight Air Transport	KZ	2
	ssenger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial transpair cargo. Information systems in air transport. Global distribution systems.		_
17Y1MD General principles	Marketing in Transportation of marketing applied to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transport and the application of marketing.	KZ d the resulting d	2 ifferences in
47)/405	the application of marketing.	1/7	
17Y10F	Personal Finance	KZ	2
•			
onsumer loans, rei	financing), savings and investments (investment horizon, return, risk, investment strategy), insurance (insurance types, suitability and ac (retirement savings and insurance).	uequacy), securi	ng me iului
17Y1PM		KZ	2
	Personnel Management ces, work group, man as personality, planning, choice, evaluation and education of human sources, work adaptation, teamwork, interce		
			ation.
17Y1ST	Titan Simulation	KZ	1
	gement game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same product ntity and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequences		
etermine the quan	of financial corporate reports and they use this information for other business decisions.	or triell decisions	by the lon
18KAD	Kinematics and Dynamics	Z,ZK	1
-	motion along a curve. Kinematics of rigid plane, kinematics of rigid body. Point mass kinematics, system of point masses. Point mass d	•	1 stem of poir
_	n of motion. Method of Newton. Princle of D'Alembert. Free and forced vibration with one degree of freedom. Viscous damping. Impact		-
maccoc, equation	solution of vibration with multiple degrees of freedom.	anoony. maroudo	
18MTY	Materials Science and Engineering	Z,ZK	3
	terials science and engineering explains mechanical properties of structural materials based on their bonding forces and microstructure		_
	s the most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and comp		
o para to motaro do	to degradation processes in materials, to defectoscopy and to main mechanical tests.		. io aloo pai
18P7P		7.7K	3
18PZP ension and compre	Elasticity and Strength	Z,ZK and welded joint	3 of structure
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20UITS	Introduction to Intelligent Transport Systems	Z,ZK	7
reminiology and le	gislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamentals of inform		1
	inciples and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real examples		
-	principles of ITS.		
20X31	Project 1	Z	2
20X32	·	<u>Z</u>	
	Project 2		2
20X33	Project 3	Z	2
20Y1AE	Applied Electronics	KZ	2
Basic electronic s	emiconductor components, their principles, characteristics and typical connection diagrams. Semiconductor PN junction diodes, tran	sistors, thyristor, o	perational
amplifiers, basic le	ogic gates. Functions of basic electronic circuits and methods for their designs (rectifiers, voltage regulator with Zener diode, transisto	r as an amplifier,	operationa
	amplifier as an inverting and noninverting amplifier).		
20Y1EA	Environmental Aspects of Transport	KZ	2
State of the atmosp	here, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilistic	forecasts, forecas	t evaluatio
	pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transp		
20Y1EK	Qualification in Electrical Engineering	KZ	2
-	e with measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock hazard, s		1
	allowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legislatic		
voitage, maximum	in relation to health and safety and electrical engineering.	ni, standards and	regulation
00)/41 N		1/7	
20Y1LN	Location and Navigation	KZ	2
Description and	examples of road networks, localization on the network. Routing algorithms, their properties and implementation. Description and examples of road networks, localization on the network.	mpies of datasets	for finding
	transport connections, routing algorithms, their properties and implementation.		
20Y1OI	Fare Collection and Information Systems	KZ	2
Fare collection sy	restems in public transport and their components (on-board units, validators, turnstiles,). Information systems and their components	for users (timetab	les, maps
pai	nels) and operators (cycles, location or current delay of vehicles,). The issue of tariff systems. Other examples of clearance systems	ems (parking).	
20Y1PK	Product Quality Management Processes	KZ	2
	of organization management. Management systems and international standards; quality management systems. Quality products, prod		1
	tems management, management principles. Principles of process management, monitoring and measurement systems management. U		
	for systems management. Process management principles. Metrology and testing. Product certification.		
20Y1SC	Sensors and Actuators	KZ	2
	s and actuators. Basics of measuring theory and actuating influence. The respective technologies and construction principles. Sensors of		1
Tiricipies of serisor			io-magne
	state (temperature, humidity), chemical and particle flow values. Electrical, pneumatic and hydraulic actuators and solid phase ele		1 -
21X31	Project 1	Z	2
21X32	Project 2	Z	2
21X33	Project 3	Z	2
21Y1FN	Factors Affecting the Rate of Accidents in Aviation	KZ	2
ZIIIFIN			
ntraduction The or	sons of international and national organizations in civil aviation. The acons of the investigation organizations within the state and inter		_
	cope of international and national organizations in civil aviation. The scope of the investigation organizations within the state and interpretation of the Regulation (FC). Regulation (FLI) Human foctor, Hillipation of interpretation of the Regulation (FC).	national committe	es. Analys
	n of ICAO Annexes 13 and 19. Analysis and interpretation of the Regulation (EC), Regulation (EU). Human factor. Utilization of inform	national committe	es. Analys
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22Y1SZ	Forensic Expertise	KZ	2
Historical evolutio	n of forensic engineering, forensic activity, current legislature in the Czech Republic, different disciplines, notion of forensic, forensic l	egislation, basic fo	orensic acts,
expert role in the	obtaining proofs, forensic methodology. Notion of the evidence, general principles of evidence obtaining, metrology, protocol, evidence	es collection, site	inspection,
	forensic report, elements. Finding, expert testimony / report.		
23BDIS	Safety Technologies of Transportation and Information Systems	KZ	3
Safety of transp	portation means - principles, testing, evaluation. Safety of infrastructures, critical structures, crisis scenarios. Safety of information sys	tems and their rol	oustness.
23BER	Safety and Ergonomical Solutions in Transport	KZ	3
Safety principles	in transport and ergonomy. Basics of human-machine interface (HMI). Vehicle design from passengers safety point of view. Evaluation	of safety criteria	and vehicle
	parameters.		
23PSOB	Psychology and Sociology in the Security	Z	2
The role of sociolog	gy and psychology as a discipline in the discourse of security. Security of information in cyberspace from the perspective of social psycho	logy. Application of	fsociological
	and psychological methodology in communication security in cyberspace.		
23X31	Project 1	Z	2
23X32	Project 2	Z	2
23X33	Project 3	Z	2
23Y1DZ	Data and Their Processing for Engineering Fields Needs	KZ	2
Courses of risk, ba	asic terms, data collection, data sets, data random uncertainty and data epistemic uncertainty, data processing, hazard, risk, value so	ales, analytical, e	mpirical and
	heuristic methods, hazard determination and risk determination, methods for variants' creation, decision support systems		
23Y1KO	Quantum Physics and Optoelectronics	KZ	2
	Ground of quantum physics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics compor	nents.	
23Y1OK	Protection of Critical Objects and Infrastructures	KZ	2
Types of technolog	jical systems, critical item, risks and their courses, criticality, vulnerability, connectivity, dependability, resilience, failure, protection, safe	ty of critical object	s and critical
	infrastructures.		
23Y1VS	Negotiation and Cooperation	KZ	2
Code of conduct for	or 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 negot	tiation, the essence of negotiation, the differences in negotiation in business and in crisis situations, the principle of "win both", specific	cations and biddin	g, the role of
	trust.		
TV-1	Physical Education	Z	1
TV-2	Physical Education	Z	1

For updated information see http://bilakniha.cvut.cz/en/FF.html Generated: day 13. 08. 2022, time 21:24.