Study plan

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

Faculty/Institute/Others:

Department:

Branch of study guaranteed by the department: Welcome page

Garantor of the study branch:

Program of study: Technology in Transportation and Telecommunications

Type of study: Bachelor full-time

Required credits: 174
Elective courses credits: 6
Sum of credits in the plan: 180

Note on the plan:

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

The role of the block: Z

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

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

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

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

Credits in the group: 30 Note on the group:

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

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

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

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

their applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classification.

| 12ZYDI | Introduction to Transportation Engineering | Z,ZK | 2 |
|--------------------------------|---|----------------------|-------------------|
| Role of transportatio | n in land-use planning. Basic terms in transportation engineering. Traffic survey and traffic prognosis. Introduction to topic of roa | ds, public mass trai | nsport. Negative |
| impacts of transporta | ation to environment and safety. | | |
| 18MTY | Materials Science and Engineering | Z,ZK | 3 |
| Basic course of mate | erials science and engineering explains mechanical properties of structural materials based on their bonding forces and microstr | ucture. However th | e main attention |
| is paid to metals as | the most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and | composites. Atten | tion is also paid |
| to degradation proce | esses in materials, to defectoscopy and to main mechanical tests. | | |
| 11GIE | Geometry | KZ | 3 |
| Differential geometry | vof curves - parameterization, the arc of the curve, torsion and curvature, Frenet's trihedron. Kinematics - a curve as a trajecto | ry of the motion, th | e velocity, and |
| acceleration of a par | ticle moving on a curved path. | | |
| 14ASD | Algorithm and Data Structures | KZ | 3 |
| Students will analyze | e problems, design a theoretical solution to a given problem and write the resulting algorithm using flowcharts, practice reading | algorithms written u | sing flowcharts, |
| and use basic Boole | an algebra to construct constraints in algorithms. Students will be introduced to the basics of the Python programming languag | e - variable, branch | ing, loops, they |
| will learn to work wit | h variables of basic data types (integer, floating point and string) and the list data structure in their programs. | | |
| 14KSP | Constructing with Computer Aid | KZ | 2 |
| "CAD systems" term | determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic common | work rules in grapl | nic applications |
| and CA systems. Co | -ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting pos | sibilites, AutoCAD | environment |
| profiles, drawings wi | th raster foundaments). | | |
| 18TED | Technical Documentation | KZ | 2 |
| Technical standards | , international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensio | nal and geometrica | al accuracy, |
| arrangement of draw | ring sheets. | | |
| 15DPLG | Transportation Psychology | Z | 2 |
| Subject of psycholog | y and its basic concepts. Information intake, decision-making and behaviour. Performance. Engineering psychology and vehicle o | construction. Psych | ological aspects |
| of travel route and tr | affic conditions, accidents and traffic incidents. Selection and training of the staff. Work and leisure. Age as a factor in transport | operation. | |
| or traver route and tr | | | |
| 16UDOP | Introduction into Vehicles | Z | 2 |
| 16UDOP | Introduction into Vehicles ortation systems. Functionality and setup. Movement and drive principles. Engines and their characteristics. Rail, road, air and v | | _ |
| 16UDOP Vehicles and transpo | | | _ |
| 16UDOP Vehicles and transpo | ortation systems. Functionality and setup. Movement and drive principles. Engines and their characteristics. Rail, road, air and v | | _ |

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

Name of the group: 2nd Sem. Bachelor Full-Time TET from 2020/21

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

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

Credits in the group: 30

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

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

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

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

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

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

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

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

Credits in the group: 30 Note on the group:

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

| 11FYZ | Physics | Z,ZK | 5 |
|--|--|--|--------------------------|
| Kinematics, dynami | nics, Newton's laws, force fields, mechanics of continuum, thermodynamics, introduction to electrostatics and | d electric current. | |
| 12MDE | Transport Models and Transport Excesses | Z,ZK | 3 |
| arameters of the ti | traffic flow and methods for their measurement. Models of the traffic flow, communications load, line and urb | an systems. Theory of dijelies, shock wa | aves Ouality |
| | | an systems. Theory of queues, shook we | avoo. Quanty |
| ransport and its as | ssessment. Statistical characteristics of transport. Transport excesses, their analysis, the causes, identify and | | - |
| | ssessment. Statistical characteristics of transport. Transport excesses, their analysis, the causes, identify an | | - |
| safety and fluency. | ssessment. Statistical characteristics of transport. Transport excesses, their analysis, the causes, identify an | | - |
| safety and fluency. | ssessment. Statistical characteristics of transport. Transport excesses, their analysis, the causes, identify and | d minimize the consequences. Improving | g of transport |
| safety and fluency. 11TGA Basic terms of grap | ssessment. Statistical characteristics of transport. Transport excesses, their analysis, the causes, identify and Graph Theory and its Applications in Transport | d minimize the consequences. Improving | g of transport |
| safety and fluency. 11TGA Basic terms of grap 18PZP | Graph Theory and its Applications in Transport Graphs in graphs, flows in networks, location problems, design problems on graphs, optimum routing | d minimize the consequences. Improving Z,ZK ng, use of graphs in other scientific discip Z,ZK | g of transport 4 plines. |

| 20UITS | Introduction to Intelligent Transport Systems | Z.ZK | 7 | | | | | | |
|---|--|---------------------|-------------------|--|--|--|--|--|--|
| Terminology and legislat | Terminology and legislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamentals of information and telecommunication | | | | | | | | |
| systems for ITS. Principles and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real examples of possible applications of the | | | | | | | | | |
| principles of ITS. | | | | | | | | | |
| 12PPOK | Designing Roads, Highways and Motorways | KZ | 3 | | | | | | |
| Definition, types, owner | ship, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standa | ırd speed. Route i | n rural areas. | | | | | | |
| Range of vision for stop | ping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. S | afety device. Cros | sings, junctions, | | | | | | |
| intersections. | | | | | | | | | |
| 14DATS | Database Systems | KZ | 2 | | | | | | |
| Basic concepts of datab | ase systems, conceptual model, relational data model, the principles of normal forms, relational database design, security a | nd integrity of dat | a, database | | | | | | |
| queries, relational algeb | ra, SQL language, client / server, multilayer architectures, distributed database systems. Access to data via the WWW. | | | | | | | | |
| 15JZ1A | Foreign Language - English 1 | Z | 3 | | | | | | |
| Grammatical Structures | and Style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and | l communicative s | kills. Elementary | | | | | | |

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

Name of the group: 4th Sem. Bachelor Full-Time TET-ITS from 2022/23 Requirement credits in the group: In this group you have to gain 22 credits

Requirement courses in the group: In this group you have to complete 4 courses

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

Credits in the group: 22 Note on the group:

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

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

| I HVIAIVI I | Mathematical Methods | ∠,∠r\ | / | | | | | |
|---|--|---------------------|------------------|--|--|--|--|--|
| Mathematical modeling. The system and its mathematical description. Types of signals. Basic system responses. Convolution. State models. Principle of general / stationary / linear | | | | | | | | |
| state description. Data r | neasurement. Uncertainty in measured data. Data normalization. Preparation of data for further processing. Linear state mo | del over noisy data | a. Kalman filter | | | | | |
| condition estimation. Sta | atistical learning methods. Regression, classification. | | | | | | | |
| 14AM | Automation and Measurement | Z.ZK | 6 | | | | | |

Introduction into terms agent, rational agent, their unification to elements of transportation systems, analogies in nature, regulation in openen loop and control in closed loop, reactive systems, control using finite state machines. Dynamic system identification. Measurement of basic electric and other physical quantities, principles of measurement instruments, DC

and AC measurement, actuators, measurement automation, measurement laboratories.

Transport Technology

Z,ZK 6

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

15JZ2A Foreign Language - English 2 Z,ZK 3

Grammatical structures and style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and communicative skills. Elementary stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles of rhetoric.

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

Mathamatical Mathada

Name of the group: 4th Sem. Bachelor Full-Time TET-ITS alternative subject from 2022/23

Requirement credits in the group: In this group you have to gain 4 credits

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

Credits in the group: 4
Note on the group:

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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 Old ich Hykš, Jana Kuklová, Zuzana Malá, Tomáš Vít Zuzana Malá Pavel Demo (Gar.) | Z,ZK | 4 | 2P+1C | L | Z |
| 20ZEKT | Fundamentals of Electrical Engineering | Z,ZK | 4 | 2P+1C | L | Z |

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

| 11EMO | Electromagnetic Field and Optics | Z,ZK | 4 |
|--------------------------|--|--------------------|---------------------|
| Electric field. Electric | current. Magnetic field. Electromagnetic field. Optics. Basics of solid-state physics. | | |
| 20ZEKT | Fundamentals of Electrical Engineering | Z,ZK | 4 |
| Maxwell equations, e | ectrotechnical quantities (electrical current, voltage, resistance, conductivity, resistivity, conductivity, power, energy), Ohm's lav | v, Kirchhoff laws, | electrical circuits |
| (elements methods | DC and AC circuits, accumulators, photovoltaics), electric machines, transmission lines, reflections on transmission lines, basic | electrical measu | rements |

Code of the group: 5S-BP-ITS-25/26

Name of the group: 5th Sem. Bachelor Full-Time TET-ITS from 2025/26 Requirement credits in the group: In this group you have to gain 23 credits

Requirement courses in the group: In this group you have to complete 4 courses

Credits in the group: 23 Note on the group:

14ISYD

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

Characteristics of the courses of this group of Study Plan: Code=5S-BP-ITS-25/26 Name=5th Sem. Bachelor Full-Time TET-ITS from 2025/26

Z.ZK

| | information Cyclomo in Transportation | 2,21 | |
|---|--|---|-------------------------------|
| Architecture and cloud | services concept, eGovernment-structure. Electronic communication and signature. IS life cycle and IT projects. Types of info | rmation systems | and specific |
| implementation in trans | sport. Roles, processes, management, optimization in IS. Oracle data types. SQL Developer, SQL queries. Comprehensive ex | ample and web a | pplication |
| programming. | | | |
| 20TAMS | Telecommunications and Local Area Networks | Z,ZK | 7 |
| Summary of the curren | state and introduction of the new trends in the development of telecommunication systems. The legal environment for the provision | sion and use of tel | ecommunication |
| services is explained, I | pasic telecommunication solutions in the hierarchical architecture of telecommunication networks are presented, and the links | between the para | ameters of the |
| | | | |
| parts and the performa | nce of telecommunication systems. | | |
| parts and the performation 20RIZE | nce of telecommunication systems. Railway Traffic Management | Z,ZK | 7 |
| 20RIZE | · | , , | 7 curity equipment |
| 20RIZE Historical development | Railway Traffic Management | t, existing train se | |
| 20RIZE Historical development | Railway Traffic Management of security technology, external elements (switches, signals, detection means), station, track and crossing security equipment | t, existing train se | |
| 20RIZE Historical development and ETCS, traffic contr | Railway Traffic Management of security technology, external elements (switches, signals, detection means), station, track and crossing security equipment of structure, traffic control technology, automation and traffic control optimization, power supply systems, energy calculations | t, existing train seand train running | dynamics. |
| 20RIZE Historical development and ETCS, traffic contr 20ELKA Practical experience w | Railway Traffic Management of security technology, external elements (switches, signals, detection means), station, track and crossing security equipment of structure, traffic control technology, automation and traffic control optimization, power supply systems, energy calculations Qualification in Electrical Engineering | t, existing train sea and train running KZ ard, symbols and la | dynamics. 2 abeling, nominal |

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

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

Information Systems in Transportation

Requirement courses in the group: In this group you have to complete 4 courses

Credits in the group: 23

Note on the group:

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

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

| ſ | 16SVIR | Vehicle Systems and Interaction with Driver | 7 7K | 7 |
|-----|--------|---|-------|------------|
| - 1 | IDOVIK | Vehicle Systems and Interaction with Driver | ∠,∠r\ | , <i>I</i> |

20ATEL Applied Telematics

Z,ZK 7

Transport telematics - definition, benefits, ITS legislation, ITS organizations, ITS architecture and its practical use, data structures and data, geographic information systems, toll systems, e-call, fleet management, check-in and information systems, ITS connection to Smart City, ITS applications on specific examples.

20RISI Road Traffic Control Z,ZK 7

Traffic and proceeding systems approach to SSZ decign griteria. SSZ production project diverging SSZ

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

Basic electronic semiconductor components, their principles, characteristics and typical connection diagrams. Semiconductor PN junction diodes. Transistors. Thyristor. Operational amplifiers, basic logic gates. Functions of basic electronic circuits and methods for their designs (rectifiers, voltage regulator with Zener diode, transistor as an amplifier, operational amplifier as an inverting and noninverting amplifier).

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

Applied Electronics

The role of the block: ZP

Code of the group: X1-BP-ITS-22/23

Name of the group: Research Groups Bachelor Full-Time TET-ITS from 2022/23

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

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

Credits in the group: 6

| Code | Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.) | Completion | Credits | Scope | Semester | Role |
|--------|--|------------|---------|-------|----------|------|
| 16X31S | Project 1 ITS Petr Bouchner, Milan Sliacky, Michal Cenkner | Z | 2 | 0P+1C | L | ZP |
| 15X31S | Project 1 ITS | Z | 2 | 0P+1C | L | ZP |
| 14X31S | Project 1 ITS Tomáš Brandejský, Vít Fábera, Jana Kaliková, Jan Kr ál, Mária Jánešová | Z | 2 | 0P+1C | L | ZP |
| 12X31S | Project 1 ITS | Z | 2 | 0P+1C | L | ZP |
| 11X31S | Project 1 ITS Jan P ikryl Jan P ikryl Jan P ikryl (Gar.) | Z | 2 | 0P+1C | L | ZP |
| 23X31S | Project 1 ITS | Z | 2 | 0P+1C | L | ZP |
| 18X31S | Project 1 ITS | Z | 2 | 0P+1C | L | ZP |
| 20X31S | Project 1 ITS Ji í R ži ka, Patrik Horaž ovský, Milan Sliacky, Vladimír Faltus, Martin Leso, Ji í Brož | Z | 2 | 0P+1C | L | ZP |
| 21X31S | Project 1 ITS | Z | 2 | 0P+1C | L | ZP |
| 22X31S | Project 1 ITS Michal Frydrýn, Tomáš Mi unek, Luboš Nouzovský, Tomáš Kohout, Zden k Svatý Luboš Nouzovský | Z | 2 | 0P+1C | L | ZP |
| 17X31S | Project 1 ITS | Z | 2 | 0P+1C | L | ZP |
| 16X32S | Project 2 ITS Milan Sliacky, Josef Mík, Michal Cenkner, Tereza Kunclová | Z | 2 | 0P+1C | Z | ZP |
| 15X32S | Project 2 ITS | Z | 2 | 0P+1C | Z | ZP |
| 14X32S | Project 2 ITS Jana Kaliková, Jan Kr ál, Zden k Lokaj, Martin Šrotý, Tomáš Zelinka | Z | 2 | 0P+1C | Z | ZP |
| 12X32S | Project 2 ITS | Z | 2 | 0P+1C | Z | ZP |
| 11X32S | Project 2 ITS Evženie Uglickich, Pavla Pecherková, Michal Matowicki, Ivan Nagy, Jana Kuklová, Jan P ikryl, Ond ej P ibyl Jana Kuklová Jana Kuklová (Gar.) | Z | 2 | 0P+1C | Z | ZP |
| 17X32S | Project 2 ITS | Z | 2 | 0P+1C | Z | ZP |
| 23X32S | Project 2 ITS | Z | 2 | 0P+1C | Z | ZP |
| 22X32S | Project 2 ITS | Z | 2 | 0P+1C | Z | ZP |
| 21X32S | Project 2 ITS | Z | 2 | 0P+1C | Z | ZP |
| 20X32S | Project 2 ITS Ji í R ži ka, Patrik Horaž ovský, Milan Sliacky, Martin Leso | Z | 2 | 0P+1C | Z | ZP |
| 18X32S | Project 2 ITS | Z | 2 | 0P+1C | Z | ZP |
| 11X33S | Project 3 ITS Jan P ikryl Jan P ikryl (Gar.) | Z | 2 | 0P+2C | L | ZP |
| 12X33S | Project 3 ITS | Z | 2 | 0P+2C | L | ZP |
| 14X33S | Project 3 ITS Jana Kaliková, Jan Kr ál, Zden k Lokaj, Martin Šrotý, Tomáš Zelinka | Z | 2 | 0P+2C | L | ZP |
| 15X33S | Project 3 ITS | Z | 2 | 0P+2C | L | ZP |

| 16X33S | Project 3 ITS Milan Sliacky, Josef Mík, Michal Cenkner, Tereza Kunclová | Z | 2 | 0P+2C | L | ZP |
|--------|---|---|---|-------|---|----|
| 23X33S | Project 3 ITS | Z | 2 | 0P+2C | L | ZP |
| 21X33S | Project 3 ITS | Z | 2 | 0P+2C | L | ZP |
| 20X33S | Project 3 ITS | Z | 2 | 0P+2C | L | ZP |
| 18X33S | Project 3 ITS | Z | 2 | 0P+2C | L | ZP |
| 17X33S | Project 3 ITS | Z | 2 | 0P+2C | L | ZP |
| 22X33S | Project 3 ITS | Z | 2 | 0P+2C | L | ZP |

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

| 110111 2022/23 | | | |
|----------------|---------------|---|---|
| 16X31S | Project 1 ITS | Z | 2 |
| 15X31S | Project 1 ITS | Z | 2 |
| 14X31S | Project 1 ITS | Z | 2 |
| 12X31S | Project 1 ITS | Z | 2 |
| 11X31S | Project 1 ITS | Z | 2 |
| 23X31S | Project 1 ITS | Z | 2 |
| 18X31S | Project 1 ITS | Z | 2 |
| 20X31S | Project 1 ITS | Z | 2 |
| 21X31S | Project 1 ITS | Z | 2 |
| 22X31S | Project 1 ITS | Z | 2 |
| 17X31S | Project 1 ITS | Z | 2 |
| 16X32S | Project 2 ITS | Z | 2 |
| 15X32S | Project 2 ITS | Z | 2 |
| 14X32S | Project 2 ITS | Z | 2 |
| 12X32S | Project 2 ITS | Z | 2 |
| 11X32S | Project 2 ITS | Z | 2 |
| 17X32S | Project 2 ITS | Z | 2 |
| 23X32S | Project 2 ITS | Z | 2 |
| 22X32S | Project 2 ITS | Z | 2 |
| 21X32S | Project 2 ITS | Z | 2 |
| 20X32S | Project 2 ITS | Z | 2 |
| 18X32S | Project 2 ITS | Z | 2 |
| 11X33S | Project 3 ITS | Z | 2 |
| 12X33S | Project 3 ITS | Z | 2 |
| 14X33S | Project 3 ITS | Z | 2 |
| 15X33S | Project 3 ITS | Z | 2 |
| 16X33S | Project 3 ITS | Z | 2 |
| 23X33S | Project 3 ITS | Z | 2 |
| 21X33S | Project 3 ITS | Z | 2 |
| 20X33S | Project 3 ITS | Z | 2 |
| 18X33S | Project 3 ITS | Z | 2 |
| 17X33S | Project 3 ITS | Z | 2 |
| 22X33S | Project 3 ITS | Z | 2 |
| | | · | |

Name of the block: Compulsory elective courses

Minimal number of credits of the block: 6

The role of the block: PV

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

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

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

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

Credits in the group: 6 Note on the group:

| Code | Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.) | Completion | Credits | Scope | Semester | Role |
|--------|---|------------|---------|-------|----------|------|
| 21Y1AM | Aeronautical Information Management (AIM) | KZ | 2 | 2P+0C | Z | PV |
| 00Y1XB | Active participation in a scientific project, workshop, short-term trip abroad | KZ | 2 | 2P+0C | | PV |

| 20Y1AF | Patrik Horaž ovský Patrik Horaž ovský Patrik Horaž ovský (Gar.) Alternative Forms of Transportation Project Financing Mária Jánešová Mária Jánešová | KZ | 2 | 2P+0C | Z | PV |
|--------|--|----|---|-------|---|-----|
| 18Y1AM | Anatomy, Mobility and Safety of Man | KZ | 2 | 2P+0C | Z | PV |
| 14Y1AV | Animation and Visualization | KZ | 2 | 2P+0C | L | PV |
| 12Y1AE | Applied Ecology Martin Jacura, Kristýna Neubergová | KZ | 2 | 2P+0C | Z | PV |
| 20Y1AE | Applied Electronics | KZ | 2 | 2P+0C | Z | PV |
| 14Y1BE | Barrierless Transport Jan Kr ál | KZ | 2 | 2P+0C | L | PV |
| 15Y1BO | Work Safety and Health Protection in Transportation | KZ | 2 | 2P+0C | L | PV |
| 11Y1BK | Error Detection Codes for Interlocking Systems Lucie Kárná Lucie Kárná Lucie Kárná (Gar.) | KZ | 2 | 2P+0C | Z | PV |
| 21Y1BS | Unmanned aircraft systems 1 Tomáš Tlu ho , Jakub Kraus, Michal erný | KZ | 2 | 2P+0C | L | PV |
| 14Y1BM | Biometric Methods | KZ | 2 | 2P+0C | Z | PV |
| 15Y1DZ | History of Railway Eva Rezlerová, Martín Jacura | KZ | 2 | 2P+0C | L | PV |
| 12Y1DS | Project Documentation in Practice | KZ | 2 | 2P+0C | Z | PV |
| 17Y1EV | Public Sector Economy | KZ | 2 | 2P+0C | Z | PV |
| 23Y1EH | Electronics and hardware in security of transportation | KZ | 2 | 2P+0C | L | PV |
| 20Y1EK | Qualification in Electrical Engineering | KZ | 2 | 2P+0C | L | PV |
| 16Y1EN | Energy Requirements of Vehicles | KZ | 2 | 2P+0C | L | PV |
| 20Y1EA | Environmental Aspects of Transport | KZ | 2 | 2P+0C | Z | PV |
| 15Y1EH | European Integration within Historical Context | KZ | 2 | 2P+0C | Z | PV |
| 18Y1EM | Experimental Methods in Mechanics Daniel Kytý Daniel Kytý Daniel Kytý (Gar.) | KZ | 2 | 2P+0C | Z | PV |
| 15Y1FD | French Area Studies and Transportation | KZ | 2 | 2P+0C | L | PV |
| 14Y1HW | Computer Hardware | KZ | 2 | 2P+0C | L | PV |
| 15Y1HL | History of Civil Aviation Vladimír Plos | KZ | 2 | 2P+0C | L | PV |
| 15Y1HD | History of City Mass Transport Milan Dont | KZ | 2 | 2P+0C | Z | PV |
| 12Y1HD | Traffic Noise Dagmar Ko árková, Libor Ládyš | KZ | 2 | 2P+0C | L | PV |
| 15Y1HE | Work Hygiene and Ergonomics in Traffic Petr Musil | KZ | 2 | 2P+0C | Z | PV |
| 16Y1IS | Interactive simulators and simulations | KZ | 2 | 2P+0C | L | PV |
| 12Y1KN | Combined Transportation Petr Nejedlý | KZ | 2 | 2P+0C | Z | PV |
| 12Y1KP | Communication and Promotion of Transport Projects Dagmar Ko árková, Ond ej Kubala | KZ | 2 | 2P+0C | L | PV |
| 20Y1KP | Communication and presentation skills Ji í R ži ka, Patrik Horaž ovský, Kristýna Navrátilová, Eva Haj iarová Ji í R ži ka | KZ | 2 | 2P+0C | Z | PV |
| 23Y1KM | Crisis Management | KZ | 2 | 2P+0C | Z | PV |
| 23Y1KO | Quantum Physics and Optoelectronics | KZ | 2 | 2P+0C | L | PV |
| 23Y1KY | Cybernality | KZ | 2 | 2P+0C | L | PV |
| 23Y1KB | Cyber security in transportation | KZ | 2 | 2P+0C | L | PV |
| 21Y1LJ | Aeronautical Radio and Flight Instruments | KZ | 2 | 2P+0C | L | PV |
| 21Y1LS | Air Traffic Services | KZ | 2 | 2P+0C | L | PV |
| 17Y1LL | Logistics of Passenger and Freight Air Transport Petra Skolilová Petra Skolilová (Gar.) | KZ | 2 | 2P+0C | L | PV |
| 20Y1LN | Location and Navigation Petr Bureš | KZ | 2 | 2P+0C | L | PV |
| 23Y1MK | Crisis Situation Management in Critical Infrastructure | KZ | 2 | 2P+0C | L | PV |
| 23Y1MU | Emergency Events Management Solution in Transport Infrastructure | KZ | 2 | 2P+0C | Z | PV |
| 17Y1MD | Marketing in Transportation | KZ | 2 | 2P+0C | Z | PV |
| 18Y1MT | Engineering Materials | KZ | 2 | 2P+0C | L | PV |
| 21Y1MP | Jaroslav Valach Jaroslav Valach (Gar.) Matlab for project-oriented study Lenka Hanáková, Vladimír Socha Vladimír Socha | KZ | 2 | 2P+0C | Z | PV |
| | Lieuka manakova, vianimir Socha vianimir Socha | | 1 | 1 | | I . |

| 15Y1MK | Modern History in Context: Every Day Life and Transport | KZ | 2 | 2P+0C | L | PV |
|--------|--|----|---|-------|---|----|
| 15Y1NE | German in the Economy and Society Eva Rezlerová | KZ | 2 | 2P+0C | Z | PV |
| 21Y1OH | Airline Business and Operations Peter Olexa, Eva Endrizalová Peter Olexa | KZ | 2 | 2P+0C | Z | PV |
| 23Y1OK | Protection of Critical Objects and Infrastructures | KZ | 2 | 2P+0C | L | PV |
| 20Y1OI | Fare Collection and Information Systems Patrik Horaž ovský, Milan Sliacky Milan Sliacky (Gar.) | KZ | 2 | 2P+0C | L | PV |
| 14Y1OJ | Object - oriented programming in JAVA | KZ | 2 | 2P+0C | L | PV |
| 14Y1OP | Operating System | KZ | 2 | 2P+0C | Z | PV |
| 17Y1OF | Personal Finance | KZ | 2 | 2P+0C | Z | PV |
| 20Y1OK | Road Lighting František Kekula | KZ | 2 | 2P+0C | L | PV |
| 11Y1PV | Parametrical and Multicriterial Programming Olga Vraštilová Olga Vraštilová (Gar.) | KZ | 2 | 2P+0C | Z | PV |
| 17Y1PM | Personnel Management | KZ | 2 | 2P+0C | L | PV |
| 12Y1PC | Pedestrian and Cycling Transport Denis Liutov | KZ | 2 | 2P+0C | L | PV |
| 14Y1PG | Computer Graphics | KZ | 2 | 2P+0C | L | PV |
| 14Y1P2 | Computer Aid of Transportation Projecting 2 | KZ | 2 | 2P+0C | Z | PV |
| 18Y1PS | Computer Simulations in Mechanics Petr Zlámal Petr Zlámal Petr Zlámal (Gar.) | KZ | 2 | 2P+0C | L | PV |
| 14Y1PI | Corporate Information System | KZ | 2 | 2P+0C | Z | PV |
| 14Y1PZ | Advanced Data Processing in Spreadsheets | KZ | 2 | 2P+0C | Z | PV |
| 21Y1PC | ATC Procedures and Activities Terézia Pilmannová Terézia Pilmannová | KZ | 2 | 2P+0C | Z | PV |
| 12Y1PD | Assessment of Transport Structures | KZ | 2 | 2P+0C | Z | PV |
| 20Y1PK | Product Quality Management Processes Martin Leso Martin Leso | KZ | 2 | 2P+0C | Z | PV |
| 14Y1PJ | C Programming Language | KZ | 2 | 2P+0C | Z | PV |
| 12Y1C1 | Designing Roads in Civil 3D I | KZ | 2 | 2P+0C | L | PV |
| 12Y1C2 | Designing Roads in Civil 3D II | KZ | 2 | 2P+0C | Z | PV |
| 14Y1PA | 3D Modeling in AutoCAD | KZ | 2 | 2P+0C | Z | PV |
| 16Y1PV | Operation, Construction and Maintenance of Vehicles | KZ | 2 | 2P+0C | L | PV |
| 12Y1PU | Organization Disposition of Railway Stations | KZ | 2 | 2P+0C | L | PV |
| 12Y1RU | Railway Lines Reconstruction | KZ | 2 | 2P+0C | Z | PV |
| 16Y1RE | Control and Electronic Vehicle Systems Josef Mik, Pemysl Toman | KZ | 2 | 2P+0C | Z | PV |
| 21Y1RZ | Human Resources Management | KZ | 2 | 2P+0C | L | PV |
| 17Y1ST | Titan Simulation | KZ | 2 | 2P+0C | L | PV |
| 21Y1SI | ATC Simulator Terézia Pilmannová | KZ | 2 | 2P+0C | L | PV |
| 20Y1SC | Sensors and Actuators | KZ | 2 | 2P+0C | L | PV |
| 17Y1SL | Sociology of Human Resources | KZ | 2 | 2P+0C | Z | PV |
| 11Y1SI | Transportation Software Engineering | KZ | 2 | 2P+0C | Z | PV |
| 16Y1KS | Quality and Reliability of Vehicles Jan Leistner, Filip Kotas, Jaroslav Machan, David Lehet | KZ | 2 | 2P+0C | Z | PV |
| 12Y1SU | Road Management and Maintenance Dagmar Ko árková, Otakar Vacín | KZ | 2 | 2P+0C | L | PV |
| 16Y1SO | Strategy and innovation in mobility | KZ | 2 | 2P+0C | Z | PV |
| 17Y1SK | Urban and Regional Rail Transport Systems Ji í Pospíšil Ji í Pospíšil (Gar.) | KZ | 2 | 2P+0C | L | PV |
| 11Y1TG | Graph Theory Lucie Kárná Lucie Kárná (Gar.) | KZ | 2 | 2P+0C | L | PV |
| 23Y1TP | Criminal Law in IT and Transportation | KZ | 2 | 2P+0C | Z | PV |
| 14Y1TI | Creating Interactive Internet Applications | KZ | 2 | 2P+0C | L | PV |
| 21Y1UL | Aircraft Maintenance Tomáš T ma | KZ | 2 | 2P+0C | L | PV |
| 14Y1UP | Editing of Theses in MS Word | KZ | 2 | 2P+0C | L | PV |
| 18Y1UK | Introduction of Rail Vehicles Jitka ezní ková, Josef Kolá, Josef Kolá Josef Kolá (Gar.) | KZ | 2 | 2P+0C | L | PV |

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

| Characteristics of TET-ITS from 2024 | the courses of this group of Study Plan: Code=Y1-BP-ITS-24/25 Name=Comp. Sel. Course 4/25 | es Bachelor F | ull-Time |
|--------------------------------------|---|-----------------------|-------------------|
| 21Y1AM | Aeronautical Information Management (AIM) | KZ | 2 |
| Definition and basic over | erview of AIS and AIM. Transition from AIS to AIM. Regulatory base. Provision of AIS/AIM in the Czech Rep. AIP (Aeronautio | 1 | |
| | System. NOTAM messages.PIB (Pre-flight Informtion Bulletin). AIC (Aeoronautical Inf. Circulars). Aeronautical Charts. EAD | · · | |
| (Quality Mng. System). | ADQ (Aeronautical Data Quality). AIXM (Aeronautical Inf. Exchnage Format). | | • |
| 00Y1XB | Active participation in a scientific project, workshop, short-term trip abroad | KZ | 2 |
| 20Y1AF | Alternative Forms of Transportation Project Financing | KZ | 2 |
| _ | forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt | 1 | _ |
| | direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of | - | - |
| | ecomunication projects. | | |
| 18Y1AM | Anatomy, Mobility and Safety of Man | KZ | 2 |
| 1 | princial structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circular | 1 | |
| 1 | uscular-skeletal system. Injury of human organs and musculo-skeletal system during traffic accidents. Mobility of ill and injur | | - |
| | ctive means and traffic safety regulations. | ou man and mo ne | atmont. Haman |
| 14Y1AV | Animation and Visualization | KZ | 2 |
| 1 | and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and | 1 | |
| | ering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animati | | - |
| | | 1 | |
| 12Y1AE | Applied Ecology | KZ | 2 |
| | ogical concepts and principles, ecosystem, ecological factors, energy flow through the ecosystem. Application of knowledge | | |
| | ology - origin and historical development. Landscape definition and classification. Success. Traffic constructions in the countries | ryside. Landscape | and nature |
| protection. Applied eco | | 1/7 | - |
| 20Y1AE | Applied Electronics | KZ | 2 |
| | onductor components, their principles, characteristics and typical connection diagrams. Semiconductor PN junction diodes, t | - | - |
| 1 . | ates. Functions of basic electronic circuits and methods for their designs (rectifiers, voltage regulator with Zener diode, trans | sistor as an amplific | er, operational |
| | g and noninverting amplifier). | | |
| 14Y1BE | Barrierless Transport | KZ | 2 |
| | accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Stud | - | _ |
| | ent roads, railway stations, public transport stops, terminal buildings, vehicles, public transport, information and orientation syst | ems and transport | ation technology. |
| | will be supplemented by practical examples. | | |
| 15Y1BO | Work Safety and Health Protection in Transportation | KZ | 2 |
| 1 | e, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportatio | n. Health protection | n programmes, |
| health insurance of hor | ne and foreign business trips, statistics, working practice. | | |
| 11Y1BK | Error Detection Codes for Interlocking Systems | KZ | 2 |
| | id methods for its assuring. Safety codes linear codes, cyclic codes, BCH codes, Reed-Solomon codes. Transmission channe | ls, detection of tran | nsmission errors, |
| probability of undetecte | d error. Design and assessment of detection codes; requirements of the European standard EN 50159. | | |
| 21Y1BS | Unmanned aircraft systems 1 | KZ | 2 |
| Unmanned Aviation De | velopment. Aircraft design. Legislation in force in the Czech Republic. Planning and execution of the flight. Airspace division. | Operational risks | and operational |
| procedures. Practical fli | ghts. | | |
| 14Y1BM | Biometric Methods | KZ | 2 |
| Basic biometric terms, | uthentication methods, principles and performance measurement of biometric systems, overview of biometric technologies | 1 | is recognition, |
| retina recognition meth | od, 2D and 3D face recognition, vein patterns on the wrist, ear biometrics, fingerprint recognition, skin spectroscopy, behavi | oral methods, the u | se of biometrics |
| in transport applications | s, safety and risks of biometric technologies. | | |
| 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 R | | |
| 1 | development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train con | - | |
| 1 ' | ay junctions. Excursions and projections. | . , | , |
| 12Y1DS | Project Documentation in Practice | KZ | 2 |
| | creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining proce | 1 | |
| creation of some project | | J | J |
| | • | | |

| 17Y1EV | Public Sector Economy | KZ | 2 |
|---|---|---------------------------------------|-------------------------|
| | theory of public sector, public choice theory, externalites, decisions about public finance allocation, economic assessment of public finance allocation finance | | |
| | ate budget, management of public projects a their economic efficiency assessment, way of elaboration of PPP projects, funding | | |
| 23Y1EH | Electronics and hardware in security of transportation | KZ | 2 |
| • | f signals. Passive circuits, properties, basic measurements. Passive filters, semiconductors. Operational amplifiers, basic cir cuits. AD converters. Connection of analog and digital parts. Basic blocks of digital signal processing. Measurement processin | - | |
| in electronics. | salic. 715 control cit. Control cit. of an alog and digital parts. Each blocks of digital bights proceeding, model cities in proceeding | g. Doorgin and lab | iodionimoniodo |
| 20Y1EK | Qualification in Electrical Engineering | KZ | 2 |
| - | n measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock haza | 1 1 | abeling, nominal |
| - | ed 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. | | |
| 16Y1EN | Energy Requirements of Vehicles | KZ | 2 |
| • | g inertial of the vehicles. Types of energy - kinetic, static, heat, chemical and others. Ways of energy change into kinetic enel engine. Energy accumulation means, accumulator, flywheel, fuel cell. Energy recuperation. WTW analysis. | rgy. Combustion e | ngine, electric |
| 20Y1EA | Environmental Aspects of Transport | KZ | 2 |
| | , weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabili | | |
| | ts and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transp | | |
| 15Y1EH | European Integration within Historical Context | KZ | 2 |
| - | tion of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism | | |
| | r's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and | d its consequence | s for Europe. |
| | erman relationship - a driving power of starting European integration. Experimental Methods in Mechanics | KZ | 2 |
| | experimental mechanics. Sensors for mechanical testing. Overview of experimental methods. Destructive and non-destructive | | |
| | s and sample preparation. Tensile and bending tests. Electrical resistance strain gages. Optical based strain measurement. F | | |
| Instrumented hardness t | esting. Introduction to electron microscopy. Errors in measurement. | | |
| | French Area Studies and Transportation | KZ | 2 |
| | regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air tra | · · · · · · · · · · · · · · · · · · · | erminology. |
| | re. Current political system. System of education, studying in France. Selected authors of French literature. French gastrono | | |
| 14Y1HW | Computer Hardware pasics of logical circuits design and their realization using FPGA. In detail, description of computer architecture and separate | KZ | 2 - controllers |
| arithmetic and logical un | | , parts acsigning | controllers, |
| | History of Civil Aviation | KZ | 2 |
| | relopment of aircrafts lighter than air. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of | of airports in the C | zech Republic. |
| • | aviators. Helicopters. CSA airplanes. Development of aircrafts in Czechoslovakia between the years 1945-1989. Classic era | of aviation. Golde | n era of civil |
| | civil aviation. Airline companies. Supersonic flying. | 1/7 | |
| | History of City Mass Transport sport in the world, development of tram, bus and trolley-bus systems. History of transport networks in the world, current tren | KZ And developme | 2 ents of tariff and |
| | bry of city transport in Prague and Brno. History of tram, bus and trolley-bus operation systems in the Czech Republic and S | | sino or tariir and |
| 12Y1HD | Traffic Noise | KZ | 2 |
| Acoustic introduction, ba | sic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regulat | tions. Creation acc | oustic climate in |
| · · · · · · · · · · · · · · · · · · · | acoustic, noise transmission, soundproofing. Types of noise sources in area. Determination of acoustic situation in the area | of interest. Metho | odology of |
| | ment of transport noise. Acoustic studies, measuring protocol. | 1/7 | |
| | Work Hygiene and Ergonomics in Traffic upational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of these | KZ | 2 of workers |
| - | of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technology to | | |
| · · | the field of transportation; relevant legislature. | ., | |
| 16Y1IS | Interactive simulators and simulations | KZ | 2 |
| | oplication of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical m | | methods. |
| | namics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation software and interactive simulation. | | |
| 12Y1KN | Combined Transportation | KZ KZ | 2 |
| 12Y1KP | tegy and legislation. Load units. Means of transport in combined transport. Combined transport systems. Transshipping area Communication and Promotion of Transport Projects | KZ | 2 |
| | Relations and the power of public opinion. Work and tasks of PR department and press spokesperson. Communication with | 1 | _ |
| | ommunication strategy of transport projects. Systematic goodwill building. Crisis situations in communication and preparatio | | |
| influence of political mar | keting and political PR on transport projects. Lobbing. | | |
| 20Y1KP | Communication and presentation skills | KZ | 2 |
| · · | I their fulfillment, current communication networks, work with various sources, formal requirements of emails and final theses | | - |
| | elligence, manipulation and way of working with it, coping with stressful situations, formal requirements of presentations, way on skills, presentation skills in online environment. | ys or communican | on during |
| 23Y1KM | Crisis Management | KZ | 2 |
| | of crisis management with direction to Rescue system (IZS). After introduction to safety domain, there are terms and knowled | 1 1 | |
| | gets; IZS-crisis management-crisis planning; and basic legislation. Practical part is concentrated to responsibility matrix com | - | |
| 23Y1KO | Quantum Physics and Optoelectronics | KZ | 2 |
| | sics. Application of quantum physics in practice. Optoelectronics. Production of optoelectronics components. | | |
| | Cybernality | KZ | 2 |
| | ivior on the computer network and computer systems. Cybernetic crime technology. Theory basis and models. Cyberterrorism | | |
| 23Y1KB Basic concepts of securi | Cyber security in transportation ity and cyber security, virtual cyberspace and communities, taxonomy of crimes in c | KZ cvberspace, social | 2 Limpacts, social |
| • | k technology, information security, cyber attacks on telematics systems, security of systems with artificial intelligence, norms | - | ,2000, 000101 |
| | Aeronautical Radio and Flight Instruments | KZ | 2 |
| | of aircraft instrumentation, aerometric instrumentation, Earth magnetism, aircraft electric equipment, gyroscopic instrumentation | 1 1 | |
| other aircraft equipment, | engine instrumentation, warning and recording systems, instrumentation operational requirements, radiocommunication an | d radionavigation | |

| 21Y1LS Air Traffic Services KZ 2 | |
|--|------------|
| Airspace structure in Czech Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, APP a ACC control. History of at USA and Czechoslovakia. ATS - Model of financing. Training System of Air Traffic Controllers. Future development of ATS. | f ATS |
| 17Y1LL Logistics of Passenger and Freight Air Transport KZ 2 | |
| Logistics airline passenger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial transport process passenger | s and |
| air cargo. Information systems in air transport. Global distribution systems. 20Y1LN Location and Navigation KZ 2 | |
| Description and examples of road networks, localization on the network. Routing algorithms, their properties and implementation. Description and examples of datasets for finding | ng |
| transport connections, routing algorithms, their properties and implementation. | |
| 23Y1MK Crisis Situation Management in Critical Infrastructure KZ 2 Determination of critical infrastructute elements on all levels, their protection systems, responsibilities of particular agencies of the state administration and the self-government, | and |
| their responsibilities to anounce particular safety provisions. Physical and cyber protection of critical infrastructure with special attention to the soft targets. | anu |
| 23Y1MU Emergency Events Management Solution in Transport Infrastructure KZ 2 | |
| Basic solutions of emergency events with emphasis of the transport infrastructure events and their solution management. Knowledge in the emergency planning and special process. | dures |
| in liquidation work within the transport infrastructure. 17Y1MD Marketing in Transportation KZ 2 | |
| General principles of marketing applied to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transport and the resulting difference | es in |
| the application of marketing. | |
| 18Y1MT Engineering Materials KZ 2 Systematic overview of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers and composites, attention is | paid |
| to biological materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's selection charts. | paiu |
| 21Y1MP Matlab for project-oriented study KZ 2 | |
| The subject's syllabus is focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exercises will be prepared according a students' requests. Individual exercises will be prepared according to the students' requests and according to the students' requests. | |
| particular examples, based on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improvement of students' Matlab skills 14Y1MP Modeling Complex Assemblies and Models in Parametric Modeller KZ 2 | <i>i</i> . |
| Assemblies programming - tools and methodology of working subassemblies and assemblies, sheet metal parts modelling, welded assemblies, pipelines, and distribution lines. | |
| Photorealistic output rendering - physical and material properties, lighting sources. MKP - visual example. | |
| 15Y1MK Modern History in Context: Every Day Life and Transport KZ 2 Historical overview of modern history of every day life, science, technology and transport in a wider context. | |
| 15Y1NE German in the Economy and Society KZ 2 | |
| Recent economic and social issues of German speaking countries and of the EU. Reading and listening of texts. Lexical, grammatical and semantic analysis of texts. Discussion | on |
| 21Y1OH Airline Business and Operations KZ 2 | |
| The course provides a comprehensive view of the commercial, operational and transportation activities of air transport companies. It focuses on the organizational structure of companies. | anies, |
| various aspects of their strategy, economic and operational indicators. It introduces students in detail to operational processes and the essentials of transportation processes. It pro | vides |
| a basic view of the economic aspects of air transport. 23Y10K Protection of Critical Objects and Infrastructures KZ 2 | |
| Types of technological systems, critical item, risks and their courses, criticality, vulnerability, connectivity, dependability, resilience, failure, protection, safety of critical objects and connectivity, dependability, resilience, failure, protection, safety of critical objects and connectivity, dependability, resilience, failure, protection, safety of critical objects and connectivity, dependability, resilience, failure, protection, safety of critical objects and connectivity, dependability, resilience, failure, protection, safety of critical objects and connectivity, dependability, resilience, failure, protection, safety of critical objects and connectivity, dependability, resilience, failure, protection, safety of critical objects and connectivity, dependability, resilience, failure, protection, safety of critical objects and connectivity, dependability, resilience, failure, protection, safety of critical objects and connectivity, dependability, resilience, failure, protection, safety of critical objects and connectivity, dependability, resilience, failure, protection, safety of critical objects and connectivity, dependability, resilience, failure, protection, safety of critical objects and connectivity objects and conne | critical |
| infrastructures. | |
| 20Y10I Fare Collection and Information Systems KZ 2 Fare collection systems in public transport and their components (on-board units, validators, turnstiles,). Information systems and their components for users (timetables, map | ns |
| panels) and operators (cycles, location or current delay of vehicles,). The issue of tariff systems. Other examples of clearance systems (parking). | 3, |
| 14Y1OJ Object - oriented programming in JAVA KZ 2 | |
| Objective thinking. Encapsulation. Classes. Attributes. Access modifiers. Methods and overloading. Special methods (constructors, getters / setters). Basic object methods. Refedata types. Inheritance. Polymorphism. Statics, constants, interfaces, abstract classes, enum, packages, exceptions, collections, generics, lambda expressions, anonymous func | |
| 14Y10P Operating System KZ 2 | tions. |
| Distributions. Installation GNU/Linux OS. X-window system. Rights management - users and groups, ACL rights. Filesystems and attributes. Programs and processess. OS boot, | , |
| runlevels. Basic console programs / commands. Config files. SW management, package systems. Programs in graphic shell - text, spreadsheet, graphic editors, sound, video an | d |
| communication. Services management. Safe and secure configuration of OS. Remote administration. 17Y10F Personal Finance KZ 2 | |
| Personal finance (budget, financing of basic living needs), debt (loans and credits, payment instruments, interest and fees, debt trap), financing of housing (rent, mortgage, savir | ngs, |
| consumer loans, refinancing), savings and investments (investment horizon, return, risk, investment strategy), insurance (insurance types, suitability and adequacy), securing the | future |
| (retirement savings and insurance). 20Y1OK Road Lighting KZ 2 | |
| Basic lighting quantities and terms, street lighting components (luminaires, control cabinets for street lighting, street lighting cables), characteristics of luminaires (lifetime of light sou | urces, |
| light distribution), standards, measurement of illuminance and luminance in road lighting, tunnels, conceptual approach to street lighting design, lighting calculations in DIALux a | ınd |
| Relux, street lighting control systems. | |
| 11Y1PV Parametrical and Multicriterial Programming KZ 2 Solution to the problem of linear programming with a parameter in objective function, on right sides and in the matrix of coeficients of linear constraints. Computation of efficient sol | ution. |
| 17Y1PM Personnel Management KZ 2 | |
| Human sources, work group, man as personality, planning, choice, evaluation and education of human sources, work adaptation, teamwork, intercultural communication. | |
| 12Y1PC Pedestrian and Cycling Transport KZ 2 Routes for pedestrians. Pedestrian crossings. Modifications for blind, dim-sighted and disabled people. Design of cycle routes network. Ways of cycle route layout and design param | neters |
| for cyclists. Separation of cyclists from other transport modes. Cycle tracks and its design - one way streets, reserved traffic lanes, bus stops, crossings with other transport modes. | |
| crossroads. Traffic signs and road marking for cyclists. | |
| 14Y1PG Computer Graphics KZ 2 | |
| Basic formats of graphic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with editing programs (within the us level scope) using layers, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics cards. | ,eı |
| 14Y1P2 Computer Aid of Transportation Projecting 2 KZ 2 | |
| Overview of CAx application for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, data exchange). Advanced by | |
| modification (attributes, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transition curve, cross-and longitudes). Basics of 3D modelling. | udinal |
| 20000.7. 20000 C. 55 Housemag. | |

| 18Y1PS | Computer Simulations in Mechanics | KZ | 2 |
|--|--|--|--|
| • | of tools for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model develop | =" | |
| · · · · · · · · · · · · · · · · · · · | Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary conditions modal analysis. Introduction to complex nonlinear problems. | and application o | Tine load. Basic |
| 14Y1PI | Corporate Information System | KZ | 2 |
| | edge, components of information system, syntatic and semantic sense of data, structure of corporate information system, pa | rticular information | n system |
| | on, storage, etc.), corporate information politic and information control, risks of information system operation, legal environment | nt of information sy | stem operation, |
| | n, information system security, data protection, safety politics. | 1/7 | |
| 14Y1PZ | Advanced Data Processing in Spreadsheets with principles of working in a spreadsheet. Graphic layout of the table appearance, formatting of numbers, insertion of form | KZ | 2 |
| | with principles of working in a spreadsheet. Graphic layout of the table appearance, formatting of numbers, insertion of formattin ion. Working with large spreadsheets, filters, advanced filters, database functions. Pivot tables and charts, conditional formattin | | |
| • | s and questions from various companies and training. | 9, | ,, |
| 21Y1PC | ATC Procedures and Activities | KZ | 2 |
| | dures, basics of communication and phraseology, aircraft identification, spacing and traffic coordination. In addition, the cours | | affic control at |
| | ibility operational procedures. Students will during the course learn basic safety management applications applied across the | | |
| 12Y1PD | Assessment of Transport Structures t structures, the EIA process. Multicriteria assessment methods, risk analysis, SWOT analysis. Landscape character, possibilitie | KZ | 2 |
| · · · · · · · · · · · · · · · · · · · | the landscape. Rating fragmentation and landscape connectivity in the preparation of linear structures. Practical examples of | = | |
| the environment. | and tallacouper talling magnitudes and tallacoupe commonly in the proparation of modification in action of actions of the control of the cont | | o zananigo on |
| 20Y1PK | Product Quality Management Processes | KZ | 2 |
| General principles of or | ganization management. Management systems and international standards; quality management systems. Quality products, | processes, syster | ns. A framework |
| | s management, management principles. Principles of process management, monitoring and measurement systems management | nt. Uniform framew | ork of standards |
| | nt. Process management principles. Metrology and testing. Product certification. | 1/7 | |
| 14Y1PJ | C Programming Language ge. Preprocessor, basics of the C language (data types, syntax, commands), functions, pointes, dynamical memory allocation, | KZ | 2 tres and unions |
| | tract data types (FIFO, LIFO, list), programming techniques (sorting, searching, recursion), using bitwise oprerators. | string, mes, struct | ares and unions. |
| 12Y1C1 | Designing Roads in Civil 3D I | KZ | 2 |
| The course is devoted t | o the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go throu | gh the complete c | lesign of this |
| | g, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The | ne course also inc | ludes a basic |
| | building design in the real-life profession. | 1/7 | |
| 12Y1C2 | Designing Roads in Civil 3D II o the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go throu | KZ | 2 |
| | g, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. Th | - | - |
| | d. Students learn to design intersections. | ., | |
| 14Y1PA | 3D Modeling in AutoCAD | KZ | 2 |
| | etric modeller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup creation, obje | ct data creation, w | ork with data |
| | database. Basic definition of work with lights, materials and reflexes. Models presentation. | 1/7 | |
| 16Y1PV | Operation, Construction and Maintenance of Vehicles duction. Vehicle maintenance. Vehicle diagnostics. Maintenence and repair plans. Engine maintenance and emission measure | KZ | 2 on machanism |
| General principles of er | | ment. nansmissi | on mechanism. |
| 12Y1PU | Organization Disposition of Railway Stations | KZ | 2 |
| Connecting station. Pas | senger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zo | ne stations. Form | ation yards. |
| | ology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic railway r | etwork. | |
| 12Y1RU | Railway Lines Reconstruction | KZ | 2 |
| | erational, maintaining lines and stations, geometrical alignment of railway line, vehicles for railway superstructure and substru ons, preparation of railway lines reconstruction and maintenance, process of ralway line reconstruction. | acture maintenanc | e, scheduling |
| 16Y1RE | Control and Electronic Vehicle Systems | KZ | 2 |
| | regulation. Tools for analytical solution, linear system description. Basic types of a regulator (PID), properties, advantages, disa | | |
| and hybrid drive control | . Electric drive. Vehicle communication bus (CAN, LIN, FlexRay, ISObus, KWP2000 protocole etc.). Vehicle electronic control, | , safety, communic | cation and |
| comfort systems. | | | |
| 21Y1RZ | Human Resources Management | KZ | 2 |
| • | resources in the organization and related disciplines file. Substance, importance and challenges of human resources manage resource management. Human resource planning. Search, recruitment and selection of employees. Motivation, evaluation and | | |
| | esource management. Human resource planning, Search, reclutinent and selection of employees, Motivation, evaluation and ncies of employees. Education of employees. Planning career management. | remuneration of s | stan. Fositioning, |
| 17Y1ST | Titan Simulation | KZ | 2 |
| | game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same produ | | |
| determine the quantity | and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequer | nces of their decis | ions by the form |
| | ports and they use this information for other business decisions. | | |
| 21Y1SI | ATC Simulator | KZ | 2 Dragtical |
| | simulation environment, acquiring basic habits, aircraft identification procedures, vectoring, level changes, ATC clearance, us asic vectoring, early application of vertical separation, EST and REV message passing. Practical exercises in the APPROAC | · · | |
| - | | rraroa, praotioning | arrivar arra |
| departure management | procedures, conflict resolution. | | |
| 20Y1SC | Sensors and Actuators | KZ | 2 |
| 20Y1SC Principles of sensors an | Sensors and Actuators d actuators. Basics of measuring theory and actuating influence. The respective technologies and construction principles. Sensor | | |
| 20Y1SC Principles of sensors an state (temperature, hun | Sensors and Actuators d actuators. Basics of measuring theory and actuating influence. The respective technologies and construction principles. Sensor inditity), chemical and particle flow values. Electrical, pneumatic and hydraulic actuators and solid phase elements. | rs of mechanical, e | electro-magnetic, |
| 20Y1SC Principles of sensors an state (temperature, hun 17Y1SL | Sensors and Actuators d actuators. Basics of measuring theory and actuating influence. The respective technologies and construction principles. Sensor idity), chemical and particle flow values. Electrical, pneumatic and hydraulic actuators and solid phase elements. Sociology of Human Resources | rs of mechanical, e | electro-magnetic, |
| 20Y1SC Principles of sensors an state (temperature, hun 17Y1SL Human resources and t | Sensors and Actuators d actuators. Basics of measuring theory and actuating influence. The respective technologies and construction principles. Sensor inditity), chemical and particle flow values. Electrical, pneumatic and hydraulic actuators and solid phase elements. | rs of mechanical, e | electro-magnetic, |
| 20Y1SC Principles of sensors an state (temperature, hun 17Y1SL Human resources and t of the organization. | Sensors and Actuators d actuators. Basics of measuring theory and actuating influence. The respective technologies and construction principles. Sensor idity), chemical and particle flow values. Electrical, pneumatic and hydraulic actuators and solid phase elements. Sociology of Human Resources heir importance, work group as a special kind of social group, communication, personal management, modern management, in the contraction of the contractio | rs of mechanical, e | lectro-magnetic, 2 Dlanning, culture |
| 20Y1SC Principles of sensors an state (temperature, hun 17Y1SL Human resources and to f the organization. 11Y1SI | Sensors and Actuators d actuators. Basics of measuring theory and actuating influence. The respective technologies and construction principles. Sensor idity), chemical and particle flow values. Electrical, pneumatic and hydraulic actuators and solid phase elements. Sociology of Human Resources | KZ KZ Numan resources p | 2 Dlanning, culture |

| · · · · · · · · · · · · · · · · · · · | uality and Reliability of Vehicles | KZ | 2 |
|--|--|--|---|
| | r in design, development, production and operation of vehicles. Definition and possible approach to quality and reliability. | | |
| | , QFD (Quality Function Deployment), DFx (Design for Assamly, Manufacturying, Quality, Services) and other methods of quality and reliability, data collection. | used in industria | l applications. |
| | pad Management and Maintenance | KZ | 2 |
| | thip of roads in the Czech Republic and the administration of the road at the state and county level. It is presented develop | 1 | |
| | egy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and rep | | |
| classroom as well as investi | ment activity in highway engineering. | | |
| | rategy and innovation in mobility | KZ | 2 |
| | lefinition. Innovation strategy. Innovation life cycle and ecosystem, main sources and funding opportunities. Successful inr | | _ |
| | rint method and its use. Innovative business model - main patterns and examples, design, strategy, processes and outloc ion strategy. Customer and value map, design and testing. | ok (business plan | and possibilities |
| | ban and Regional Rail Transport Systems | KZ | 2 |
| | demand, modal-split, distribution of passenger flows on public regional transport lines. Optimization of line management, l | 1 | |
| - · | Vehicle circulation creation. Optimizing driver shifts and arranging them in turnus. Effects of barrier-free and public transport | _ | _ |
| marketing. | | | |
| 11Y1TG Gr | raph Theory | KZ | 2 |
| • | ology of graph theory, graph representation. Problems of graph theory, problem instance. Graph search algorithms, trees, | | - |
| | , bipartite graph matching, flow networks, circulations, critical path method, traveling salesman problem. Problem of existence | e and optimization | n and algorithms |
| | onal complexity, dealing with NP-complete problems, heuristic approach. | V7 | 2 |
| | riminal Law in IT and Transportation into legal order, conception of culpability and criminal delict, consequency of other legal standards. international treaty an | KZ | 2 vestigation of |
| | minal court cases, practical examples. | ia ciiiiiiai iaw, iii | vestigation of |
| · · · · · · · · · · · · · · · · · · · | reating Interactive Internet Applications | KZ | 2 |
| | guage PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions. | | |
| in PHP language. | | | |
| 21Y1UL Air | rcraft Maintenance | KZ | 2 |
| Aircraft operations and techn | nical operations. Maintenance and work processes. Defects search methods, status check diagnostic tools. Selection and o | qualification of avi | ation personnel. |
| | aintenance. Optimization of time maintenance intervals. Regulation no. 1321/2014 Part 145. Human factors of aircraft main | ntenance. Regula | tion of director |
| | nce. Seminars will be focused on practical application. | 1/7 | |
| | diting of Theses in MS Word | KZ | 2 |
| | to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, created Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless | | |
| | centrate mainly on writing a thesis. | outing alooolium | 0.10 0.10 0.10000, |
| 18Y1UK Int | troduction of Rail Vehicles | KZ | 2 |
| 1011010 | iroduotion of rail vonioloo | I\Z | _ |
| | arameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion | 1 | · - |
| Basic characteristics and patrack resistance. Total running | arameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion in gresistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehicle. | train and unit trair | ns. Rolling and |
| Basic characteristics and pa track resistance. Total running and electric drive. Design co | arameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion of motion of gresistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehicles oncept rail vehicles and drive of wheel set. | train and unit trair e - hydromechani | ns. Rolling and c, hydrodynamic |
| Basic characteristics and patrack resistance. Total running and electric drive. Design contact and Patrack Pt. Pt. 12Y1VR Pt. Pt. 12Y1VR | arameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion in gresistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehicle oncept rail vehicles and drive of wheel set. ublic Transport in Cities and Regions | train and unit trair e - hydromechani KZ | ns. Rolling and c, hydrodynamic |
| Basic characteristics and patrack resistance. Total running and electric drive. Design contact and Patrack Possible Poss | arameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion in gresistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehicle oncept rail vehicles and drive of wheel set. Ublic Transport in Cities and Regions | train and unit trair e - hydromechani KZ nes. Principles of | ns. Rolling and c, hydrodynamic 2 line tracing. |
| Basic characteristics and patrack resistance. Total running and electric drive. Design of 12Y1VR Professional and political pill Basic operating parameters | arameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion in gresistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehicle concept rail vehicles and drive of wheel set. Jubic Transport in Cities and Regions Ilars of public transport. Accessibility of public transport. Transport demand management and directional coordination of lies and transport variations. Types of lines according to their routing and basic operating parameters. Time coordination of lies | train and unit trair e - hydromechani KZ nes. Principles of | ns. Rolling and c, hydrodynamic 2 line tracing. |
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| 14Y1ZJ | Fundamentals of programming in JAVA | | | | KZ | 2 |
|--------------------------|--|---|---------------|----------------|------------------|--------------|
| - | SE Platform. IDE Installation and First Project. Comments. Variables and Type System | . Operators. User Inpu | ut and Parsii | 1 | 1 | ersion. Text |
| | al Methods. Terms. Relational Operators and Switches. Cycles for, while, foreach. Field | declaration, initializa | ation, method | ds for field w | vork. ASCII. Fu | nctions, |
| | e, recursion. Program creation. | | | | | |
| 12Y1ZU | Principles of Urbanism | • | | | KZ | 2 |
| | y and settlement building. Functional components and their mutual relations (working, l with a certain prevailing function, forms of their development. Brief overview of land-us | • | sportation). | Spacial arra | ngement of set | tiements. |
| 15Y1ZV | East-West dichotomy: Prelude to the Cold War | oc planning. | | | KZ | 2 |
| - | plution of the "West" and "East" from the 1500s. Focus on the history in the period between | en 1850 nad 1950. Mil | estones and | 1 | 1 | _ |
| | ury and the beginning of the 20th century. Revolutions, the causes and consequences. | | | | | |
| Economic and financia | history. Social changes. Discussions on texts, sources. | | | | | |
| 16Y1ZL | Vehicle Testing, Legislation and Construction | | | | KZ | 2 |
| | oike costruction, aggregate computing, driving resistance, build and parameters of traction | | • . | | , trucks, buses, | motorbikes |
| legislation in the EU ar | d in the world, technical legislation creation, testing methods, vehicle tests, accelerated | tests, mathematical i | modelling in | testing. | | |
| The role of the | e block: V | | | | | |
| Code of the g | oup: VP-BP-TET-20/21 | | | | | |
| Name of the g | roup: Bachelor Full-Time TET voluntary | | | | | |
| Requirement of | credits in the group: | | | | | |
| Requirement of | courses in the group: | | | | | |
| Credits in the | e . | | | | | |
| Note on the gi | • | | | | | |
| Code | Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) | Completion | Credits | Scope | Semester | Role |
| | Tutors, authors and guarantors (gar.) | | | | | |
| 14DDK | Digital Support for Designing of Roads and Highways | 7 | | 00120 | 7 | \/ |

| Code | Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.) | Completion | Credits | Scope | Semester | Role |
|--------|---|------------|---------|-------|----------|------|
| 14DPK | Digital Support for Designing of Roads and Highways Libor Žídek, Drahomír Schmidt Drahomír Schmidt (Gar.) | Z | 0 | 0P+2C | Z | V |
| 14DZT | Digital Support for Railway Lines Martin Brumovský Martin Brumovský (Gar.) | Z | 0 | 0P+2C | L | V |
| 11SCFZ | Seminar of Physics Old ich Hykš, Jana Kuklová, Zuzana Malá, Tomáš Vít Zuzana Malá Zuzana Malá (Gar.) | Z | 0 | 0P+2C | Z | V |
| 21SLD | Seminar of Air Transport Jakub Kraus, Vladimír Plos, Natalia Guskova Vladimír Plos | Z | 0 | 0P+2C | L | V |
| 18SPP | Seminary from Elasticity and Strength Jan Vy ichl, Tomáš Doktor Jan Vy ichl Jan Vy ichl (Gar.) | Z | 0 | 0P+2C | Z | V |
| 18STD | Seminary from Technical Documentation | Z | 0 | 0P+2C | Z | V |
| 18SS | Seminary from Structural Analysis Jan Vy ichl | Z | 0 | 0P+2C | L | V |
| 11SSF | Secondary School Physics Course Zuzana Malá Zuzana Malá Zuzana Malá (Gar.) | Z | 0 | 0P+2C | L | V |
| TVKLV | Physical Education Course | Z | 0 | 7dní | L | V |
| TVKZV | Physical Education Course | Z | 0 | 7dní | Z | V |

| | Zuzana Malá Zuzana Mala Zuzana Mala (Gar.) | | | | | |
|----------------------------|--|----------------------|-----------------|---------------|---------------|-----------------|
| TVKLV | Physical Education Course | Z | 0 | 7dní | L | V |
| TVKZV | Physical Education Course | Z | 0 | 7dní | Z | V |
| Characteristics o | f the courses of this group of Study Plan: Code=VP-BP-TET-20/21 N | Name=Bache | elor Full- | Time TET | voluntar | у |
| 14DPK | Digital Support for Designing of Roads and Highways | | | | Z | 0 |
| Seminars possibilities | of technical processing problems focused on designing of roads and highways. | | | | | |
| 14DZT | Digital Support for Railway Lines | | | | Z | 0 |
| Seminars possibilities | of technical processing problems solved in the field of railway lines. | | | | | |
| 11SCFZ | Seminar of Physics | | | | Z | 0 |
| Solving problems on ki | nematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mecha | anics, thermodyn | amics. | | | |
| 21SLD | Seminar of Air Transport | | | | Z | 0 |
| History, definitions, teri | minology, basic rules. VFR / IFR. Basics of aerodynamics. Propulsion of aircraft. Aircraft desi | gn. Basics of nav | igation, radi | o navigation | Weight, ba | lance, |
| | nning, optimization of speed and heights, minimum fuel. Limitations of operation, maintenan | ice, service life of | f aircraft. Tra | ffic manager | ment, groun | d handling, |
| security. Air crew. Airlin | es and economics. Space technologies. | | | | | |
| 18SPP | Seminary from Elasticity and Strength | | | | Z | 0 |
| • | Tension and compression. Bending of beam. Shear stress during bending of beam. Design a | and analysis of cr | oss section | of beam. An | alysis of def | lection curve |
| of beam. Torsion of circ | ele cross section. Combined loading. Stability of compressed bar and buckling. | | | | | |
| 18STD | Seminary from Technical Documentation | | | | Z | 0 |
| Technical standards, in | ternational standardization, technical drawings, representation of technical objects, technical | al diagrams and c | charts, dime | nsional and o | geometrical | accuracy, |
| arrangement of drawin | g sheets. | | | | | |
| 18SS | Seminary from Structural Analysis | | | | Z | 0 |
| Examples for practise. | General system of forces. Reactions of mass objects and compound systems. Internal force | s on statically de | terminate be | am and sim | ole framewo | rk. Application |
| of principle of virtual w | orks for calculation of reactions of staticaly determinate systems. Determination of axial force | es in truss constr | ruction - met | hod of joints | and method | d of sections. |
| Geometry of cross sec | tions. Plane fiber polygons. | | | | | |

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

Code of the group: VP-BP-TET-ITS

Name of the group: Bachelor Full-Time TET-ITS voluntary

Requirement credits in the group: Requirement courses in the group:

Credits in the group: 0 Note on the group:

| Code | Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.) | Completion | Credits | Scope | Semester | Role |
|--------|---|------------|---------|-------|----------|------|
| 11SEMO | Seminar of Electromagnetic Field and Optics Old ich Hykš, Zuzana Malá, Tomáš Vít Zuzana Malá Zuzana Malá (Gar.) | Z | 0 | 0P+2C | L | V |

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

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

List of courses of this pass:

| Code | Name of the course | Completion | Credits |
|---------------------|---|------------------------|---------------|
| 00Y1XB | Active participation in a scientific project, workshop, short-term trip abroad | KZ | 2 |
| 11CAL1 | Calculus 1 | Z,ZK | 7 |
| Sequence of real no | umbers and its limit. Basic properties of mappings. Function of one real variable, its limit and derivative. Indefinite integral, Newton inte | gral, Riemann integ | ral, improper |
| | Riemann integral. First-order differential equations, linear differential equations. | | |
| 11CAL2 | Calculus 2 | Z,ZK | 5 |
| Linea | r differential equations and their systems, differential calculus of functions of several real variables. Riemann integral in Rn. Line and | surface integrals. | |
| 11EMO | Electromagnetic Field and Optics | Z,ZK | 4 |
| | Electric field. Electric current. Magnetic field. Electromagnetic field. Optics. Basics of solid-state physics. | | |
| 11FYZ | Physics | Z,ZK | 5 |
| | Kinematics, dynamics, Newton's laws, force fields, mechanics of continuum, thermodynamics, introduction to electrostatics and ele | ctric current. | • |
| 11GIE | Geometry | KZ | 3 |
| 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 |
| | acceleration of a particle moving on a curved path. | | |
| 11LA | Linear Algebra | Z,ZK | 3 |
| Vector spaces (line | ar combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and th | eir solvability. Deter | minants and |
| | their applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classifications | tion. | |
| 11MAMY | Mathematical Methods | Z,ZK | 7 |
| | deling. The system and its mathematical description. Types of signals. Basic system responses. Convolution. State models. Principle | - | - |
| state description. | Data measurement. Uncertainty in measured data. Data normalization. Preparation of data for further processing. Linear state mode | el over noisy data. K | alman filter |
| | condition estimation. Statistical learning methods. Regression, classification. | | |
| 11SCFZ | Seminar of Physics | Z | 0 |
| | Solving problems on kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermodynamics of particle systems and rigid body. | | |
| 11SEMO | Seminar of Electromagnetic Field and Optics | Z | 0 |
| | Solving problems on electric and magnetic field, electromagnetic field, optics and basics of solid-state physics. | | |
| 11SSF | Secondary School Physics Course | Z | 0 |
| | Basics of kinematics, dynamics, thermodynamics, electric field and magnetic field. | • | • |
| 11STAT | Statistics | Z,ZK | 4 |
| Basics of probabil | ity Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Parameters | etric tests Nonparar | netric tests |
| | Regression and correlation analysis | | |
| 11TGA | Graph Theory and its Applications in Transport | Z,ZK | 4 |
| Basic terms of | graph theory, paths in graphs, flows in networks, location problems, design problems on graphs, optimum routing, use of graphs in | other scientific disc | iplines. |
| 11X31S | Project 1 ITS | Z | 2 |
| 11X32S | Project 2 ITS | Z | 2 |
| 11X33S | Project 3 ITS | Z | 2 |
| 11Y1BK | Error Detection Codes for Interlocking Systems | KZ | 2 |
| | n and methods for its assuring. Safety codes linear codes, cyclic codes, BCH codes, Reed-Solomon codes. Transmission channels, | 1 | 1 |
| | probability of undetected error. Design and assessment of detection codes; requirements of the European standard EN 50 | | , |

| 11Y1PV | Parametrical and Multicriterial Programming | KZ | 2 |
|--|--|--|---|
| | olem of linear programming with a parameter in objective function, on right sides and in the matrix of coeficients of linear constraints. Co | | |
| 11Y1SI | Transportation Software Engineering | KZ | 2 |
| - | oftware engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and implemer and practical usuage. | | |
| 11Y1TG | Graph Theory | KZ | 2 |
| | d terminology of graph theory, graph representation. Problems of graph theory, problem instance. Graph search algorithms, trees, mir rian path, bipartite graph matching, flow networks, circulations, critical path method, traveling salesman problem. Problem of existence a | | |
| pati problem, Euler | for their solving. Computational complexity, dealing with NP-complete problems, heuristic approach. | nd optimization an | iu aigoritiiris |
| 11Y1ZM | Foundation of MATLAB Programming | KZ | 2 |
| | ciple of algorithmization, flow charts, description of MATLAB environment and its settings, MATLAB help, mathematical operators, mat control flow, inputs and outputs, graphics, optimization and program code debugging. | rices and elements | s operations, |
| 12MDE | Transport Models and Transport Excesses | Z,ZK | 3 |
| | traffic flow and methods for their measurement. Models of the traffic flow, communications load, line and urban systems. Theory of qu | , | s. Quality of |
| transport and its a | assessment. Statistical characteristics of transport. Transport excesses, their analysis, the causes, identify and minimize the consequences. | ences. Improving o | of transport |
| 100001 | safety and fluency. | 1/7 | |
| 12PPOK | Designing Roads, Highways and Motorways | KZ | 3 |
| | ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet | - | |
| Trange of vision for | intersections. | y device. Orossing | 35, junionons, |
| 12X31S | Project 1 ITS | Z | 2 |
| 12X32S | Project 2 ITS | Z | 2 |
| 12X33S | Project 3 ITS | Z | 2 |
| 12Y1AE | Applied Ecology | KZ | 2 |
| | ecological concepts and principles, ecosystem, ecological factors, energy flow through the ecosystem. Application of knowledge with | | |
| | ape ecology - origin and historical development. Landscape definition and classification. Success. Traffic constructions in the country protection. Applied ecology. | | |
| 12Y1C1 | Designing Roads in Civil 3D I | KZ | 2 |
| | voted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through | in the complete des | sign 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 | course also includ | des a basic |
| | explanation of the traffic building design in the real-life profession. | | |
| 12Y1C2 | Designing Roads in Civil 3D II | KZ | 2 |
| | voted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go througl uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The | | |
| Particulai iiricai bi | unding, from the initial situation, over the forgitudinal section, to the model and work sections and the cubic capacity calculation. The | previously acquire | u skilis ale |
| | improved and developed. Students learn to design intersections. | | |
| 12Y1DS | improved and developed. Students learn to design intersections. Project Documentation in Practice | KZ | 2 |
| 12Y1DS Project document | improved and developed. Students learn to design intersections. Project Documentation in Practice ation creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process. | | 1 |
| Project document | Project Documentation in Practice ation creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process. creation of some project documentation parts. | Budget and pricin | g. Practical |
| Project document | Project Documentation in Practice ation creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process. creation of some project documentation parts. Traffic Noise | Budget and pricin | g. Practical |
| Project document 12Y1HD Acoustic introduction | Project Documentation in Practice ation creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process. creation of some project documentation parts. Traffic Noise on, basic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regulation | Budget and pricin KZ s. Creation acoust | g. Practical 2 tic climate in |
| Project document 12Y1HD Acoustic introduction | Project Documentation in Practice ation creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process. creation of some project documentation parts. Traffic Noise on, basic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regulation of urban acoustic, noise transmission, soundproofing. Types of noise sources in area. Determination of acoustic situation in the area | Budget and pricin KZ s. Creation acoust | g. Practical 2 tic climate in |
| Project document 12Y1HD Acoustic introducticarea, principles | Project Documentation in Practice ation creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process. creation of some project documentation parts. Traffic Noise on, basic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regulation 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. | KZ s. Creation acoust of interest. Method | g. Practical 2 tic climate in dology of |
| Project document 12Y1HD Acoustic introductiarea, principles 12Y1KN | Project Documentation in Practice ation creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process. creation of some project documentation parts. Traffic Noise on, basic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regulation of urban acoustic, noise transmission, soundproofing. Types of noise sources in area. Determination of acoustic situation in the area | KZ s. Creation acoust of interest. Method | g. Practical 2 ic climate in dology of |
| Project document 12Y1HD Acoustic introductiarea, principles 12Y1KN | Project Documentation in Practice ation creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process. creation of some project documentation parts. Traffic Noise on, basic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regulation of urban acoustic, noise transmission, soundproofing. Types of noise sources in area. Determination of acoustic situation in the area computing and measurement of transport noise. Acoustic studies, measuring protocol. Combined Transportation | KZ s. Creation acoust of interest. Method | g. Practical 2 ic climate in dology of |
| Project document 12Y1HD Acoustic introducti area, principles 12Y1KN Combined transp 12Y1KP | Project Documentation in Practice ation creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process. creation of some project documentation parts. Traffic Noise on, basic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regulation of urban acoustic, noise transmission, soundproofing. Types of noise sources in area. Determination of acoustic situation in the area computing and measurement of transport noise. Acoustic studies, measuring protocol. Combined Transportation port strategy and legislation. Load units. Means of transport in combined transport. Combined transport systems. Transshipping areas | KZ s. Creation acoust of interest. Method KZ . Multimodal logist | g. Practical 2 ic climate in dology of 2 ic centres. |
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| 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 Types of towns or cities with a certain prevailing function, forms of their development. Brief overview of land-use planning. | _ | ettlements. |
| 12ZTS | Railway Lines and Stations | Z,ZK | 4 |
| Rail transport. Ra | allway 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 t | patial layout of rail | way lines. |
| 12ZYDI | Introduction to Transportation Engineering | Z,ZK | 2 |
| Role of transportati | on in land-use planning. Basic terms in transportation engineering. Traffic survey and traffic prognosis. Introduction to topic of roads, p impacts of transportation to environment and safety. | ublic mass transpo | ort. Negative |
| 14AM | Automation and Measurement | Z,ZK | 6 |
| | rms agent, rational agent, their unification to elements of transportation systems, analogies in nature, regulation in openen loop and | | |
| systems, control u | sing finite state machines. Dynamic system identification. Measurement of basic electric and other physical quantities, principles of m | neasurement instru | ıments, DC |
| | and AC measurement, actuators, measurement automation, measurement laboratories. | | |
| 14ASD | Algorithm and Data Structures | KZ | 3 |
| | ze problems, design a theoretical solution to a given problem and write the resulting algorithm using flowcharts, practice reading algor | | |
| and use basic Bool | lean algebra to construct constraints in algorithms. Students will be introduced to the basics of the Python programming language - v | | loops, they |
| 4.40.400 | will learn to work with variables of basic data types (integer, floating point and string) and the list data structure in their progra | | |
| 14DATS | Database Systems | KZ | 2 |
| Basic concepts o | of database systems, conceptual model, relational data model, the principles of normal forms, relational database design, security an queries, relational algebra, SQL language, client / server, multilayer architectures, distributed database systems. Access to data via | | database |
| 14DPK | | Z | 0 |
| 14DFK | Digital Support for Designing of Roads and Highways Seminars possibilities of technical processing problems focused on designing of roads and highways. | | U |
| 14DZT | | Z | 0 |
| | Digital Support for Railway Lines Seminars possibilities of technical processing problems solved in the field of railway lines. | I | 0 |
| 14ISYD | Information Systems in Transportation | Z,ZK | 7 |
| | cloud services concept, eGovernment-structure. Electronic communication and signature. IS life cycle and IT projects. Types of information and signature are concept, eGovernment-structure. | · · | - |
| implementation | in transport. Roles, processes, management, optimization in IS. Oracle data types. SQL Developer, SQL queries. Comprehensive ex | ample and web ap | plication |
| 4.4405 | programming. | | |
| 14KSP | Constructing with Computer Aid | KZ | 2 |
| <u> </u> | m determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic common wor Co-ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting possib | | |
| and CA systems. | profiles, drawings with raster foundaments). | ilites, AutoCAD en | viioiiiieiit |
| 14PRG | Programming | KZ | 2 |
| | ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python prograr | l . | ļ. |
| _ | rticipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and searc | | |
| · | working with date and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). | | |
| 14X31S | Project 1 ITS | Z | 2 |
| 14X32S | Project 2 ITS | Z | 2 |
| 14X33S | Project 3 ITS | Z | 2 |
| 14Y1AV | Animation and Visualization | KZ | 2 |
| | tions and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems and Spa | I | tmospheric |
| and other effects | s, rendering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, animation | າ using Inverse Kin | ematics. |
| 14Y1BE | Barrierless Transport | KZ | 2 |
| The issue of barrier | less accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. Students | will gain theoretica | l knowledge |
| of barrierless enviro | onment roads, railway stations, public transport stops, terminal buildings, vehicles, public transport, information and orientation systems | and transportation | technology. |
| | Theoretical knowledge will be supplemented by practical examples. | | _ |
| 14Y1BM | Biometric Methods | KZ | 2 |
| | rms, authentication methods, principles and performance measurement of biometric systems, overview of biometric technologies, ha | | • |
| reuna recognition n | nethod, 2D and 3D face recognition, vein patterns on the wrist, ear biometrics, fingerprint recognition, skin spectroscopy, behavioral r in transport applications, safety and risks of biometric technologies. | nemous, me use o | or promettics |
| 14Y1HW | Computer Hardware | KZ | 2 |
| | computer Franciscate logical circuits design and their realization using FPGA. In detail, description of computer architecture and separate | 1 | l |
| | arithmetic and logical units, I/O subsystem. | | |
| 14Y1MP | Modeling Complex Assemblies and Models in Parametric Modeller | KZ | 2 |
| | gramming - tools and methodology of working subassemblies and assemblies, sheet metal parts modelling, welded assemblies, pipe | | |
| | Photorealistic output rendering - physical and material properties, lighting sources. MKP - visual example. | | |
| 14Y1OJ | Object - oriented programming in JAVA | KZ | 2 |
| Objective thinking. | Encapsulation. Classes. Attributes. Access modifiers. Methods and overloading. Special methods (constructors, getters / setters). Ba | sic object methods | . Reference |
| data types. Inherita | nce. Polymorphism. Statics, constants, interfaces, abstract classes, enum, packages, exceptions, collections, generics, lambda expre | essions, anonymou | is functions. |
| 14Y1OP | Operating System | KZ | 2 |
| | tallation GNU/Linux OS. X-window system. Rights management - users and groups, ACL rights. Filesystems and attributes. Program | - | |
| runlevels. Basic o | console programs / commands. Config files. SW management, package systems. Programs in graphic shell - text, spreadsheet, graph | iic editors, sound, | video and |
| 4.43/4.50 | communication. Services management. Safe and secure configuration of OS. Remote administration. | 1/7 | _ |
| 14Y1P2 | Computer Aid of Transportation Projecting 2 | KZ | 2 |
| | oplication for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, dat utes, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transition | | |
| modification (attribu | section). Basics of 3D modelling. | i dai vo, didaa-dilu | iongituuniai |
| 14Y1PA | 3D Modeling in AutoCAD | KZ | 2 |
| | arametric modeller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup creation, object | | 1 |
| · | connected with external database. Basic definition of work with lights, materials and reflexes. Models presentation. | | |
| | | - | |

14Y1PG Computer Graphics ΚZ 2 Basic formats of graphic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with editing programs (within the user level scope) using layers, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics cards. Corporate Information System Data-information-knowledge, components of information system, syntatic and semantic sense of data, structure of corporate information system, particular information system (personalistic, production, storage, etc.), corporate information politic and information control, risks of information system operation, legal environment of information system operation, state information system, information system security, data protection, safety politics. 14Y1P.I C Programming Language 2 C programming language. Preprocessor, basics of the C language (data types, syntax, commands), functions, pointes, dynamical memory allocation, string, files, structures and unions. Implementations of abstract data types (FIFO, LIFO, list), programming techniques (sorting, searching, recursion), using bitwise oprerators. 14Y1PZ Advanced Data Processing in Spreadsheets 2 Students will be familiar with principles of working in a spreadsheet. Graphic layout of the table appearance, formatting of numbers, insertion of formulas and functions, including addressing, error detection. Working with large spreadsheets, filters, advanced filters, database functions. Pivot tables and charts, conditional formatting, solution finding, solver, macros, data analysis. Examples and questions from various companies and training. Creating Interactive Internet Applications ΚZ 2 Possibilities of scripting language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions. Your own application programmed in PHP language. 14Y1UP Editing of Theses in MS Word Students will be introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, create tables of contents, lists of figures, tables, graphs, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless editing dissertations and theses, so that they are able to concentrate mainly on writing a thesis. 14Y1VM Development of Applications for Mobile Devices ΚZ 2 Object oriented programming, Java programming language, development environment, operating system Android, development application - widgets, containers, threads, menu, permissions, services, GUI. Webdesign 1 2 Students will learn the basics of communication HTTP, URL and addressing, markup languages HTML and XHTML, HTML tags, rules of web accessibility and usability, CSS properties and selectors, the issue of web browsers, creating one to three column layout pages, sites validation, conditional comments. Topics will be practiced on practical examples Webdesign 2 2 Students will learn advanced techniques CSS, responsive webdesign, CSS frontends, content management systems, JavaScript, jQuery, SEO, web server installation + configuration directives. Topics will be practiced on practical examples. 14Y1WG Webdesign 2 Students will learn the basics of HTTP communication, URL and addressing, HTML5 markup language, advanced CSS3 techniques, accessible and usable web rules, responsive webdesign, content management systems, web server installation + configuration directives. The subject matter will be trained on examples 14Y17.I Fundamentals of programming in JAVA 2 Introduction to the Java SE Platform. IDE Installation and First Project. Comments. Variables and Type System. Operators. User Input and Parsing. Chain and Chain Conversion. Text Chain and Mathematical Methods. Terms. Relational Operators and Switches. Cycles for, while, foreach. Field - declaration, initialization, methods for field work. ASCII. Functions, parameters, return value, recursion. Program creation. 14Y17M Fundamentals of parametric and adaptive modeling K7 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. Import and export from and to another systems. Fundamentals of assemblies creation. 15DPLG Transportation Psychology Ζ 2 Subject of psychology and its basic concepts. Information intake, decision-making and behaviour. Performance. Engineering psychology and vehicle construction. Psychological aspects of travel route and traffic conditions, accidents and traffic incidents. Selection and training of the staff. Work and leisure. Age as a factor in transport operation. 15JZ1A Foreign Language - English 1 Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and communicative skills. Elementary stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles of rhetoric. 15JZ2A Foreign Language - English 2 3 Grammatical structures and style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and communicative skills. Elementary stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles of rhetoric. 15X31S Project 1 ITS 2 Z 15X32S Project 2 ITS Z 2 15X33S Project 3 ITS 7 2 15Y1BO Work Safety and Health Protection in Transportation ΚZ 2 Fundamental legislative, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation. Health protection programmes, health insurance of home and foreign business trips, statistics, working practice. History of Railway Horse-drawn railways, steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "First Republic", electric traction, World War II railways, railway development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connections, railway lines construction, railway accidents, railway junctions. Excursions and projections. 15Y1EH European Integration within Historical Context Versailles system, formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism. Little Entente, its principles and goals. Europe after Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and its consequences for Europe. New quality of French-German relationship - a driving power of starting European integration. 15Y1FD French Area Studies and Transportation ΚZ 2 France - geography and regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air traffic, specialised terminology. French society and culture. Current political system. System of education, studying in France. Selected authors of French literature. French gastronomy. 15Y1HD History of City Mass Transport 2 History of city mass transport in the world, development of tram, bus and trolley-bus systems. History of transport networks in the world, current trends and developments of tariff and clearance systems. History of city transport in Prague and Brno. History of tram, bus and trolley-bus operation systems in the Czech Republic and Slovakia.

| 15Y1HE Basic knowledge | Work Hygiene and Ergonomics in Traffic of occupational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of these | KZ factors on health o | 2 of workers. |
|---------------------------|--|---------------------------|---------------|
| • | ction of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technology to portion of technology to proper 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 | | 1 1 |
| World airports. Fa | amous aviators. Helicopters. CSA airplanes. Development of aircrafts in Czechoslovakia between the years 1945-1989. Classic era of aviation. Modern era of civil aviation. Airline companies. Supersonic flying. | f aviation. Golden | era of civil |
| 15Y1MK | Modern History in Context: Every Day Life and Transport Historical overview of modern history of every day life, science, technology and transport in a wider context. | KZ | 2 |
| 15Y1NE | German in the Economy and Society | KZ | 2 |
| Recent economic | and social issues of German speaking countries and of the EU. Reading and listening of texts. Lexical, grammatical and semantic an selected topics. | alysis of texts. Dis | scussion on |
| 15Y1ZV | East-West dichotomy: Prelude to the Cold War | KZ | 2 |
| Historical prologue, | evolution of the "West" and "East" from the 1500s. Focus on the history in the period between 1850 nad 1950. Milestones and continuing | ity of the internatio | nal relations |
| in the end of 19th | century and the beginning of the 20th century. Revolutions, the causes and consequences. Scientific and technological progress, the Economic and financial history. Social changes. Discussions on texts, sources. | e causes and cons | sequences. |
| 16DOTE | Transport Technology | Z,ZK | 6 |
| | main features and principles. Construction and design elements, important legislation, testing. Drives and transmission, energy accuateral, transversal, vertical, driveability, suspension, wheel-road contact), mathematic solution of dynamic systems. Design features of safety. | | - |
| 16SVIR | Vehicle Systems and Interaction with Driver | Z,ZK | 7 |
| 16UDOP | Introduction into Vehicles | Z | 2 |
| Vehicles and trans | portation systems. Functionality and setup. Movement and drive principles. Engines and their characteristics. Rail, road, air and wate of transport. Lifting equipment and conveyors. Legislation. | r transport. Alterna | ative means |
| 16X31S | Project 1 ITS | Z | 2 |
| 16X32S | Project 2 ITS | Z | 2 |
| 16X33S | Project 3 ITS | Z | 2 |
| 16Y1EN | Energy Requirements of Vehicles | KZ | 2 |
| Dynamics and the | driving inertial of the vehicles. Types of energy - kinetic, static, heat, chemical and others. Ways of energy change into kinetic energy drive, steam engine, air engine. Energy accumulation means, accumulator, flywheel, fuel cell. Energy recuperation. WTW anal | - | ine, electric |
| 16Y1IS | Interactive simulators and simulations | KZ | 2 |
| | ry and application of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical mo lation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and intera | | methods. |
| 16Y1KS | Quality and Reliability of Vehicles | KZ | 2 |
| - | oility theory in design, development, production and operation of vehicles. Definition and possible approach to quality and reliability. Ke Analysis), QFD (Quality Function Deployment), DFx (Design for Assamly, Manufacturying, Quality, Services) and other methods u Knowledge-based systems of quality and reliability, data collection. | | |
| 16Y1PV | Operation, Construction and Maintenance of Vehicles | KZ | 2 |
| | e production. Vehicle maintenance. Vehicle diagnostics. Maintenance and repair plans. Engine maintenance and emission measurements. General principles of engine diagnostics. | | 1 |
| 16Y1RE | Control and Electronic Vehicle Systems | KZ | 2 |
| Elementary concep | ots of regulation. Tools for analytical solution, linear system description. Basic types of a regulator (PID), properties, advantages, disadvantages, disadv | ntages, function. (| Conventional |
| 16Y1SO | Strategy and innovation in mobility | KZ | 2 |
| Introduction to inr | novation, definition. Innovation strategy. Innovation life cycle and ecosystem, main sources and funding opportunities. Successful inno | | ls, budget; |
| co-financing, evalua | ation. Sprint method and its use. Innovative business model - main patterns and examples, design, strategy, processes and outlook (I of use). Creating an innovation strategy. Customer and value map, design and testing. | ousiness plan and | possibilities |
| 16Y1VT | Development in Railroad Vehicles | KZ | 2 |
| Railroad vehicles | s 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. | nsportation. Critica | al situation |
| 16Y1ZG | Introduction into Applied Computer Graphics | KZ | 2 |
| | s, division and applications with emphasis on transport, including development and research. Colours, colour perception, colour sche | · · | |
| and 3D generation | on, elementary algorithms for graphic data workout. Visualisation principles and tasks, technics, graphics and visualisation HW basics graphics software. | s. Introduction to 2 | D and 3D |
| 16Y1ZL | Vehicle Testing, Legislation and Construction | KZ | 2 |
| | otorbike costruction, aggregate computing, driving resistance, build and parameters of traction, constructional arrangement of personal c slation in the EU and in the world, technical legislation creation, testing methods, vehicle tests, accelerated tests, mathematical mode | | , motorbikes, |
| 17TEDL | Transport Technology and Logistics | KZ | 3 |
| | sport technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and freight tran | - | |
| | odus, technologic factors of the side of operator and client, organisation of city transport, logistic technologies and their aplication usi | | |
| 17X31S | Project 1 ITS | Z | 2 |
| 17X32S 17X33S | Project 2 ITS Project 3 ITS | Z Z | 2 2 |
| 17X333 17Y1EV | Public Sector Economy | KZ | 2 |
| | ncial theory of public sector, public choice theory, externalites, decisions about public finance allocation, economic assesment of public | | 1 1 |
| 4 | Destate hydres management of public projects a their appropria officiancy appropriate type of alphaestics of DDD projects funding for | | |

| | | 1 | |
|--|--|--|--|
| 17Y1LL | Logistics of Passenger and Freight Air Transport KZ ger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial transport proce | l l | 2 rs and |
| ogistios dirinie passen | air cargo. Information systems in air transport. Global distribution systems. | oo passerige | is an |
| 17Y1MD | Marketing in Transportation KZ | 7 | 2 |
| General principles of m | narketing applied to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transport and the resulthe application of marketing. | ulting differen | ces ir |
| 17Y1OF | Personal Finance KZ | 7 | 2 |
| Personal finance (bud | get, financing of basic living needs), debt (loans and credits, payment instruments, interest and fees, debt trap), financing of housing (rent, n | nortgage, sav | vings, |
| onsumer loans, refinar | ncing), savings and investments (investment horizon, return, risk, investment strategy), insurance (insurance types, suitability and adequacy), (retirement savings and insurance). | securing the | futur |
| 17Y1PM | Personnel Management KZ | 7_ | 2 |
| Human sources, | work group, man as personality, planning, choice, evaluation and education of human sources, work adaptation, teamwork, intercultural corresponding to the control of the c | mmunication. | |
| 17Y1SK | Urban and Regional Rail Transport Systems KZ | ı | 2 |
| - | sport demand, modal-split, distribution of passenger flows on public regional transport lines. Optimization of line management, line network letable. Vehicle circulation creation. Optimizing driver shifts and arranging them in turnus. Effects of barrier-free and public transport preferer | - | |
| 17Y1SL | marketing. Sociology of Human Resources KZ | 7 | 2 |
| - | heir importance, work group as a special kind of social group, communication, personal management, modern management, human resource | | |
| 17Y1ST | of the organization. Titan Simulation KZ | 7 | 2 |
| · · | ent game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same product. Students | | |
| etermine the quantity | and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequences of their de of financial corporate reports and they use this information for other business decisions. | ecisions by the | e forr |
| 18MTY | Materials Science and Engineering Z,Z | K | 3 |
| | als science and engineering explains mechanical properties of structural materials based on their bonding forces and microstructure. Howeve It most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and composites. Also | | |
| | to degradation processes in materials, to defectoscopy and to main mechanical tests. | | |
| 18PZP | Elasticity and Strength Z,Z | | 3 |
| ension and compressi | on. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolted and welded Analysis of deflection curve of beams. Torsion of circular cross sections. Combined loading. Stability. | joints of struc | ctures |
| 18SAT | Structural Analysis Z,Z | K | 4 |
| = | rces in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determinate beams are | | |
| rinciple of virtual work. | Kinematic method for calculation of reactions of statically determinate systems. Determination of axial forces in truss constructions. Cross-section of planar shapes. Fiber polygons and chains. | ional characte | eristic |
| | | | |
| 18SPP | | | 0 |
| 18SPP Excersise for practice. | Seminary from Elasticity and Strength Zension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam. Analysis | | 0 curve |
| Excersise for practice. | Seminary from Elasticity and Strength Z Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam. Analysis of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. | of deflection | curve |
| Excersise for practice. | Seminary from Elasticity and Strength Z Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam. Analysis of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Seminary from Structural Analysis Z | of deflection | 0 |
| Excersise for practice. 18SS Examples for practise. 0 | Seminary from Elasticity and Strength Z Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam. Analysis of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Seminary from Structural Analysis Z General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and simple framorks for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of joints and methods. | of deflection | 0 ication |
| Excersise for practice. 18SS Examples for practise. Of principle of virtual w | Seminary from Elasticity and Strength Z Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam. Analysis of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Seminary from Structural Analysis Z General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and simple fram orks for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of joints and method of compound systems. Plane fiber polygons. | of deflection | 0 ications. |
| 18SS xamples for practice. | Seminary from Elasticity and Strength Z Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam. Analysis of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Seminary from Structural Analysis Z General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and simple framorks for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of joints and methods. | of deflection | 0 icatio etions |
| 18SS sxamples for practice. 18SS sxamples for practise. Of principle of virtual was not prechain the standards, | Seminary from Elasticity and Strength Z Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam. Analysis of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Seminary from Structural Analysis Seminary from Structural Analysis Z General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and simple framorks for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of joints and method of compound systems. Plane fiber polygons. Seminary from Technical Documentation Z international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional and geometric planes. | nework. Applinethod of sec | 0 icatio etions |
| 18SS xamples for practice. 18SS xamples for practise. of principle of virtual w 18STD Technical standards, | Seminary from Elasticity and Strength Z Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam. Analysis of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Seminary from Structural Analysis Seneral system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and simple from orks for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of joints and in Geometry of cross sections. Plane fiber polygons. Seminary from Technical Documentation Z International standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional and geometry of drawing sheets. | nework. Applinethod of sec | 0 icatio ctions 0 racy, |
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| 18SS xamples for practice. 18STD Technical standards, Technic | Seminary from Elasticity and Strength Z Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam. Analysis of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Seminary from Structural Analysis Seneral system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and simple from orks for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of joints and in Geometry of cross sections. Plane fiber polygons. Seminary from Technical Documentation Z international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional and geomarrangement of drawing sheets. Technical Documentation KZ international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional and geomarrangement of drawing sheets. | netrical accur | 0 ications of acy, |
| 18SS xamples for practice. 18SS xamples for practise. Of principle of virtual we need to be a second of principle of virtual we need to be a second of principle of virtual we need to be a second of principle of virtual we need to be a second of principle of virtual we need to be a second of principle of virtual we need to be a second of principle of virtual we need to be a second of virtual we need to be a | Seminary from Elasticity and Strength Zemsion and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam. Analysis of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Seminary from Structural Analysis Seminary from Structural Analysis Zeneral system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and simple fram orks for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of joints and magnetic forms are sections. Plane fiber polygons. Seminary from Technical Documentation International standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional and geometration arrangement of drawing sheets. Technical Documentation KZ Technical Documentation KZ Technical drawings, representation of technical objects, technical diagrams and charts, dimensional and geometrangement of drawing sheets. Project 1 ITS Z Project 2 ITS Project 3 ITS Z | mework. Applinethod of sec | 0 ications 0 acy, 2 racy, |
| 18SS (xamples for practice.) 18STD Technical standards, 18TED Technical standards, 18X31S 18X32S 18X33S 18Y1AM | Seminary from Elasticity and Strength Zension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam. Analysis of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Seminary from Structural Analysis Seminary from Structural Analysis Zeneral system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and simple fram orks for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of joints and more decometry of cross sections. Plane fiber polygons. Seminary from Technical Documentation Zenternational standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional and geomal arrangement of drawing sheets. Technical Documentation KZ Technical Documentation International standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional and geomal arrangement of drawing sheets. Project 1 ITS Project 2 ITS Anatomy, Mobility and Safety of Man Z Z Z Z Z Z Z Z Z Z Z Z Z | mework. Applinethod of seconetrical accur. | 0 cications 0 cacy, 2 cacy, 3 |
| 18SS Excersise for practice. 18SS Examples for practise. Of principle of virtual w 18STD Technical standards, 18TED Technical standards, 18X31S 18X32S 18X33S 18Y1AM Euryey of tissues. Anatomatics. | Seminary from Elasticity and Strength Zemsion and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of beam. Analysis of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. Seminary from Structural Analysis Ceneral system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and simple framorks for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of joints and no Geometry of cross sections. Plane fiber polygons. Seminary from Technical Documentation International standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional and geomal arrangement of drawing sheets. Technical Documentation International standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional and geomarrangement of drawing sheets. Project 1 ITS Project 2 ITS Project 2 ITS Anatomy, Mobility and Safety of Man Omical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circulation and nervounces auscular-skeletal system. Injury of human organs and musculo-skeletal system during traffic accidents. Mobility of ill and injured man and his | mework. Applinethod of seconderical accurate | 0 ideations 0 accy, 2 accy, 2 2 2 2 uncture |
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| 20APEL | Applied Electronics | KZ | 2 |
|-----------------------|--|----------------------|----------------|
| | emiconductor components, their principles, characteristics and typical connection diagrams. Semiconductor PN junction diodes. Trans | - | |
| amplillers, basic i | ogic gates. Functions of basic electronic circuits and methods for their designs (rectifiers, voltage regulator with Zener diode, transisto amplifier as an inverting and noninverting amplifier). | r as an ampilier, | operational |
| 20.4TF1 | | 7 71/ | 7 |
| 20ATEL | Applied Telematics s- definition, benefits, ITS legislation, ITS organizations, ITS architecture and its practical use, data structures and data, geographic info | Z,ZK | 7 |
| riansport telematic | e-call, fleet management, check-in and information systems, ITS connection to Smart City, ITS applications on specific examp | - | toli systems, |
| 20ELKA | Qualification in Electrical Engineering | KZ | 2 |
| | e with measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock hazard, s | | |
| | allowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legislatic | - | - 1 |
| | in relation to health and safety and electrical engineering. | , | |
| 20RISI | Road Traffic Control | Z.ZK | 7 |
| | rement - basic concepts, SSZ design criteria, SSZ production project, dynamic SSZ management, public transport preferences, traffic a | , | 1 - |
| _ | traffic models, macroscopic traffic models, traffic management on motorways, tunnel systems. | | |
| 20RIZE | Railway Traffic Management | Z,ZK | 7 |
| | nent of security technology, external elements (switches, signals, detection means), station, track and crossing security equipment, ex | • | ty equipment |
| and ETCS, traff | ic control structure, traffic control technology, automation and traffic control optimization, power supply systems, energy calculations a | and train running o | dynamics. |
| 20SYSA | Systems Analysis | Z,ZK | 5 |
| Introduction to syst | tem sciences, system viewpoint, terminology, typical system analysis tasks, system identification, system interface and interface tasks, | processes, syste | m behaviour |
| and its analysis, | strong functions and processes, genetic code, system identity, system architecture. Tools for system analysis - Petri nets, decision tab | les, algorithms fo | r structural |
| | tasks. Soft and hard systems, methods for soft system analysis. | | |
| 20TAMS | Telecommunications and Local Area Networks | Z,ZK | 7 |
| = | rrent state and introduction of the new trends in the development of telecommunication systems. The legal environment for the provision | | |
| services is explain | ned, basic telecommunication solutions in the hierarchical architecture of telecommunication networks are presented, and the links be | etween the param | eters of the |
| | parts and the performance of telecommunication systems. | | 1 |
| 20UITS | Introduction to Intelligent Transport Systems | Z,ZK | 7 |
| | gislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamentals of inform | | |
| systems for 11S. Pr | rinciples and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real examples | of possible applic | cations of the |
| 207246 | principles of ITS. | 7 | |
| 20X31S | Project 1 ITS | Z | 2 |
| 20X32S | Project 2 ITS | Z | 2 |
| 20X33S | Project 3 ITS | Z | 2 |
| 20Y1AE | Applied Electronics | KZ | 2 |
| | semiconductor components, their principles, characteristics and typical connection diagrams. Semiconductor PN junction diodes, tran | = | - |
| amplifiers, basic i | ogic gates. Functions of basic electronic circuits and methods for their designs (rectifiers, voltage regulator with Zener diode, transisto | r as an amplifier, | operational |
| 2074 4 E | amplifier as an inverting and noninverting amplifier). | V7 | |
| 20Y1AF | Alternative Forms of Transportation Project Financing such forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt paym | KZ | 2 |
| | ot a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of secu | | - 1 |
| the final debter le f | of transportation and telecomunication projects. | intioo do dir ditori | idavo ocuroo |
| 20Y1EA | Environmental Aspects of Transport | KZ | 2 |
| | phere, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilistic | | |
| | n pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transp | | |
| 20Y1EK | Qualification in Electrical Engineering | KZ | 2 |
| Practical experience | be with measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock hazard, s | symbols and labe | ling, nominal |
| voltage, maximum | allowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legislation | on, standards and | l regulations |
| | in relation to health and safety and electrical engineering. | | |
| 20Y1KP | Communication and presentation skills | KZ | 2 |
| | es and their fulfillment, current communication networks, work with various sources, formal requirements of emails and final theses, b | | |
| teamwork, emo | tional intelligence, manipulation and way of working with it, coping with stressful situations, formal requirements of presentations, way | s of communicati | on during |
| | presentation, presentation skills, presentation skills in online environment. | | |
| 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. Routing algorithms, their properties and implementation. | mples of datasets | s for finding |
| 201/401 | | V7 | $\overline{}$ |
| 20Y10I | Fare Collection and Information Systems ystems in public transport and their components (on-board units, validators, turnstiles,). Information systems and their components | KZ | 2 |
| - | nels) and operators (cycles, location or current delay of vehicles,). The issue of tariff systems. Other examples of clearance systems | | лез, тарз, |
| 20Y1OK | Road Lighting | KZ | 2 |
| | tities and terms, street lighting components (luminaires, control cabinets for street lighting, street lighting cables), characteristics of lumin | | |
| | standards, measurement of illuminance and luminance in road lighting, tunnels, conceptual approach to street lighting design, lighting | | |
| - " | Relux, street lighting control systems. | - | |
| 20Y1PK | Product Quality Management Processes | KZ | 2 |
| | of organization management. Management systems and international standards; quality management systems. Quality products, prod | cesses, systems. | A framework |
| of standards for sys | stems management, management principles. Principles of process management, monitoring and measurement systems management. U | niform framework | of standards |
| | for systems management. Process management principles. Metrology and testing. Product certification. | | |
| 20Y1SC | Sensors and Actuators | KZ | 2 |
| Principles of senso | rs and actuators. Basics of measuring theory and actuating influence. The respective technologies and construction principles. Sensors of | | tro-magnetic, |
| | state (temperature, humidity), chemical and particle flow values. Electrical, pneumatic and hydraulic actuators and solid phase ele | | |
| 20ZEKT | Fundamentals of Electrical Engineering | Z,ZK | 4 |
| - | , electrotechnical quantities (electrical current, voltage, resistance, conductivity, resistivity, conductivity, power, energy), Ohm's law, Ki | | |
| (eiements, met | hods, DC and AC circuits, accumulators, photovoltaics), electric machines, transmission lines, reflections on transmission lines, basic | electrical measu | rements. |

| 21SLD | Seminar of Air Transport | Z | 0 |
|--|--|--|---|
| History, definiti | ons, terminology, basic rules. VFR / IFR. Basics of aerodynamics. Propulsion of aircraft. Aircraft design. Basics of navigation, radio na | vigation. Weight, b | alance, |
| performance. Flig | th planning, optimization of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic ma | inagement, ground | l handling, |
| | security. Air crew. Airlines and economics. Space technologies. | | |
| 21X31S | Project 1 ITS | Z | 2 |
| 21X32S | Project 2 ITS | Z | 2 |
| 21X33S | Project 3 ITS | Z | 2 |
| 21Y1AM | Aeronautical Information Management (AIM) | KZ | 2 |
| | c overview of AIS and AIM. Transition from AIS to AIM. Regulatory base. Provision of AIS/AIM in the Czech Rep. AIP (Aeronautical In | | |
| the Czech Rep. A | IRAC System. NOTAM messages. PIB (Pre-flight Informtion Bulletin). AIC (Aeoronautical Inf. Circulars). Aeronautical Charts. EAD (Eu (Quality Mng. System). ADQ (Aeronautical Data Quality). AIXM (Aeronautical Inf. Exchnage Format). | ropena AIS Datab | ase). QMS |
| 21Y1BS | Unmanned aircraft systems 1 | KZ | 2 |
| Unmanned Aviatio | n Development. Aircraft design. Legislation in force in the Czech Republic. Planning and execution of the flight. Airspace division. Open procedures. Practical flights. | erational risks and | operational |
| 21Y1LJ | Aeronautical Radio and Flight Instruments | KZ | 2 |
| | story of aircraft instrumentation, aerometric instrumentation, Earth magnetism, aircraft electric equipment, gyroscopic instrumentation If equipment, engine instrumentation, warning and recording systems, instrumentation operational requirements, radiocommunicatio | | |
| 21Y1LS | Air Traffic Services | KZ | 2 |
| | in Czech Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, APP at USA and Czechoslovakia. ATS - Model of financing. Training System of Air Traffic Controllers. Future development of ATS | | story of ATS |
| 21Y1MP | Matlab for project-oriented study | KZ | 2 |
| | bus is focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exercises les, based on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improveme | | • |
| 21Y1OH | Airline Business and Operations | KZ | 2 |
| _ | s a comprehensive view of the commercial, operational and transportation activities of air transport companies. It focuses on the organiz | | |
| various aspects of t | their strategy, economic and operational indicators. It introduces students in detail to operational processes and the essentials of transparts a basic view of the economic aspects of air transport. | ortation processes | s. It provides |
| 21Y1PC | ATC Procedures and Activities | KZ | 2 |
| | procedures, basics of communication and phraseology, aircraft identification, spacing and traffic coordination. In addition, the course | | |
| | rts and low visibility operational procedures. Students will during the course learn basic safety management applications applied acro | | |
| 21Y1RZ | Human Resources Management | KZ | 2 |
| | human resources in the organization and related disciplines file. Substance, importance and challenges of human resources manage | ment. Internal and | |
| environment of hun | nan resource management. Human resource planning. Search, recruitment and selection of employees. Motivation, evaluation and ren | nuneration of staff. | Positioning, |
| | dismissal and redundancies of employees. Education of employees. Planning career management. | | |
| | | | |
| 21Y1SI | ATC Simulator | KZ | 2 |
| Familiarization v | with the simulation environment, acquiring basic habits, aircraft identification procedures, vectoring, level changes, ATC clearance, us | e of RNAV points. | Practical |
| Familiarization v | with the simulation environment, acquiring basic habits, aircraft identification procedures, vectoring, level changes, ATC clearance, us ng on basic vectoring, early application of vertical separation, EST and REV message passing. Practical exercises in the APPROACH | e of RNAV points. | Practical |
| Familiarization vexercises focusir | with the simulation environment, acquiring basic habits, aircraft identification procedures, vectoring, level changes, ATC clearance, us ng on basic vectoring, early application of vertical separation, EST and REV message passing. Practical exercises in the APPROACH departure management procedures, conflict resolution. | e of RNAV points. I area, practicing a | Practical arrival and |
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| 23Y1MU | Emergency Events Management Solution in Transport Infrastructure | KZ | 2 |
|---------------------------|--|-----------------------|----------------|
| Basic solutions of eme | ergency events with emphasis of the transport infrastructure events and their solution management. Knowledge in the emergency pl | anning and specia | procedures |
| | in liquidation work within the transport infrastructure. | | |
| 23Y1OK | Protection of Critical Objects and Infrastructures | KZ | 2 |
| Types of technologica | al systems, critical item, risks and their courses, criticality, vulnerability, connectivity, dependability, resilience, failure, protection, safe | ty of critical object | s and critical |
| | infrastructures. | | |
| 23Y1TP | Criminal Law in IT and Transportation | KZ | 2 |
| Introduction of crimi | inal law into legal order, conception of culpability and criminal delict, consequency of other legal standards. international treaty and | criminal law, inve | stigation of |
| | crime, specific indicia of criminal court cases, practical examples. | | |
| 23Y1VS | Negotiation and Cooperation | KZ | 2 |
| Code of conduct for n | 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 negotiation | ion, the essence of negotiation, the differences in negotiation in business and in crisis situations, the principle of "win both", specific | cations and bidding | g, the role of |
| | trust. | | |
| TV-1 | Physical Education | Z | 1 |
| TV-2 | Physical Education | Z | 1 |
| TVKLV | Physical Education Course | Z | 0 |
| TVKZV | Physical Education Course | Z | 0 |

For updated information see http://bilakniha.cvut.cz/en/FF.html Generated: day 2025-06-25, time 12:36.