Study plan

Name of study plan: Bachelor TET-LED Full-Time from 2025/26

Faculty/Institute/Others:

Department:

Branch of study guaranteed by the department: Welcome page

Garantor of the study branch:

Program of study: Technology in Transportation and Telecommunications

Type of study: Bachelor full-time

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

Note on the plan:

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

The role of the block: Z

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

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

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

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

Credits in the group: 30 Note on the group:

| vote on the c | <u> </u> | | | | | |
|---------------|---|------------|---------|-----------|----------|------|
| Code | Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.) | Completion | Credits | Scope | Semester | Role |
| 11CAL1 | Calculus 1 Tomáš Tasák, Olga Vraštilová, Magdalena Hykšová, Bohumil Ková, Ond ej Navrátil Bohumil Ková Ond ej Navrátil (Gar.) | Z,ZK | 7 | 2P+4C+22B | Z | Z |
| 11LA | Linear Algebra Magdalena Hykšová, Lucie Kárná, Pavel Provinský, Martina Be vá ová Magdalena Hykšová Martina Be vá ová (Gar.) | Z,ZK | 3 | 2P+1C+10B | Z | Z |
| 12ZADY | Introduction to Transportation Engineering Zuzana arská, Dagmar Ko árková, Jana Štikarová Dagmar Ko árková (Gar.) | Z,ZK | 4 | 2P+2C | Z | Z |
| 18MTY | Materials Science and Engineering Tomáš Doktor, Jaromír Kylar, Veronika Drechslerová, Nela Kr má ová, Jitka ezní ková, Jaroslav Valach, Vít Malinovský, Jaromír Kylar Jaroslav Valach Tomáš Doktor (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, Lukáš Svoboda, Tereza Panská Vít Fábera Vít Fábera (Gar.) | KZ | 3 | 0P+2C+8B | Z | Z |
| 18TKK | Technical Drawing and Designing Jitka ezní ková, Vít Malinovský, Lukáš Svoboda, Jan Šleichrt, Martin Brumovský, Jan Mejst ík, Drahomír Schmidt, Jan Vogl, Ji í Zeisek, Jan Šleichrt Jan Šleichrt (Gar.) | KZ | 4 | 2P+2C+16B | 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-24/25 Name=1st Sem. Bachelor F | ull-TimeTET | from 2024/25 |
|---------------------------|---|--------------------|----------------------|
| 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 |
| ' ' ' | Linear Algebra mbinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and | . , . | 3 eterminants and |
| Vector spaces (linear co | | . , . | 3 eterminants and |

| 18MTY | Materials Science and Engineering | Z,ZK | 3 |
|-----------------------------|---|----------------------|--------------------|
| Basic course of material | s science and engineering explains mechanical properties of structural materials based on their bonding forces and microstru | 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 | ition is also paid |
| to degradation processe | s in materials, to defectoscopy and to main mechanical tests. | | |
| 11GIE | Geometry | KZ | 3 |
| Differential geometry of | curves - parameterization, the arc of the curve, torsion and curvature, Frenet's trihedron. Kinematics - a curve as a trajector | y of the motion, th | e velocity, and |
| acceleration of a particle | e moving on a curved path. | | |
| 14ASD | Algorithm and Data Structures | KZ | 3 |
| Students will analyze pro | oblems, design a theoretical solution to a given problem and write the resulting algorithm using flowcharts, practice reading a | lgorithms written i | using flowcharts, |
| and use basic Boolean a | algebra to construct constraints in algorithms. Students will be introduced to the basics of the Python programming language | e - variable, branch | ning, loops, they |
| will learn to work with va | triables of basic data types (integer, floating point and string) and the list data structure in their programs. | | |
| 18TKK | Technical Drawing and Designing | KZ | 4 |
| 16UDOP | Introduction into Vehicles | Z | 2 |
| Vehicles and transportation | tion systems. Functionality and setup. Movement and drive principles. Engines and their characteristics. Rail, road, air and w | ater transport. Alte | ernative means |
| of transport. Lifting equip | oment and conveyors. Legislation. | | |
| TV-1 | Physical Education | Z | 1 |

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

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

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

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

Credits in the group: 30 Note on the group:

Airlines and economics. Space technologies.

| NOTE OIL THE | Name of the course / Name of the group of courses | | Ι | 1 | | |
|--------------|--|------------|---------|-----------|----------|------|
| Code | (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 Magdalena Hykšová | Z,ZK | 5 | 2P+3C+20E | B L | Z |
| 11STAT | Statistics | Z,ZK | 4 | 2P+2C+12E | B L | Z |
| 12ZTS | Railway Lines and Stations | Z,ZK | 4 | 2P+2C+10E | B L | Z |
| 18SAT | Structural Analysis | Z,ZK | 4 | 2P+2C+14E | L | Z |
| 20SYSA | Systems Analysis | Z,ZK | 5 | 2P+2C+14E | L | Z |
| 14PRG | Programming Jana Kaliková | KZ | 2 | 0P+2C+8E | B L | Z |
| 17TEDL | Transport Technology and Logistics | KZ | 3 | 2P+1C | L | Z |
| 21ZALD | Basics of Air Transport | KZ | 2 | 0P+2C+8E | L | Z |
| TV-2 | Physical Education | Z | 1 | | L | Z |

actoristics of the courses of this group of Study Plan: Code-2S PRITET 20/21 Name-2nd Som Racholar Full-Time TET from

| | s of the courses of this group of Study Plan: Code=2S-BP-TET-20/21 Name=2nd Sem. Bache | or Full-Time II | E I from |
|--------------------------|--|--|---------------------|
| 2020/21 11CAL2 | Calculus 2 | Z,ZK | 5 |
| | quations and their systems, differential calculus of functions of several real variables. Riemann integral in Rn. Line and surface | 1 ' | 5 |
| | | , | |
| 11STAT | Statistics | Z,ZK | 4 |
| Regression and co | y Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Para | ametric tests Nonpa | rametric tests |
| 12ZTS | | 7 71/ | 4 |
| _ | Railway Lines and Stations | Z,ZK | • |
| | vay track geometry parameters. Route layout of railway lines. Railway line construction - railway substructure and superstructur | e. Spatial layout of r | aliway lines. |
| | tems in relation to infrastructure. Operating and carriage points. Railway lines net and category. Traction in rail transport. | | |
| 18SAT | Structural Analysis | Z,ZK | 4 |
| General system of | forces in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determ | inate beams and sin | nple girders. |
| Principle of virtual w | ork. Kinematic method for calculation of reactions of statically determinate systems. Determination of axial forces in truss construc | tions. Cross-section | al characteristics |
| of planar shapes. F | iber polygons and chains. | | |
| 20SYSA | Systems Analysis | Z,ZK | 5 |
| Introduction to syste | em sciences, system viewpoint, terminology, typical system analysis tasks, system identification, system interface and interface | tasks, processes, sy | stem behaviour |
| and its analysis, str | ong functions and processes, genetic code, system identity, system architecture. Tools for system analysis - Petri nets, decision | tables, algorithms | for structural |
| tasks. Soft and hard | d systems, methods for soft system analysis. | | |
| 14PRG | Programming | KZ | 2 |
| The Course Progra | mming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python pro | gramming language | is expanded |
| here so that the par | ticipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and | searching, tuples, se | ets, dictionaries, |
| working with date a | nd time, regular expressions, functions and procedures, working with files (CSV, JSON, XML). | | |
| 17TEDL | Transport Technology and Logistics | KZ | 3 |
| Basic terms in trans | sport technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and freigh | t transport, organisa | ation of traffic in |
| each transport mod | us, technologic factors of the side of operator and client, organisation of city transport, logistic technologies and their aplication | n using various trans | port modus. |
| 21ZALD | Basics of Air Transport | KZ | 2 |
| History, definitions. | terminology, basic rules. VFR/IFR. Basics of aerodynamics. Propulsion of aircraft. Aircraft design. Basics of navigation, radio navig | ation. Weight, baland | ce, performance |

Flight planning, optimization of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic management, ground handling, security. Air crew.

Physical Education

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

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

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

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

Credits in the group: 30 Note on the group:

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

| 11FYZ | Physics | Z,ZK | 5 |
|---|---|--|--|
| Kinematics, dynam | nics, Newton's laws, force fields, mechanics of continuum, thermodynamics, introduction to electrostatics and electric current. | | I |
| 12MDE | Transport Models and Transport Excesses | Z,ZK | 3 |
| Parameters of the | traffic flow and methods for their measurement. Models of the traffic flow, communications load, line and urban systems. The | ory of queues, shock w | vaves. Quality |
| ransport and its as | ssessment. Statistical characteristics of transport. Transport excesses, their analysis, the causes, identify and minimize the co | onsequences. Improvin | ng of transport |
| afety and fluency. | | | |
| I1TGA | Graph Theory and its Applications in Transport | Z,ZK | 4 |
| Basic terms of grap | ph theory, paths in graphs, flows in networks, location problems, design problems on graphs, optimum routing, use of graphs | in other scientific disci | iplines. |
| 8PZP | Elasticity and Strength | Z,ZK | 3 |
| ension and compi | ression. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, | bolted and welded join | nts of structure |
| nalysis of deflecti | on curve of beams. Torsion of circular cross sections. Combined loading. Stability. | | |
| manyono on aomoon | on curve of beams. Torsion of circular cross sections. Combined loading, Stability. | | |
| | Introduction to Intelligent Transport Systems | Z,ZK | 7 |
| 20UITS | | , , | 7 ecommunicati |
| 20UITS Terminology and le | Introduction to Intelligent Transport Systems | s of information and tel | |
| 20UITS Ferminology and le systems for ITS. Pr | Introduction to Intelligent Transport Systems gislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamental | s of information and tel | |
| 20UITS Terminology and le systems for ITS. Prorinciples of ITS. | Introduction to Intelligent Transport Systems gislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamental | s of information and tel | |
| 20UITS Ferminology and lessystems for ITS. Provinciples of ITS. | Introduction to Intelligent Transport Systems gislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamental rinciples and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real e | s of information and tel xamples of possible ap | oplications of t |
| POUITS Ferminology and le pystems for ITS. Provinciples of ITS. POPOK Definition, types, or | Introduction to Intelligent Transport Systems gislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamental rinciples and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real e Designing Roads, Highways and Motorways | s of information and tel xamples of possible ap KZ tandard speed. Route | oplications of t |
| POUITS Ferminology and le pystems for ITS. Provinciples of ITS. POPOK Definition, types, or Range of vision for | Introduction to Intelligent Transport Systems gislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamental rinciples and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real e Designing Roads, Highways and Motorways wnership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and st | s of information and tel xamples of possible ap KZ tandard speed. Route | oplications of t |
| 20UITS Ferminology and le systems for ITS. Provinciples of ITS. 12PPOK Definition, types, or Range of vision for intersections. | Introduction to Intelligent Transport Systems gislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamental rinciples and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real e Designing Roads, Highways and Motorways wnership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and st | s of information and tel xamples of possible ap KZ tandard speed. Route | oplications of to |
| 20UITS Ferminology and lessystems for ITS. Proprinciples of ITS. 12PPOK Definition, types, or Range of vision for intersections. | Introduction to Intelligent Transport Systems gislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamental rinciples and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real e Designing Roads, Highways and Motorways wnership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and state of stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. | s of information and tel examples of possible ap KZ tandard speed. Route ds. Safety device. Cros | oplications of t 3 in rural areas. ssings, junction |
| 20UITS Ferminology and lessystems for ITS. Proprinciples of ITS. 12PPOK Definition, types, or Range of vision for intersections. 14DATS Basic concepts of or | Introduction to Intelligent Transport Systems gislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamental rinciples and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real e Designing Roads, Highways and Motorways wnership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and state stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of road Database Systems | s of information and tel examples of possible ap KZ tandard speed. Route ds. Safety device. Cros | oplications of t 3 in rural areas. ssings, junction |
| 20UITS Terminology and less systems for ITS. Provinciples of ITS. I2PPOK Definition, types, or Range of vision for intersections. I4DATS Basic concepts of queries, relational | Introduction to Intelligent Transport Systems gislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamental rinciples and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real e Designing Roads, Highways and Motorways where ship, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and state stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads Database Systems database systems, conceptual model, relational data model, the principles of normal forms, relational database design, seculal gebra, SQL language, client / server, multilayer architectures, distributed database systems. Access to data via the WWW. | s of information and tel examples of possible ap KZ tandard speed. Route ds. Safety device. Cros | 3 in rural areas. ssings, junction |
| 20UITS Ferminology and lessystems for ITS. Proprinciples of ITS. I2PPOK Definition, types, or Range of vision for intersections. I4DATS Basic concepts of queries, relational in ISUITA | Introduction to Intelligent Transport Systems gislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamental rinciples and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real e Designing Roads, Highways and Motorways where ship, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and state stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of road patabase Systems Database Systems database systems, conceptual model, relational data model, the principles of normal forms, relational database design, secu | s of information and telexamples of possible applications of possible a | 3 in rural areas. ssings, junctio 2 a, database |

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

Name of the group: 4th Sem. Bachelor Full-Time TET-LED from 2022/23 Requirement credits in the group: In this group you have to gain 26 credits

Requirement courses in the group: In this group you have to complete 10 courses

Credits in the group: 26 Note on the group:

| Code | Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.) | Completion | Credits | Scope | Semester | Role |
|--------|---|------------|---------|-------|----------|------|
| 11EMO | Electromagnetic Field and Optics Zuzana Malá | Z,ZK | 4 | 2P+1C | L | Z |
| 21LEIS | Aerodromes Ladislav Capoušek | Z,ZK | 3 | 2P+1C | L | Z |
| 21RELP | Air Traffic Control | Z,ZK | 4 | 3P+1C | L | Z |
| 21ZT | ATM Systems | ZK | 2 | 2P+0C | Z,L | Z |
| 21ZYT1 | Principles of Flight 1 Jakub Trýb | Z,ZK | 3 | 2P+1C | L | Z |
| 16LLA1 | Aircraft 1 | KZ | 3 | 2P+1C | L | Z |
| 21RIBZ | Aviation Safety Andrej Lališ | KZ | 2 | 2P+0C | L | Z |
| 14PGP | Program Resources Michal Je ábek | Z | 2 | 0P+2C | L | Z |
| 21SBL1 | Bachelor Thesis Seminar 1 Lenka Hanáková | Z | 1 | 1P+0C | L | Z |
| 15JL2A | Foreign language - English 2 (for LED) | KZ | 2 | 0P+2C | L | Z |

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

| 11EMO | Electromagnetic Field and Optics | Z,ZK | 4 |
|--------------------------|--|---------------------|--------------------|
| Electric field. Electric | urrent. Magnetic field. Electromagnetic field. Optics. Basics of solid-state physics. | ' | |
| 21LEIS | Aerodromes | Z,ZK | 3 |
| Basic definitions. Appl | cability. Airport design. Reference code. Declared distances of runways (RWY). Taxiways and aprons. Clearway. Stopway. Mar | kings of movemen | t areas. |
| Markings. Signs. Mark | ers. Visual aids for denoting obstacles. Obstacle restriction, removal. Visual aids for navigation, lights, approach lighting system | ns. Visual approach | n slope indicator |
| systems. Runway light | s. Taxiway lights. Visual aids for denoting obstacles. | | |
| 21RELP | Air Traffic Control | Z,ZK | 4 |
| 21ZT | ATM Systems | ZK | 2 |
| The course introduces | classical and modern facilities, systems and technologies designated for ATS. Student obtains knowledge of technical principal principal control of the cont | les and solutions | as far as |
| communication, navig | ation and surveillance aviation systems are concerned. | | |
| 21ZYT1 | Principles of Flight 1 | Z,ZK | 3 |
| Aerodynamic drag, rel | ation between drag and speed, streamline, boundary layer, formula of continuity, formula of Bernoulli, lift and drag, air flow an | d pressures aroun | d wing, angle of |
| attack, reactions of wi | ng in air flow, lift and drag of a wing and an aircraft, coefficient of lift and drag, critical angle of attack, wing with final span, indu | ced drag, interfere | nce, devices for |
| lift and drag increase. | | | |
| 16LLA1 | Aircraft 1 | KZ | 3 |
| Aircraft structural and | conceptual design types - definitions and basic knowledge of the problem. Development of requirements, aircraft definitions an | d categorisation. A | vircraft loadings. |
| Systems of primary ar | d secondary airframe structure. Airframe and propulsion unit. Lectures are devoted to aeroplane topics. | | |
| 21RIBZ | Aviation Safety | KZ | 2 |
| The course contains to | pics related to the safety management and structure of the SMS. This includes a description of the SMS mechanisms and tools, t | used to ensure the | safe operations. |
| During the course, stu | dents are continuously working on the semestral assignment, which helps them to understand practical application of the SM: | S. | |
| 14PGP | Program Resources | Z | 2 |
| Students will be remin | ded of some aspects of Pythom programming, learn basic concepts and constructs from object-oriented programming and the | eir implementation | in Python. They |
| will also try out the ba | sics of working with data libraries in Python, namely NumPy, Pandas, Matplotlib, and practice with examples of smaller and la | ger data sizes. | |
| 21SBL1 | Bachelor Thesis Seminar 1 | Z | 1 |
| Types of thesis (review | , applied research, basic research, thesis dealing with design proposals). Working with citation sources (citation sources, citat | ion databases, cita | tion styles, how |
| to cite). Analyzing the | state of the art (standards of research writing). Defining the limitations of the state of the art. Introduction to the thesis method | ology. | |
| 15JL2A | Foreign language - English 2 (for LED) | KZ | 2 |
| Grammar and technica | l vocabulary. Selection of conversation topics and professional topics based on students' level and their focus at Faculty of Tran | sportation Science | s Development |
| | | • | o. Borolopo |

Code of the group: 5S-BP-LED-24/25

Name of the group: 5th Sem. Bachelor Full-Time TET-LED from 2024/25 Requirement credits in the group: In this group you have to gain 26 credits

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

Credits in the group: 26

Note on the group:

| rioto 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 |
| 16LLA2 | Aircraft 2 Jan Slezá ek, Karel Hylmar, Daniel Urban, Karel Mündel | Z,ZK | 2 | 2P+1C | Z | Z |
| 21LGCE | Air Navigation Jan Slezá ek | Z,ZK | 3 | 2P+0C | Z | Z |
| 21LGVP | Legislation and Operational Regulations Martin ernotik Martin ernotik (Gar.) | ZK | 4 | 3P+0C | Z | Z |

| 21ZYT2 | Principles of Flight 2 Jakub Trýb, P emysl Vávra Jakub Trýb | Z,ZK | 3 | 2P+1C | Z | Z |
|--------|--|------|---|-------|---|---|
| 22SELN | Air Accident Investigation Karel Mündel, Michal Frydrýn Michal Frydrýn Karel Mündel (Gar.) | ZK | 2 | 2P+0C | Z | Z |
| 14ZDAL | Data processing in air transport Martin Šrotý Martin Šrotý Martin Šrotý (Gar.) | KZ | 2 | 0P+2C | Z | Z |
| 21MEOL | Meteorology Iveta Kameníková Iveta Kameníková | KZ | 3 | 2P+1C | Z | Z |
| 21SYLP | Airport Security Lukáš Popek Lukáš Popek Andrej Lališ (Gar.) | KZ | 2 | 2P+0C | Z | Z |
| 21LGL1 | Aviation English 1 Jitka He manová Jitka He manov á | Z | 2 | 0P+2C | Z | Z |
| 21SBL2 | Bachelor Thesis Seminar 2 Vladimír Socha, Lenka Hanáková, Marta Urbanová Marta Urbanová | Z | 1 | 1P+0C | Z | Z |
| 15JL3A | Foreign language - English 3 (for LED) Markéta Vojanová, Dana Boušová, Marie Michlová, Marek Tome ek, Jan Feit, Markéta Musilová, Peter Morpuss, Jitka He manová, Eva Rezlerová, | KZ | 2 | 0P+2C | Z | Z |

Characteristics of the courses of this group of Study Plan: Code=5S-BP-LED-24/25 Name=5th Sem. Bachelor Full-Time TET-LED from 2024/25

| 16LLA2 Aircraft 2 | Z,ZK | |
|--|--|---|
| Manufacturers responsibility, responsibilities of operator and professional supervising. Legislation in area of airworthiness. Interna | ational and national standards. Stati | c solidity of aircra |
| structures. Aeroelasticity. Inherent and operational reliability of aircraft structure. Fatigue strength. Aircraft structure lifetime presu | ımption. | |
| 21LGCE Air Navigation | Z,ZK | 3 |
| Earth - its shape, parameters and properties. Aeronautical charts and their use. Measuring time. Dead reckoning. Radionavigatic | on aids. Global navigation satellite s | ystems. Air traffic |
| services routes and their design. | | |
| 21LGVP Legislation and Operational Regulations | ZK | 4 |
| Introduction into aviation regulations. The scope of international and national organizations in civil aviation. Analysis and interpre | tation of the ICAO Annexes 1-19, IC | CAO Docs. 4444, |
| 7030, 8168. Introduction to the European Parliament and Council Regulation (EC), Commission Regulation (EU) and the Decision | ons of the Executive Director of EAS | SA. |
| 21ZYT2 Principles of Flight 2 | Z,ZK | 3 |
| Static & dynamic longitudinal stability, neutral point, location of centre of gravity, static directional & lateral stability, dyn | amic directional & lateral stabi | lity, control pitch |
| (longitudinal), yaw (directional) & roll (lateral), roll/yaw interaction, trimming, speed of sound, Mach number, compressibility, | shock waves, critical Mach number | , aerodynamic |
| heating, operating limitations, manoeuvring envelope, gust-load diagram. | | |
| 22SELN Air Accident Investigation | ZK | 2 |
| Introduction and legislation (ICAO, EU, Czechia) related to air accident investigation. Obligations arising from legislative requireme | ents for individual States in the event | of an air acciden |
| investigation process. Air accident site (inspector's equipment, site security, personal protection, initial activities at the site, sketcl | h, evidence, etc.). Aircraft and crew | documentation. |
| Final report (formalities, substantive content, contribution). | | |
| | | |
| 14ZDAL Data processing in air transport | KZ | 2 |
| 14ZDAL Data processing in air transport Introduction to data processing and analysis tools. Practical part of the training - introduction to the working environment, applied | | _ |
| · ·· ·- - ···· - ···· ··· · ··· · · · | examples of data processing from | _ |
| Introduction to data processing and analysis tools. Practical part of the training - introduction to the working environment, applied | examples of data processing from | _ |
| Introduction to data processing and analysis tools. Practical part of the training - introduction to the working environment, applied methods of presentation of the results. Seminar papers on open data. Consultation hours for seminar papers. Seminar paper sub Meteorology | examples of data processing from pomission and presentation. | practice, advance |
| Introduction to data processing and analysis tools. Practical part of the training - introduction to the working environment, applied methods of presentation of the results. Seminar papers on open data. Consultation hours for seminar papers. Seminar paper substitution in the contract of the results. | examples of data processing from pomission and presentation. KZ I rainfall, origin fission. Turbulence. F | appractice, advance |
| Introduction to data processing and analysis tools. Practical part of the training - introduction to the working environment, applied methods of presentation of the results. Seminar papers on open data. Consultation hours for seminar papers. Seminar paper sub 21MEOL Meteorology Structure of atmosphere. Vertical stratification. Pressures QNH, QFE, QFF, QME. Instability. Atmospherical fronts. Atmospherical | examples of data processing from pomission and presentation. KZ I rainfall, origin fission. Turbulence. F | oractice, advance |
| Introduction to data processing and analysis tools. Practical part of the training - introduction to the working environment, applied methods of presentation of the results. Seminar papers on open data. Consultation hours for seminar papers. Seminar paper sub 21MEOL Meteorology Structure of atmosphere. Vertical stratification. Pressures QNH, QFE, QFF, QME. Instability. Atmospherical fronts. Atmospherical wind. Cyclone and anticyclone. Gradient wind. Geostrofical and geocyklostrofical wind. Visibilities in air transport. Dangerous meteory. | examples of data processing from pomission and presentation. KZ I rainfall, origin fission. Turbulence. F | oractice, advance |
| Introduction to data processing and analysis tools. Practical part of the training - introduction to the working environment, applied methods of presentation of the results. Seminar papers on open data. Consultation hours for seminar papers. Seminar paper subsequence of the results. Seminar papers on open data. Consultation hours for seminar papers. Seminar paper subsequence of the results. Seminar papers on open data. Consultation hours for seminar papers. Seminar paper subsequence of the results. Seminar papers on open data. Consultation hours for seminar papers. Seminar paper subsequence of the results. Seminar papers on open data. Consultation hours for seminar papers. Seminar paper subsequence of the working environment, applied methods of the working environment, applied to the working environment, applied to the working environment environ | examples of data processing from pomission and presentation. KZ I rainfall, origin fission. Turbulence. Feorological aspects. Meteorological | Toractice, advance 3 Powers causing maps. Climatolog |
| Introduction to data processing and analysis tools. Practical part of the training - introduction to the working environment, applied methods of presentation of the results. Seminar papers on open data. Consultation hours for seminar papers. Seminar paper sub 21MEOL Meteorology Structure of atmosphere. Vertical stratification. Pressures QNH, QFE, QFF, QME. Instability. Atmospherical fronts. Atmospherical wind. Cyclone and anticyclone. Gradient wind. Geostrofical and geocyklostrofical wind. Visibilities in air transport. Dangerous meteocirculation. Intertropical front. Meteorological informations. | examples of data processing from pomission and presentation. KZ I rainfall, origin fission. Turbulence. Feorological aspects. Meteorological KZ ity. Overview of national and internal | Toractice, advance 3 Powers causing maps. Climatolog |
| Introduction to data processing and analysis tools. Practical part of the training - introduction to the working environment, applied methods of presentation of the results. Seminar papers on open data. Consultation hours for seminar papers. Seminar paper sub 21MEOL Meteorology Structure of atmosphere. Vertical stratification. Pressures QNH, QFE, QFF, QME. Instability. Atmospherical fronts. Atmospherical wind. Cyclone and anticyclone. Gradient wind. Geostrofical and geocyklostrofical wind. Visibilities in air transport. Dangerous mete Circulation. Intertropical front. Meteorological informations. 21SYLP Airport Security Definition of aviation security and unlawful acts against the civil aviation. Description of threats, risks, causes and goals of Secur | examples of data processing from pomission and presentation. KZ I rainfall, origin fission. Turbulence. Feorological aspects. Meteorological KZ ity. Overview of national and internal | Toractice, advance 3 Powers causing maps. Climatolog 2 stional regulations |
| Introduction to data processing and analysis tools. Practical part of the training - introduction to the working environment, applied methods of presentation of the results. Seminar papers on open data. Consultation hours for seminar papers. Seminar paper subsequence of atmosphere. Vertical stratification. Pressures QNH, QFE, QFF, QME. Instability. Atmospherical fronts. Atmospherical wind. Cyclone and anticyclone. Gradient wind. Geostrofical and geocyklostrofical wind. Visibilities in air transport. Dangerous meter Circulation. Intertropical front. Meteorological informations. 21SYLP Airport Security Definition of aviation security and unlawful acts against the civil aviation. Description of threats, risks, causes and goals of Security and their relevance to airport security. Security control devices. Operational efficiency factors and related variables. Basic use of 21LGL1 Aviation English 1 | examples of data processing from pomission and presentation. KZ rainfall, origin fission. Turbulence. Feorological aspects. Meteorological KZ trity. Overview of national and internated queueing theory and optimization to the complete of th | Toractice, advance 3 Powers causing maps. Climatolog 2 attional regulations asks. |
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| Introduction to data processing and analysis tools. Practical part of the training - introduction to the working environment, applied methods of presentation of the results. Seminar papers on open data. Consultation hours for seminar papers. Seminar paper subsequence of the results. Seminar papers on open data. Consultation hours for seminar papers. Seminar paper subsequence of the results. Seminar papers on open data. Consultation hours for seminar papers. Seminar paper subsequence of the results. Seminar papers on open data. Consultation hours for seminar papers. Seminar paper subsequence of the results. Seminar papers on open data. Consultation hours for seminar papers. Seminar paper subsequence of the results. Seminar papers on open data. Consultation hours for seminar papers. Seminar papers on open data. Consultation hours for seminar papers. Seminar papers on open data. Consultation hours for seminar papers. Seminar papers on open data. Consultation hours for seminar papers. Seminar papers on open data. Consultation hours for seminar papers. Seminar papers on open data. Consultation hours for seminar papers. Seminar papers on open data. Consultation hours for seminar papers. Seminar papers on open data. Consultation hours for seminar papers. Seminar papers on open data. Consultation hours for seminar papers. Seminar papers on open data. Consultation hours for seminar papers. Seminar papers on open data. Consultation hours for seminar papers. Seminar papers on open data. Consultation hours for seminar papers. Papers on open data. Consultation hours for seminar papers. Papers on open data. Consultation hours for seminar papers. Papers on open data. Consultation hours for seminar papers. Papers on open data. Consultation hours for seminar papers. Papers on open data. Consultation hours for seminar papers. Papers on open data. Consultation hours for seminar papers. Papers on open data. Consultation hours for seminar papers. Papers on open data. Consultation hours for seminar papers. Papers on open data. Consu | examples of data processing from pomission and presentation. KZ I rainfall, origin fission. Turbulence. Feorological aspects. Meteorological aspects. Meteorological aspects and internative of national and internative queueing theory and optimization to Z by in English. | 3 Powers causing maps. Climatolog 2 attional regulation: asks. 2 |
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| Introduction to data processing and analysis tools. Practical part of the training - introduction to the working environment, applied methods of presentation of the results. Seminar papers on open data. Consultation hours for seminar papers. Seminar paper subsequence of atmosphere. Vertical stratification. Pressures QNH, QFE, QFF, QME. Instability. Atmospherical fronts. Atmospherical wind. Cyclone and anticyclone. Gradient wind. Geostrofical and geocyklostrofical wind. Visibilities in air transport. Dangerous meter Circulation. Intertropical front. Meteorological informations. 21SYLP Airport Security Definition of aviation security and unlawful acts against the civil aviation. Description of threats, risks, causes and goals of Security and their relevance to airport security. Security control devices. Operational efficiency factors and related variables. Basic use of 21LGL1 Aviation English 1 Familiarity with the terminology used in civil aviation in the general context and emphasizing the ability to receive information only | examples of data processing from pomission and presentation. KZ I rainfall, origin fission. Turbulence. Feorological aspects. Meteorological aspects. Meteorological aspects and internative queueing theory and optimization to Z by in English. Z Definition of materials and metho | 3 Powers causing maps. Climatolog 2 attional regulation: asks. 2 |
| Introduction to data processing and analysis tools. Practical part of the training - introduction to the working environment, applied methods of presentation of the results. Seminar papers on open data. Consultation hours for seminar papers. Seminar paper subscriptions of presentation of the results. Seminar papers on open data. Consultation hours for seminar papers. Seminar paper subscriptions of atmosphere. Vertical stratification. Pressures QNH, QFE, QFF, QME. Instability. Atmospherical fronts. Atmospherical wind. Cyclone and anticyclone. Gradient wind. Geostrofical and geocyklostrofical wind. Visibilities in air transport. Dangerous meter Circulation. Intertropical front. Meteorological informations. 21SYLP Airport Security Definition of aviation security and unlawful acts against the civil aviation. Description of threats, risks, causes and goals of Secur and their relevance to airport security. Security control devices. Operational efficiency factors and related variables. Basic use of 21LGL1 Aviation English 1 Familiarity with the terminology used in civil aviation in the general context and emphasizing the ability to receive information onled 21SBL2 Bachelor Thesis Seminar 2 Methodology of thesis writing (introduction, analysis of the current state, specification of the problem, objectives and hypotheses obtaining results, presentation and discussion of results, formulation of thesis conclusions. Basics of LaTeX, working with LaTeX | examples of data processing from points on and presentation. KZ I rainfall, origin fission. Turbulence. Feorological aspects. Meteorological fitty. Overview of national and international queueing theory and optimization to Z in English. Z S). Definition of materials and methological word template. | 3 Powers causing maps. Climatolog 2 stional regulations asks. 2 1 ds, approach to |

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

Aircraft 2

16Π Δ2

Name of the group: 6th Sem. Bachelor Full-Time TET-LED from 2023/24

Requirement credits in the group: In this group you have to gain 24 credits

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

Credits in the group: 24

Note on the group:

| Note on the grou | μ. | | | | | |
|------------------|---|------------|---------|-----------|----------|------|
| Code | Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.) | Completion | Credits | Scope | Semester | Role |
| 11MSP | Modeling of Systems and Processes Bohumil Ková | Z,ZK | 4 | 2P+2C+12B | L | Z |
| 21EMIL | Air Transport Economy Peter Vittek | Z,ZK | 5 | 3P+1C | L | Z |

| 21LMR1 | Aircraft Engines 1 | ZK | 3 | 2P+0C | L | Z |
|--------|--|------|---|-----------|---|---|
| 21LVYO | Human Performance and Limitations | ZK | 3 | 2P+0C | L | Z |
| 21PAP | Flight Planning and Performance Ladislav Capoušek | Z,ZK | 4 | 2P+2C+14B | L | Z |
| 21LGL2 | Aviation English 2 | KZ | 2 | 0P+2C | L | Z |
| 21SBL3 | Bachelor Thesis Seminar 3 Lenka Hanáková | Z | 1 | 1P+0C | L | Z |
| 15JL4A | Foreign language - English 4 (for LED) | ZK | 2 | 0P+2C | L | Z |

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

| 2023/24 | | | |
|------------------------|---|----------------------------|--------------------|
| 11MSP | Modeling of Systems and Processes | Z,ZK | 4 |
| System and subsyste | m, external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of dif | ferential and differential | ential equations |
| Linear and nonlinear | system, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer functio | n. Stability of LTI s | ystems. |
| Discretization of cont | inuous systems. System interconnection. | | |
| 21EMIL | Air Transport Economy | Z,ZK | 5 |
| The course focuses of | on the fundamentals of economics, providing students with an understanding of accounting principles and role of financial state | ments. In the seco | nd part, the |
| course builds on the | general knowledge acquired and applies it to the environment of air transport economics. The basic principle is the Holloway mo | odel, which structu | ıres knowledge |
| about demand, price | and yield on the one hand, and supply, costs and expenses on the other. | | |
| 21LMR1 | Aircraft Engines 1 | ZK | 3 |
| Aircraft piston engine | , theoretical background, operational characteristics and construction schemes. Propellers, operational characterictics. Turbine | engine, theoretica | l background, |
| thermal cycles, const | ruction schemes, operational characteristics. Turbojet and turbofan engines, basic construction modules, and their operational of | characteristics. En | gine control. |
| 21LVYO | Human Performance and Limitations | ZK | 3 |
| Human performace 8 | amp; limitations, aptibility & competence, accident statistics, flight safety, basics of flight physiology, man & environme | ent, breathing &an | np; circulation, |
| sensory system, hea | th & hygiene, health preservation, intoxication, incapacitation, basics of flight psychology, human information processing, r | nemory & lea | arning, theory |
| & model of hum | an error, body rhythms & sleep, stress, fatigue, working methods. | | |
| 21PAP | Flight Planning and Performance | Z,ZK | 4 |
| Mass and balance. Lo | ad of aircraft. Determination of centre of gravity - loadsheet, trimsheet. Aircraft weighing. Overloading of aircraft. Basic characterist | ic speeds. Runway | / characteristics. |
| Take off and landing | performance. Drift down. ETOPS. MEL. Flight planning and monitoring. Routing. FL and speeds selection. Charts. ICAO ATC FP | L. Aerodrom opera | ation minimums. |
| Fuel plan. Operations | ıl flight plan. | | |
| 21LGL2 | Aviation English 2 | KZ | 2 |
| Terminology in the sp | here of aircraft construction, principles of flight, aircraft engines, instruments and systems. | ' | |
| 21SBL3 | Bachelor Thesis Seminar 3 | Z | 1 |
| Formal and graphic of | lesign of the thesis. Data collection and presentation, basic statistical reasoning, validation of results and designs. Achieving the | objectives of the | thesis and |
| evaluation of hypothe | sis tests. Preparation of the presentation, principles of presentation of the thesis. | | |
| 15JL4A | Foreign language - English 4 (for LED) | ZK | 2 |
| | , , , | | |

Grammar and technical vocabulary. Selection of conversation topics and professional topics based on students' level and their focus at Faculty of Transportation Sciences. Development of perceptive and communication skills, ability to give feedback, summarization of a technical text, presentation structure, technical style and its usage, language of management.

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

The role of the block: ZP

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

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

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

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

Credits in the group: 6 Note on the group:

| Code | Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.) | Completion | Credits | Scope | Semester | Role |
|--------|--|------------|---------|-------|----------|------|
| 15X31L | Project 1 LED | Z | 2 | 0P+1C | L | ZP |
| 14X31L | Project 1 LED | Z | 2 | 0P+1C | L | ZP |
| 12X31L | Project 1 LED | Z | 2 | 0P+1C | L | ZP |
| 11X31L | Project 1 LED Michal Matowicki | Z | 2 | 0P+1C | L | ZP |
| 22X31L | Project 1 LED | Z | 2 | 0P+1C | L | ZP |
| 17X31L | Project 1 LED | Z | 2 | 0P+1C | L | ZP |
| 18X31L | Project 1 LED | Z | 2 | 0P+1C | L | ZP |
| 20X31L | Project 1 LED | Z | 2 | 0P+1C | L | ZP |
| 21X31L | Project 1 LED | Z | 2 | 0P+1C | L | ZP |
| 16X31L | Project 1 LED | Z | 2 | 0P+1C | L | ZP |

| 15X32L | Project 2 LED | Z | 2 | 0P+1C | Z | ZP |
|--------|--|---|---|-------|---|----|
| 14X32L | Project 2 LED Tomáš Brandejský, Vít Fábera, Jan Kr ál, Jana Kaliková, Mária Jánešová | Z | 2 | 0P+1C | Z | ZP |
| 12X32L | Project 2 LED | Z | 2 | 0P+1C | Z | ZP |
| 11X32L | Project 2 LED Magdalena Hykšová, Jana Kuklová, Michal Matowicki Jana Kuklová Michal Matowicki (Gar.) | Z | 2 | 0P+1C | Z | ZP |
| 16X32L | Project 2 LED | Z | 2 | 0P+1C | Z | ZP |
| 22X32L | Project 2 LED Michal Frydrýn, Zden k Svatý | Z | 2 | 0P+1C | Z | ZP |
| 21X32L | Project 2 LED Jakub Trýb, Iveta Kameníková, Lukáš Popek, Andrej Lališ, Vladimír Socha, Lenka Hanáková, Stanislav Pleninger, Ladislav Capoušek, Jakub Kraus, | Z | 2 | 0P+1C | Z | ZP |
| 20X32L | Project 2 LED | Z | 2 | 0P+1C | Z | ZP |
| 18X32L | Project 2 LED | Z | 2 | 0P+1C | Z | ZP |
| 17X32L | Project 2 LED | Z | 2 | 0P+1C | Z | ZP |
| 11X33L | Project 3 LED Jana Kuklová | Z | 2 | 0P+3C | L | ZP |
| 12X33L | Project 3 LED | Z | 2 | 0P+3C | L | ZP |
| 14X33L | Project 3 LED | Z | 2 | 0P+3C | L | ZP |
| 15X33L | Project 3 LED | Z | 2 | 0P+3C | L | ZP |
| 22X33L | Project 3 LED | Z | 2 | 0P+3C | L | ZP |
| 20X33L | Project 3 LED | Z | 2 | 0P+3C | L | ZP |
| 18X33L | Project 3 LED | Z | 2 | 0P+3C | L | ZP |
| 17X33L | Project 3 LED | Z | 2 | 0P+3C | L | ZP |
| 16X33L | Project 3 LED | Z | 2 | 0P+3C | L | ZP |
| 21X33L | Project 3 LED | Z | 2 | 0P+3C | L | ZP |

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

| from 2022/23 | | | |
|--------------|---------------|---|---|
| 15X31L | Project 1 LED | Z | 2 |
| 14X31L | Project 1 LED | Z | 2 |
| 12X31L | Project 1 LED | Z | 2 |
| 11X31L | Project 1 LED | Z | 2 |
| 22X31L | Project 1 LED | Z | 2 |
| 17X31L | Project 1 LED | Z | 2 |
| 18X31L | Project 1 LED | Z | 2 |
| 20X31L | Project 1 LED | Z | 2 |
| 21X31L | Project 1 LED | Z | 2 |
| 16X31L | Project 1 LED | Z | 2 |
| 15X32L | Project 2 LED | Z | 2 |
| 14X32L | Project 2 LED | Z | 2 |
| 12X32L | Project 2 LED | Z | 2 |
| 11X32L | Project 2 LED | Z | 2 |
| 16X32L | Project 2 LED | Z | 2 |
| 22X32L | Project 2 LED | Z | 2 |
| 21X32L | Project 2 LED | Z | 2 |
| 20X32L | Project 2 LED | Z | 2 |
| 18X32L | Project 2 LED | Z | 2 |
| 17X32L | Project 2 LED | Z | 2 |
| 11X33L | Project 3 LED | Z | 2 |
| 12X33L | Project 3 LED | Z | 2 |
| 14X33L | Project 3 LED | Z | 2 |
| 15X33L | Project 3 LED | Z | 2 |
| 22X33L | Project 3 LED | Z | 2 |
| 20X33L | Project 3 LED | Z | 2 |
| 18X33L | Project 3 LED | Z | 2 |
| 17X33L | Project 3 LED | Z | 2 |
| 16X33L | Project 3 LED | Z | 2 |
| 21X33L | Project 3 LED | Z | 2 |

Name of the block: Compulsory elective courses

Minimal number of credits of the block: 6

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

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

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

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

Credits in the group: 6
Note on the group:

| Code | Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.) | Completion | Credits | Scope | Semester | Role |
|--------|---|------------|---------|-------|----------|------|
| 21Y1AM | Aeronautical Information Management (AIM) Radek Hoda Radek Hoda (Gar.) | KZ | 2 | 2P+0C | Z | PV |
| 00Y1XB | Active participation in a scientific project, workshop, short-term trip abroad Patrik Horaž ovský Patrik Horaž ovský Patrik Horaž ovský (Gar.) | KZ | 2 | 2P+0C | | PV |
| 20Y1AF | Alternative Forms of Transportation Project Financing Mária Jánešová Mária Jánešová (Gar.) | 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 | 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 | KZ | 2 | 2P+0C | L | PV |
| 14Y1BM | Biometric Methods | KZ | 2 | 2P+0C | Z | PV |
| 15Y1DZ | History of Railway | KZ | 2 | 2P+0C | L | PV |
| 12Y1DS | Project Documentation in Practice | KZ | 2 | 2P+0C | Z | PV |
| 20Y1EK | Qualification in Electrical Engineering | KZ | 2 | 2P+0C | L | PV |
| 16Y1EN | Energy Requirements of Vehicles | KZ | 2 | 2P+0C | L | PV |
| 20Y1EA | Environmental Aspects of Transport | KZ | 2 | 2P+0C | Z | PV |
| 15Y1EH | European Integration within Historical Context Jan Feit Jan Feit (Gar.) | 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 | KZ | 2 | 2P+0C | L | PV |
| 15Y1HD | History of City Mass Transport Milan Dont Milan Dont (Gar.) | KZ | 2 | 2P+0C | Z | PV |
| 12Y1HD | Traffic Noise | KZ | 2 | 2P+0C | L | PV |
| 15Y1HE | Work Hygiene and Ergonomics in Traffic Petr Musil Petr Musil (Gar.) | KZ | 2 | 2P+0C | Z | PV |
| 16Y1IS | Interactive simulators and simulations | KZ | 2 | 2P+0C | L | PV |
| 12Y1KN | Combined Transportation Petr Nejedlý Petr Nejedlý (Gar.) | KZ | 2 | 2P+0C | Z | PV |
| 12Y1KP | Communication and Promotion of Transport Projects | KZ | 2 | 2P+0C | L | PV |
| 20Y1KP | Communication and presentation skills Ji í R ži ka, Patrik Horaž ovský, Kristýna Navrátilová Ji í R ži ka Ji í R ži ka (Gar.) | KZ | 2 | 2P+0C | Z | PV |
| 21Y1LJ | Aeronautical Radio and Flight Instruments | KZ | 2 | 2P+0C | L | PV |
| 21Y1LS | Air Traffic Services | KZ | 2 | 2P+0C | L | PV |
| 17Y1LL | Logistics of Passenger and Freight Air Transport | KZ | 2 | 2P+0C | L | PV |
| 20Y1LN | Location and Navigation | KZ | 2 | 2P+0C | L | PV |
| 17Y1MD | Marketing in Transportation | KZ | 2 | 2P+0C | Z | PV |
| 18Y1MT | Engineering Materials Jaroslav Valach Petr Koudelka (Gar.) | KZ | 2 | 2P+0C | L | PV |

| 21Y1MP | Matlab for project-oriented study Vladimír Socha, Lenka Hanáková Lenka Hanáková Vladimír Socha (Gar.) | KZ | 2 | 2P+0C | Z | PV |
|--------|---|----|---|-------|---|----|
| 14Y1MP | Modeling Complex Assemblies and Models in Parametric Modeller | KZ | 2 | 2P+0C | Z | PV |
| 15Y1MK | Modern History in Context: Every Day Life and Transport | KZ | 2 | 2P+0C | L | PV |
| 15Y1NE | German in the Economy and Society | KZ | 2 | 2P+0C | Z | PV |
| 21Y1OH | Airline Business and Operations Ladislav Capoušek, Peter Vittek, Peter Olexa Peter Olexa Peter Vittek (Gar.) | KZ | 2 | 2P+0C | Z | PV |
| 20Y1OI | Fare Collection and Information Systems | 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 | KZ | 2 | 2P+0C | L | PV |
| 11Y1PV | Parametrical and Multicriterial Programming Olga Vraštilová Olga Vraštilová Olga Vraštilová (Gar.) | KZ | 2 | 2P+0C | Z | PV |
| 17Y1PM | Personnel Management | KZ | 2 | 2P+0C | L | PV |
| 12Y1PC | Pedestrian and Cycling Transport | 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 | 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 Stanislav Pleninger, Terézia Pilmannová Terézia Pilmannová Stanislav Pleninger (Gar.) | KZ | 2 | 2P+0C | Z | PV |
| 20Y1PK | Product Quality Management Processes Martin Leso Martin Leso (Gar.) | 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 Tomáš Honc Tomáš Honc (Gar.) | KZ | 2 | 2P+0C | Z | PV |
| 14Y1PA | 3D Modeling in AutoCAD | KZ | 2 | 2P+0C | Z | PV |
| 16Y1PV | Operation, Construction and Maintenance of Vehicles | KZ | 2 | 2P+0C | L | PV |
| 12Y1PU | Organization Disposition of Railway Stations | KZ | 2 | 2P+0C | L | PV |
| 12Y1RU | Railway Lines Reconstruction | KZ | 2 | 2P+0C | Z | PV |
| 16Y1RE | Control and Electronic Vehicle Systems Josef Mik, P emysl Toman Josef Mik (Gar.) | 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 | 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 David Lehet, Jaroslav Machan Jaroslav Machan (Gar.) | KZ | 2 | 2P+0C | Z | PV |
| 12Y1SU | Road Management and Maintenance | 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 | KZ | 2 | 2P+0C | L | PV |
| 11Y1TG | Graph Theory Lucie Kárná | KZ | 2 | 2P+0C | L | PV |
| 14Y1TI | Creating Interactive Internet Applications | KZ | 2 | 2P+0C | L | PV |
| 21Y1UL | Aircraft Maintenance | KZ | 2 | 2P+0C | L | PV |
| 14Y1UP | Editing of Theses in MS Word | KZ | 2 | 2P+0C | L | PV |
| 18Y1UK | Introduction of Rail Vehicles | KZ | 2 | 2P+0C | L | PV |
| 12Y1VR | Public Transport in Cities and Regions Vladimír Pušman Vladimír Pušman (Gar.) | 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 | KZ | 2 | 2P+0C | L | PV |
| 14Y1ZJ | Fundamentals of programming in JAVA | KZ | 2 | 2P+0C | Z | PV |
| 12Y1ZU | Principles of Urbanism Karel Hájek Karel Hájek (Gar.) | KZ | 2 | 2P+0C | Z | PV |
| 15Y1ZV | East-West dichotomy: Prelude to the Cold War Marie Michlová Marie Michlová (Gar.) | KZ | 2 | 2P+0C | Z | PV |
| 16Y1ZL | Vehicle Testing, Legislation and Construction Zuzana Radová Zuzana Radová (Gar.) | KZ | 2 | 2P+0C | Z | PV |

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

| 21Y1AM | Aeronautical Information Management (AIM) | KZ | 2 |
|---------------------------------------|--|------------------------------|-----------------|
| | overview of AIS and AIM. Transition from AIS to AIM. Regulatory base. Provision of AIS/AIM in the Czech Rep. AIP (Aeron. | 1 | - |
| | AC System. NOTAM messages.PIB (Pre-flight Informtion Bulletin). AIC (Aeoronautical Inf. Circulars). Aeronautical Charts. E | · · | |
| | m). ADQ (Aeronautical Data Quality). AIXM (Aeronautical Inf. Exchnage Format). | (| , |
| 00Y1XB | Active participation in a scientific project, workshop, short-term trip abroad | KZ | 2 |
| 20Y1AF | | KZ | 2 |
| | Alternative Forms of Transportation Project Financing uch forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. d | 1 | |
| · · | | | _ |
| | t a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issu I telecomunication projects. | de oi securilles as ari alli | ernative sourc |
| · · · · · · · · · · · · · · · · · · · | | 1/7 | |
| 18Y1AM | Anatomy, Mobility and Safety of Man | KZ | 2 |
| = | natomical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood ci | = | |
| | f muscular-skeletal system. Injury of human organs and musculo-skeletal system during traffic accidents. Mobility of ill and | injured man and his trea | aimeni. numa |
| • | tective means and traffic safety regulations. | 1/7 | |
| 14Y1AV | Animation and Visualization | KZ | |
| | ons and modeling of NURBS, Patch objects, selection of objects (according to filter and properties). 3D Studio MAX systems | | - |
| | ndering filters, Motion blur, advanced animations, Motion panel. Modeling for morphing and animation, bone formation, ani | | |
| 12Y1AE | Applied Ecology | KZ | 2 |
| •, | cological concepts and principles, ecosystem, ecological factors, energy flow through the ecosystem. Application of knowle | • | |
| | ecology - origin and historical development. Landscape definition and classification. Success. Traffic constructions in the construction in the constructio | ountryside. Landscape a | nd nature |
| protection. Applied e | <u>.</u> | | |
| 20Y1AE | Applied Electronics | KZ | 2 |
| | niconductor components, their principles, characteristics and typical connection diagrams. Semiconductor PN junction diod | | • |
| amplifiers, basic log | ic gates. Functions of basic electronic circuits and methods for their designs (rectifiers, voltage regulator with Zener diode, | transistor as an amplifier | r, operational |
| amplifier as an inver | ting and noninverting amplifier). | | |
| 14Y1BE | Barrierless Transport | KZ | 2 |
| The issue of barrierle | ess accessible public transportation in terms of architectural barriers and also for transportation-technological point of view. | Students will gain theore | tical knowledg |
| of barrierless enviror | nment roads, railway stations, public transport stops, terminal buildings, vehicles, public transport, information and orientation | systems and transporta | tion technolog |
| Theoretical knowled | ge will be supplemented by practical examples. | | |
| 15Y1BO | Work Safety and Health Protection in Transportation | KZ | 2 |
| Fundamental legisla | tive, definition of terms, risks and possible health damage, working conditions and health protection with focus on transpor | tation. Health protection | programmes, |
| health insurance of | home and foreign business trips, statistics, working practice. | | |
| 11Y1BK | Error Detection Codes for Interlocking Systems | KZ | 2 |
| | i and methods for its assuring. Safety codes linear codes, cyclic codes, BCH codes, Reed-Solomon codes. Transmission cha | | mission error |
| | cted error. Design and assessment of detection codes; requirements of the European standard EN 50159. | | |
| 21Y1BS | Unmanned aircraft systems 1 | KZ | 2 |
| _ | Development. Aircraft design. Legislation in force in the Czech Republic. Planning and execution of the flight. Airspace division | 1 1 | |
| procedures. Practica | | | , |
| 14Y1BM | Biometric Methods | KZ | 2 |
| | ns, authentication methods, principles and performance measurement of biometric systems, overview of biometric technology | 1 | - |
| | ethod, 2D and 3D face recognition, vein patterns on the wrist, ear biometrics, fingerprint recognition, skin spectroscopy, be | | - |
| = | ions, safety and risks of biometric technologies. | navioral motilogo, trio de | o or biomound |
| | | KZ | 2 |
| 15Y1DZ | History of Railway vs. steam railways, railway network development in the 2nd half of 19th century, regional railways epoch, railways of the "Fi | | 2 |
| , | | | , |
| = | ay development in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train | connections, ranway inte | es construction |
| | illway junctions. Excursions and projections. | 1/7 | |
| 12Y1DS | Project Documentation in Practice | KZ | 2 |
| | on creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining p | rocess. Budget and pric | ing. Practical |
| | oject documentation parts. | | |
| 20Y1EK | Qualification in Electrical Engineering | KZ | 2 |
| • | with measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock | | - |
| - | llowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, | legislation, standards ar | nd regulations |
| | and safety and electrical engineering. | | |
| 16Y1EN | Energy Requirements of Vehicles | KZ | 2 |
| | | 0 1 " | aina alaatria |
| Dynamics and the d | riving inertial of the vehicles. Types of energy - kinetic, static, heat, chemical and others. Ways of energy change into kineti | c energy. Combustion er | igine, electric |

| 20Y1EA Environmental Aspects of Transport | KZ | 2 |
|--|---|---|
| State of the atmosphere, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilities of the atmosphere, weather observation network, weather in transportation, road meteorology. | listic forecasts, fore | ecast evaluation. |
| Air quality, main pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and trans | portation in climate | |
| 15Y1EH European Integration within Historical Context | KZ | 2 |
| Versailles system, formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism | | |
| goals. Europe after Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war ar | id its consequence | s for Europe. |
| New quality of French-German relationship - a driving power of starting European integration. | 1/7 | |
| 18Y1EM Experimental Methods in Mechanics The purpose and role of experimental methods produced from methods of experimental methods. Postwetive and conductive and conduct | KZ | 2 |
| The purpose and role of experimental mechanics. Sensors for mechanical testing. Overview of experimental methods. Destructive and non-destruc experimental procedures and sample preparation. Tensile and bending tests. Electrical resistance strain gages. Optical based strain measurement. | • | • |
| Instrumented hardness testing. Introduction to electron microscopy. Errors in measurement. | r aligue and illetim | e prediction. |
| 15Y1FD French Area Studies and Transportation | KZ | 2 |
| France - geography and regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air t | 1 | |
| French society and culture. Current political system. System of education, studying in France. Selected authors of French literature. French gastronic | • | |
| 14Y1HW Computer Hardware | KZ | 2 |
| Computer architecture, basics of logical circuits design and their realization using FPGA. In detail, description of computer architecture and separat | e parts designing | controllers, |
| arithmetic and logical units, I/O subsystem. | | |
| 15Y1HL History of Civil Aviation | KZ | 2 |
| Beginnings of flying, development of aircrafts lighter than air. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development | • | • |
| World airports. Famous aviators. Helicopters. CSA airplanes. Development of aircrafts in Czechoslovakia between the years 1945-1989. Classic era | of aviation. Golde | n era of civil |
| aviation. Modern era of civil aviation. Airline companies. Supersonic flying. | 1 | |
| 15Y1HD History of City Mass Transport | KZ | 2 |
| History of city mass transport in the world, development of tram, bus and trolley-bus systems. History of transport networks in the world, current tre | - | ents of tariff and |
| clearance systems. History of city transport in Prague and Brno. History of tram, bus and trolley-bus operation systems in the Czech Republic and S | | |
| 12Y1HD Traffic Noise | KZ | 2 |
| Acoustic introduction, basic terms, quantities. Basics of physiological acoustic, noise impacts on human body. Acoustic legislation, standarts, regularea, principles of urban acoustic, noise transmission, soundproofing. Types of noise sources in area. Determination of acoustic situation in the area | | |
| computing and measurement of transport noise. Acoustic studies, measuring protocol. | a of interest. Weth | dology of |
| 15Y1HE Work Hygiene and Ergonomics in Traffic | KZ | 2 |
| Basic knowledge of occupational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of the | 1 | |
| Creation and protection of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technology | | |
| Practical examples from the field of transportation; relevant legislature. | • | |
| 16Y1IS Interactive simulators and simulations | KZ | 2 |
| Simulation theory and application of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical relationships and their mathematical relationships are supplied to the computing equipment. | nodels. Computing | methods. |
| Simulation of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive simulation of vehicle dynamics, on-land carriage in particular. | ulators. | |
| 12Y1KN Combined Transportation | KZ | 2 |
| Combined transport strategy and legislation. Load units. Means of transport in combined transport. Combined transport systems. Transshipping are | | stic centres. |
| 12Y1KP Communication and Promotion of Transport Projects | KZ | 2 |
| Fundamentals of Public Relations and the power of public opinion. Work and tasks of PR department and press spokesperson. Communication with | | |
| networks and beyond. Communication strategy of transport projects. Systematic goodwill building. Crisis situations in communication and preparation of the communication of | on for crisis commu | ınication. The |
| influence of political marketing and political PR on transport projects. Lobbing. | 147 | |
| 20Y1KP Communication and presentation skills | KZ | 2 |
| Motivation, priorities and their fulfillment, current communication networks, work with various sources, formal requirements of emails and final these | | - |
| teamwork, emotional intelligence, manipulation and way of working with it, coping with stressful situations, formal requirements of presentations, was presentation, presentation skills, presentation skills in online environment. | ays or communicat | on during |
| 21Y1LJ Aeronautical Radio and Flight Instruments | KZ | 2 |
| Basic definitions, history of aircraft instrumentation, aerometric instrumentation, Earth magnetism, aircraft electric equipment, gyroscopic instrument | 1 | |
| other aircraft equipment, engine instrumentation, warning and recording systems, instrumentation operational requirements, radiocommunication a | | |
| 21Y1LS Air Traffic Services | KZ | 2 |
| Airspace structure in Czech Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, | 1 | |
| at USA and Czechoslovakia. ATS - Model of financing. Training System of Air Traffic Controllers. Future development of ATS. | | • |
| 17Y1LL Logistics of Passenger and Freight Air Transport | KZ | 2 |
| Logistics airline passenger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial | | passengers and |
| air cargo. Information systems in air transport. Global distribution systems. | | |
| 20Y1LN Location and Navigation | | 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. | KZ | _ |
| transport connections, routing algorithms, their properties and implementation. | 1 | |
| | 1 | |
| 17Y1MD Marketing in Transportation | 1 | |
| General principles of marketing applied to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transport | xamples of datase | ts for finding |
| General principles of marketing applied to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transport the application of marketing. | KZ ort and the resultin | ts for finding 2 g differences in |
| General principles of marketing applied to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transport the application of marketing. 18Y1MT Engineering Materials | KZ ort and the resultin | ts for finding 2 g differences in |
| General principles of marketing applied to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transport the application of marketing. 18Y1MT Engineering Materials Systematic overview of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers | KZ ort and the resultin KZ and composites, a | ts for finding 2 g differences in |
| General principles of marketing applied to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transport the application of marketing. 18Y1MT Engineering Materials Systematic overview of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers to biological materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's selection | KZ ort and the resultin KZ and composites, a | ts for finding 2 g differences in 2 attention is paid |
| General principles of marketing applied to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transport the application of marketing. 18Y1MT Engineering Materials Systematic overview of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers to biological materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's selection. 21Y1MP Matlab for project-oriented study | KZ ort and the resultin KZ and composites, and charts. | ts for finding 2 g differences in 2 attention is paid |
| General principles of marketing applied to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transport the application of marketing. 18Y1MT Engineering Materials Systematic overview of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers to biological materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's selection. 21Y1MP Matlab for project-oriented study The subject's syllabus is focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exercts | KZ ort and the resultin KZ and composites, and charts. KZ ises will be prepar | ts for finding 2 g differences in 2 attention is paid 2 ed according to |
| General principles of marketing applied to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transport the application of marketing. 18Y1MT Engineering Materials Systematic overview of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers to biological materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's selection and to subject syllabus is focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exerciparticular examples, based on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improver | KZ ort and the resultin KZ and composites, and charts. KZ isses will be preparment of students' M | ts for finding 2 g differences in 2 uttention is paid 2 ed according to latlab skills. |
| General principles of marketing applied to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transport the application of marketing. 18Y1MT | KZ and composites, a con charts. KZ sises will be preparement of students' M | ts for finding 2 g differences in 2 attention is paid 2 ed according to lattab skills. |
| General principles of marketing applied to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transport the application of marketing. 18Y1MT | KZ and composites, a con charts. KZ sises will be preparement of students' M | ts for finding 2 g differences in 2 attention is paid 2 ed according to lattab skills. |
| General principles of marketing applied to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transport the application of marketing. 18Y1MT | KZ ort and the resultin KZ and composites, a con charts. KZ isses will be preparement of students' M KZ elines, and distributions. | ts for finding 2 g differences in 2 attention is paid 2 ed according to latlab skills. 2 ttion lines. |
| General principles of marketing applied to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transport the application of marketing. 18Y1MT | KZ and composites, a con charts. KZ sises will be preparement of students' M | ts for finding 2 g differences in 2 attention is paid 2 ed according to lattab skills. |

| 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 sema | ntic analysis of texts. | Discussion on |
| selected topics. | | |
| 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 | - | |
| various aspects of their strategy, economic and operational indicators. It introduces students in detail to operational processes and the essentials of | of transportation proce | esses. It provides |
| a basic view of the economic aspects of air transport. | 1 | |
| 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 compo | · | ables, maps, |
| panels) and operators (cycles, location or current delay of vehicles,). The issue of tariff systems. Other examples of clearance systems (par | | |
| 14Y1OJ Object - oriented programming in JAVA | KZ | 2 |
| Objective thinking. Encapsulation. Classes. Attributes. Access modifiers. Methods and overloading. Special methods (constructors, getters / setters) | | |
| data types. Inheritance. Polymorphism. Statics, constants, interfaces, abstract classes, enum, packages, exceptions, collections, generics, lambor | la expressions, anony | |
| 14Y1OP Operating System | KZ | 2 |
| Distributions. Installation GNU/Linux OS. X-window system. Rights management - users and groups, ACL rights. Filesystems and attributes. Property of the control of the con | • | |
| runlevels. Basic console programs / commands. Config files. SW management, package systems. Programs in graphic shell - text, spreadsheet, | graphic editors, soun | d, video and |
| communication. Services management. Safe and secure configuration of OS. Remote administration. | 1 | |
| 17Y1OF Personal Finance | KZ | 2 |
| Personal finance (budget, financing of basic living needs), debt (loans and credits, payment instruments, interest and fees, debt trap), financing of basic living needs), debt (loans and credits, payment instruments, interest and fees, debt trap), financing of basic living needs), debt (loans and credits, payment instruments, interest and fees, debt trap), financing of basic living needs), debt (loans and credits, payment instruments, interest and fees, debt trap), financing of basic living needs), debt (loans and credits, payment instruments, interest and fees, debt trap), financing of basic living needs), debt (loans and credits, payment instruments, interest and fees, debt trap), financing of basic living needs), debt (loans and credits, payment instruments, interest and fees, debt trap), financing of basic living needs), debt (loans and credits, payment instruments, interest and fees, debt trap), financing of basic living needs), debt (loans and credits, payment instruments), debt (loans and credits), debt (loans and | = : | |
| consumer loans, refinancing), savings and investments (investment horizon, return, risk, investment strategy), insurance (insurance types, suitabi | ity and adequacy), se | curing the future |
| (retirement savings and insurance). | | |
| 20Y1OK Road Lighting | KZ | 2 |
| Basic lighting quantities and terms, street lighting components (luminaires, control cabinets for street lighting, street lighting cables), characteristics | • | • |
| light distribution), standards, measurement of illuminance and luminance in road lighting, tunnels, conceptual approach to street lighting design, | lighting calculations i | n DIALux and |
| Relux, street lighting control systems. | | |
| 11Y1PV Parametrical and Multicriterial Programming | KZ | 2 |
| Solution to the problem of linear programming with a parameter in objective function, on right sides and in the matrix of coeficients of linear constraints. | | |
| 17Y1PM Personnel Management | KZ | 2 |
| Human sources, work group, man as personality, planning, choice, evaluation and education of human sources, work adaptation, teamwork, interest and education of human sources, work adaptation, teamwork, interest and education of human sources, work adaptation, teamwork, interest and education of human sources, work adaptation, teamwork, interest and education of human sources, work adaptation, teamwork, interest and education of human sources, work adaptation, teamwork, interest and education of human sources, work adaptation, teamwork, interest and education of human sources, work adaptation, teamwork, interest and education of human sources, work adaptation, teamwork, interest and education of human sources, work adaptation, teamwork, interest and education of human sources, work adaptation, teamwork, interest and education of human sources, and education of human sources are not education of human sources. | rcultural communicat | ion. |
| 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 cycles and disabled people. | le route layout and de | sign parameters |
| for cyclists. Separation of cyclists from other transport modes. Cycle tracks and its design - one way streets, reserved traffic lanes, bus stops, cro | ssings with other tran | nsport modes, |
| crossroads. Traffic signs and road marking for cyclists. | | |
| 14Y1PG Computer Graphics | KZ | 2 |
| Basic formats of graphic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work wit | n editing programs (w | ithin the user |
| level scope) using layers, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics cards. | | |
| 14Y1P2 Computer Aid of Transportation Projecting 2 | KZ | 2 |
| Overview of CAx application for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, script | ing, data exchange). | Advanced blocks |
| modification (attributes, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic t | ransition curve, cross | and longitudinal |
| section). Basics of 3D modelling. | | |
| 18Y1PS Computer Simulations in Mechanics | KZ | 2 |
| Principles and overview of tools for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model development | | |
| from other CAE systems. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary conditions are also as a second condition of the conditions are also as a second condition of the conditions are also as a second condition of the conditions are also as a second condition of the condition of t | ons and application o | f the load. Basic |
| tasks of structural and modal analysis. Introduction to complex nonlinear problems. | | |
| 14Y1PI Corporate Information System | KZ | 2 |
| Data-information-knowledge, components of information system, syntatic and semantic sense of data, structure of corporate information system | • | - |
| (personalistic, production, storage, etc.), corporate information politic and information control, risks of information system operation, legal environ | ment of information s | ystem operation, |
| state information system, information system security, data protection, safety politics. | | |
| 14Y1PZ Advanced Data Processing in Spreadsheets | KZ | 2 |
| Students will be familiar with principles of working in a spreadsheet. Graphic layout of the table appearance, formatting of numbers, insertion of f | | _ |
| addressing, error detection. Working with large spreadsheets, filters, advanced filters, database functions. Pivot tables and charts, conditional form | atting, solution finding | , solver, macros, |
| data analysis. Examples and questions from various companies and training. | | |
| 21Y1PC ATC Procedures and Activities | KZ | 2 |
| Air traffic control procedures, basics of communication and phraseology, aircraft identification, spacing and traffic coordination. In addition, the co | | affic control at |
| the airports and low visibility operational procedures. Students will during the course learn basic safety management applications applied across | | |
| 20Y1PK Product Quality Management Processes | KZ | 2 |
| General principles of organization management. Management systems and international standards; quality management systems. Quality produ | | |
| of standards for systems management, management principles. Principles of process management, monitoring and measurement systems management | ment. Uniform framev | ork of standards |
| for systems management. Process management principles. Metrology and testing. Product certification. | | |
| 14Y1PJ C Programming Language | KZ | 2 |
| C programming language. Preprocessor, basics of the C language (data types, syntax, commands), functions, pointes, dynamical memory allocations. | on, string, files, struct | ures and unions. |
| Implementations of abstract data types (FIFO, LIFO, list), programming techniques (sorting, searching, recursion), using bitwise oprerators. | | |
| 12Y1C1 Designing Roads in Civil 3D I | KZ | 2 |
| The course is devoted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go the | | - |
| particular linear building, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation | n. The course also inc | ludes a basic |
| explanation of the traffic building design in the real-life profession. | | _ |
| 12Y1C2 Designing Roads in Civil 3D II | KZ | 2 |
| The course is devoted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go the | | - |
| particular linear building, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation | n. The previously acqu | ured skills are |
| improved and developed. Students learn to design intersections. | 17- | _ |
| 14Y1PA 3D Modeling in AutoCAD | KZ | 2 |
| | to be the second | |
| Work in 3D non-parametric modeller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup creation, connected with external database. Basic definition of work with lights, materials and reflexes. Models presentation. | object data creation, v | vork with data |

| 16Y1PV Operation, Construction and Maintenance of Vehicles Methods of vehicle production. Vehicle maintenance. Vehicle diagnostics. Maintenence and repair plans. Engine maintenance and emission measure | KZ ement. Transmissi | 2 on mechanism. |
|---|---------------------------------------|---------------------|
| General principles of engine diagnostics. | | |
| 12Y1PU Organization Disposition of Railway Stations Connecting station. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zo | | 2 nation yards. |
| Reserve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic railway r | | |
| 12Y1RU Railway Lines Reconstruction Keeping railway line operational, maintaining lines and stations, geometrical alignment of railway line, vehicles for railway superstructure and substruction | KZ ucture maintenand | 2 ce, scheduling |
| and organising possesions, preparation of railway lines reconstruction and maintenance, process of ralway line reconstruction. | | |
| 16Y1RE Control and Electronic Vehicle Systems Elementary concepts of 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, comfort systems. | safety, communi | cation and |
| 21Y1RZ Human Resources Management The position of human resources in the organization and related disciplines file. Substance, importance and challenges of human resources management | KZ ement. Internal an | 2 d external |
| environment of human resource management. Human resource planning. Search, recruitment and selection of employees. Motivation, evaluation and dismissal and redundancies of employees. Education of employees. Planning career management. | remuneration of | staff. Positioning, |
| 17Y1ST Titan Simulation | KZ | 2 |
| Titan is a management game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same produce. | · · · · · · · · · · · · · · · · · · · | _ |
| | | - |
| determine the quantity and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequer of financial corporate reports and they use this information for other business decisions. | ices of their decis | ions by the form |
| 21Y1SI ATC Simulator | KZ | 2 |
| Familiarization with the simulation environment, acquiring basic habits, aircraft identification procedures, vectoring, level changes, ATC clearance, us | | |
| exercises focusing on basic vectoring, early application of vertical separation, EST and REV message passing. Practical exercises in the APPROAC | • | |
| departure management procedures, conflict resolution. | rrarea, practicing | arrivar ariu |
| 20Y1SC Sensors and Actuators | KZ | 2 |
| Principles of sensors and actuators. Basics of measuring theory and actuating influence. The respective technologies and construction principles. Sensor | · · · · · · · · · · · · · · · · · · · | |
| state (temperature, humidity), chemical and particle flow values. Electrical, pneumatic and hydraulic actuators and solid phase elements. | 3 Of Mechanical, 6 | siectio-magnetic, |
| 17Y1SL Sociology of Human Resources | KZ | 2 |
| Human resources and their importance, work group as a special kind of social group, communication, personal management, modern management, h | | _ |
| of the organization. | iumam resources | planning, culture |
| 11Y1SI Transportation Software Engineering | KZ | 2 |
| Basic concepts of software engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and imple | | |
| and practical usuage. | mentation daing it | illiai teeliiliqaes |
| 16Y1KS Quality and Reliability of Vehicles | KZ | 2 |
| Quality and reliability theory in design, development, production and operation of vehicles. Definition and possible approach to quality and reliability. | | _ |
| Mode and Effects Analysis), QFD (Quality Function Deployment), DFx (Design for Assamly, Manufacturying, Quality, Services) and other methods | | |
| Knowledge-based systems of quality and reliability, data collection. | | αρριισατιστιστ |
| 12Y1SU Road Management and Maintenance | KZ | 2 |
| Getting familiar with ownership of roads in the Czech Republic and the administration of the road at the state and county level. It is presented develo | | |
| medium and long-term strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and re | • | |
| classroom as well as investment activity in highway engineering. | | |
| 16Y1SO Strategy and innovation in mobility | KZ | 2 |
| Introduction to innovation, definition. Innovation strategy. Innovation life cycle and ecosystem, main sources and funding opportunities. Successful in | | |
| co-financing, evaluation. Sprint method and its use. Innovative business model - main patterns and examples, design, strategy, processes and outloo | | - |
| of use). Creating an innovation strategy. Customer and value map, design and testing. | ok (business plan | and possibilities |
| 17Y1SK Urban and Regional Rail Transport Systems | KZ | 2 |
| Factors affecting transport demand, modal-split, distribution of passenger flows on public regional transport lines. Optimization of line management, | | |
| evaluation of the timetable. Vehicle circulation creation. Optimizing driver shifts and arranging them in turnus. Effects of barrier-free and public transp | _ | - |
| marketing. | o. (p. o. o. o o o o | |
| 11Y1TG Graph Theory | KZ | 2 |
| Basic concepts and terminology of graph theory, graph representation. Problems of graph theory, problem instance. Graph search algorithms, trees, | | |
| path problem, Eulerian path, bipartite graph matching, flow networks, circulations, critical path method, traveling salesman problem. Problem of existence | - | - |
| for their solving. Computational complexity, dealing with NP-complete problems, heuristic approach. | , | Ü |
| 14Y1TI Creating Interactive Internet Applications | KZ | 2 |
| Possibilities of scripting language PHP. Overview of PHP language syntax, and functions. Analysis of finished scripts and demonstration of solutions. | | |
| in PHP language. | Tour own applicat | ion programmou |
| 21Y1UL Aircraft Maintenance | KZ | 2 |
| Aircraft operations and technical operations. Maintenance and work processes. Defects search methods, status check diagnostic tools. Selection and | | |
| Basic documentation for maintenance. Optimization of time maintenance intervals. Regulation no. 1321/2014 Part 145. Human factors of aircraft maintenance. | 3 | - |
| EASA for aircraft maintenance. Seminars will be focused on practical application. | 3 | |
| 14Y1UP Editing of Theses in MS Word | KZ | 2 |
| Students will be introduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, cre | | |
| figures, tables, graphs, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless | | |
| so that they are able to concentrate mainly on writing a thesis. | - | |
| 18Y1UK Introduction of Rail Vehicles | KZ | 2 |
| Basic characteristics and parameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion | | |
| track resistance. Total running resistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehicle | | _ |
| and electric drive. Design concept rail vehicles and drive of wheel set. | | |
| 12Y1VR Public Transport in Cities and Regions | KZ | 2 |
| Professional and political pillars of public transport. Accessibility of public transport. Transport demand management and directional coordination of l | ines. Principles of | line tracing. |
| Basic operating parameters and transport variations. Types of lines according to their routing and basic operating parameters. Time coordination of lines | nes. Operational | traffic control. |
| Organization of tram operation in Prague. Tram safety. | | |
| | | |

| 14Y1VM Development of Applications for Mobile Devices | KZ | 2 |
|--|-----------------------|------------------|
| Object oriented programming, Java programming language, development environment, operating system Android, development application - widgets | s, containers, thre | ads, menu, |
| permissions, services, GUI. | | |
| 16Y1VT Development in Railroad Vehicles | KZ | 2 |
| Railroad vehicles traction. Railroad vehicle parametres regulation. Control and driving of railroad vehicles. Importance in heavy duty and personal tra | ansportation. Critic | cal situation |
| assesment. New materials in design. International standardization. | · | |
| 14Y1WG Webdesign | KZ | 2 |
| Students will learn the basics of HTTP communication, URL and addressing, HTML5 markup language, advanced CSS3 techniques, accessible and | d usable web rules | s, responsive |
| webdesign, content management systems, web server installation + configuration directives. The subject matter will be trained on examples. | | |
| 14Y1W1 Webdesign 1 | KZ | 2 |
| Students will learn the basics of communication HTTP, URL and addressing, markup languages HTML and XHTML, HTML tags, rules of web accessi | bility 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 exam | ıples. |
| 14Y1W2 Webdesign 2 | KZ | 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. | | |
| 16Y1ZG Introduction into Applied Computer Graphics | KZ | 2 |
| Computer graphics, division and applications with emphasis on transport, including development and research. Colours, colour perception, colour so | hemes, models, p | rinciples of 2D |
| and 3D generation, elementary algorithms for graphic data workout. Visualisation principles and tasks, technics, graphics and visualisation HW basic | cs. Introduction to | 2D and 3D |
| graphics software. | | |
| 14Y1ZM Fundamentals of parametric and adaptive modeling | KZ | 2 |
| Basics of work at products and parts creation. Sketch drawing by help of geometric relations, parametric dimensions, creation of adaptive models fro | m 2D sketches. In | nport and export |
| from and to another systems. Fundamentals of assemblies creation. | | |
| 11Y1ZM Foundation of MATLAB Programming | KZ | 2 |
| To explain the principle of algorithmization, flow charts, description of MATLAB environment and its settings, MATLAB help, mathematical operators, r | natrices and elem | ents operations, |
| control flow, inputs and outputs, graphics, optimization and program code debugging. | | • |
| 14Y1ZJ Fundamentals of programming in JAVA | KZ | 2 |
| Introduction to the Java SE Platform. IDE Installation and First Project. Comments. Variables and Type System. Operators. User Input and Parsing. C | | onversion. Text |
| Chain and Mathematical Methods. Terms. Relational Operators and Switches. Cycles for, while, foreach. Field - declaration, initialization, methods fo | r field work. ASCII | . Functions, |
| parameters, return value, recursion. Program creation. | | |
| 12Y1ZU Principles of Urbanism | KZ | 2 |
| Survey on history of city and settlement building. Functional components and their mutual relations (working, living, recreation, transportation). Space | rial arrangement o | f settlements. |
| Types of towns or cities with a certain prevailing function, forms of their development. Brief overview of land-use planning. | Ü | |
| 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 control of the "West" and "East" from the 1500s. Focus on the history in the period between 1850 nad 1950. Milestones and control of the "West" and "East" from the 1500s. Focus on the history in the period between 1850 nad 1950. | | - |
| in the end of 19th century and the beginning of the 20th century. Revolutions, the causes and consequences. Scientific and technological progress, the causes and consequences are consequences. | | |
| Economic and financial history. Social changes. Discussions on texts, sources. | | • |
| 16Y1ZL Vehicle Testing, Legislation and Construction | KZ | 2 |
| Vehicle, bus and motorbike costruction, aggregate computing, driving resistance, build and parameters of traction, constructional arrangement of person | ' | _ |
| legislation in the EU and in the world, technical legislation creation, testing methods, vehicle tests, accelerated tests, mathematical modelling in testi | | |
| Service of the servic | 9 | |

Name of the block: Elective courses Minimal number of credits of the block: 0

The role of the block: V

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

Name of the group: Bachelor Full-Time TET voluntary

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

Credits in the group: 0 Note on the group:

| Code | Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.) | Completion | Credits | Scope | Semester | Role |
|--------|---|------------|---------|-------|----------|------|
| 14DPK | Digital Support for Designing of Roads and Highways Drahomír Schmidt, Libor Žídek Drahomír Schmidt Drahomír Schmidt (Gar.) | Z | 0 | 0P+2C | Z | V |
| 14DZT | Digital Support for Railway Lines Martin Brumovský | Z | 0 | 0P+2C | L | ٧ |
| 11SCFZ | Seminar of Physics Old ich Hykš, Zuzana Malá, Tomáš Vít , Jana Kuklová Zuzana Malá Zuzana Malá (Gar.) | Z | 0 | 0P+2C | Z | V |
| 21SLD | Seminar of Air Transport | Z | 0 | 0P+2C | L | V |
| 18SPP | Seminary from Elasticity and Strength Tomáš Doktor, Jan Vy ichl 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 | Z | 0 | 0P+2C | L | V |
| 11SSF | Secondary School Physics Course Zuzana Malá | Z | 0 | 0P+2C | L | V |

| I VIXLV | Physical Education Course | | 0 | / uiii | | V |
|-----------------------|--|-------------------------------------|-----------------|-----------------|--------------|------------------|
| TVKZV | Physical Education Course | Z | 0 | 7dní | Z | V |
| haracteristic | s of the courses of this group of Study Plan: Code=VP-BP- | -TET-20/21 Name=Bach | elor Full- | Time TET | volunta | ry |
| 14DPK | Digital Support for Designing of Roads and Highways | | | | Z | 0 |
| Seminars possibilit | ties of technical processing problems focused on designing of roads and highway | ys. | | | | |
| 14DZT | Digital Support for Railway Lines | | | | Z | 0 |
| 3eminars possibilit | ties of technical processing problems solved in the field of railway lines. | | | · | | |
| 11SCFZ | Seminar of Physics | | | | Z | 0 |
| Solving problems of | on kinematics, particle dynamics, dynamics of particle systems and rigid body. Co | ontinuum mechanics, thermody | namics. | ' | ' | |
| 21SLD | Seminar of Air Transport | | | | Z | 0 |
| listory, definitions | , terminology, basic rules. VFR / IFR. Basics of aerodynamics. Propulsion of aircr | aft. Aircraft design. Basics of na | vigation, rac | dio navigation. | Weight, ba | alance, |
| erformance. Fligh | nt planning, optimization of speed and heights, minimum fuel. Limitations of opera | ation, maintenance, service life | of aircraft. Tr | affic managen | nent, grour | nd handling, |
| security. Air crew. A | Airlines and economics. Space technologies. | | | | | |
| 18SPP | Seminary from Elasticity and Strength | | | | Z | 0 |
| Excersise for pract | tice. Tension and compression. Bending of beam. Shear stress during bending of | beam. Design and analysis of | cross section | n of beam. Ana | alysis of de | flection curve |
| of beam. Torsion of | f circle cross section. Combined loading. Stability of compressed bar and bucklin | g. | | | | |
| 18STD | Seminary from Technical Documentation | | | | Z | 0 |
| echnical standard | ds, international standardization, technical drawings, representation of technical c | objects, technical diagrams and | charts, dime | ensional and g | eometrical | accuracy, |
| arrangement of dra | awing sheets. | | | | | |
| 18SS | Seminary from Structural Analysis | | | | Z | 0 |
| Examples for pract | tise. General system of forces. Reactions of mass objects and compound system | s. Internal forces on statically de | eterminate b | eam and simp | le framew | ork. Application |
| of principle of virtu | al works for calculation of reactions of staticaly determinate systems. Determinat | tion of axial forces in truss cons | truction - me | thod of joints | and metho | d of sections |
| Geometry of cross | s sections. Plane fiber polygons. | | | | | |
| 11SSF | Secondary School Physics Course | | | | Z | 0 |
| Basics of kinemation | cs. dynamics, thermodynamics, electric field and magnetic field. | | | ' | ' | |

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

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

Physical Education Course

Physical Education Course

Physical Education Course

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

Credits in the group: 0 Note on the group:

TVKLV

TVKLV

TVKZV

| 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 | Z | 0 | 0P+2C | L | V |

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

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

List of courses of this pass:

| Code | Name of the course | Completion | Credits |
|--------------------|--|----------------------|--------------|
| 00Y1XB | Active participation in a scientific project, workshop, short-term trip abroad | KZ | 2 |
| 11CAL1 | Calculus 1 | Z,ZK | 7 |
| Sequence of real n | umbers and its limit. Basic properties of mappings. Function of one real variable, its limit and derivative. Indefinite integral, Newton integ | ral, Riemann integr | al, improper |
| | Riemann integral. First-order differential equations, linear differential equations. | | |
| 11CAL2 | Calculus 2 | Z,ZK | 5 |
| 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. | , | Į. |
| 11FYZ | Physics | Z,ZK | 5 |
| | Kinematics, dynamics, Newton's laws, force fields, mechanics of continuum, thermodynamics, introduction to electrostatics and elec | tric current. | ı |
| 11GIE | Geometry | KZ | 3 |
| Differential geome | etry of curves - parameterization, the arc of the curve, torsion and curvature, Frenet's trihedron. Kinematics - a curve as a trajectory of | 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 the | | minants and |
| | their applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classifications. | | _ |
| 11MSP | Modeling of Systems and Processes | Z,ZK | 4 |
| | tem, external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of differe linear system, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer function | | |
| Linear and non | Discretization of continuous systems. System interconnection. | on. Stability of Errs | ystems. |
| 11SCFZ | Seminar of Physics | Z | 0 |
| 1.00.2 | Solving problems on kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermody | _ | |
| 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. | | ı |
| 11SSF | Secondary School Physics Course | Z | 0 |
| | Basics of kinematics, dynamics, thermodynamics, electric field and magnetic field. | | |
| 11STAT | Statistics | Z,ZK | 4 |
| Basics of probabi | lity Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Parameter | tric tests Nonparan | netric tests |
| 44TCA | Regression and correlation analysis | 7 71/ | 4 |
| 11TGA | Graph Theory and its Applications in Transport f graph theory, paths in graphs, flows in networks, location problems, design problems on graphs, optimum routing, use of graphs in c | Z,ZK | 4 |
| 11X31L | Project 1 LED | Z | 2 |
| 11X31L 11X32L | Project 2 LED | Z | 2 |
| | , | | |
| 11X33L | Project 3 LED | Z KZ | 2 |
| 11Y1BK | Error Detection Codes for Interlocking Systems n and methods for its assuring. Safety codes linear codes, cyclic codes, BCH codes, Reed-Solomon codes. Transmission channels, de | 1 | _ |
| Sale communication | probability of undetected error. Design and assessment of detection codes; requirements of the European standard EN 501 | | 551011 611015, |
| 11Y1PV | Parametrical and Multicriterial Programming | KZ | 2 |
| | plem of linear programming with a parameter in objective function, on right sides and in the matrix of coeficients of linear constraints. Co | 1 | l |
| 11Y1SI | Transportation Software Engineering | KZ | 2 |
| | oftware engineering, ranging from domain analysis, requirement analysis and software architectures to analyses, design and implemen | ntation using forma | l I techniques |
| | 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, min | | |
| path problem, Eule | rian path, bipartite graph matching, flow networks, circulations, critical path method, traveling salesman problem. Problem of existence a | and optimization and | d algorithms |
| 11Y1ZM | for their solving. Computational complexity, dealing with NP-complete problems, heuristic approach. | KZ | 2 |
| | Foundation of MATLAB Programming iple of algorithmization, flow charts, description of MATLAB environment and its settings, MATLAB help, mathematical operators, mat | 1 | _ |
| | control flow, inputs and outputs, graphics, optimization and program code debugging. | | |
| 12MDE | Transport Models and Transport Excesses | Z,ZK | 3 |
| Parameters of the | traffic flow and methods for their measurement. Models of the traffic flow, communications load, line and urban systems. Theory of qu | leues, shock wave | s. Quality of |
| transport and its a | assessment. Statistical characteristics of transport. Transport excesses, their analysis, the causes, identify and minimize the consequ | ences. Improving o | f transport |
| | safety and fluency. | | _ |
| 12PPOK | Designing Roads, Highways and Motorways | KZ | 3 |
| | ownership, maintenance, management and categorization of roads and highways. Curve and transition curve. Sinuosity and standard stopping and overtaking. Road body - shapes and proportions, bottom and superstructure. Drainage and components of roads. Safet | | |
| Kange of Vision for | intersections. | ty device. Crossing | s, junctions, |
| 12X31L | Project 1 LED | Z | 2 |
| 12X32L | Project 2 LED | Z | 2 |
| 12X33L | Project 3 LED | Z | 2 |
| 12Y1AE | Applied Ecology | KZ | 2 |
| 1 | phred Ecology ecological concepts and principles, ecosystem, ecological factors, energy flow through the ecosystem. Application of knowledge with | 1 | |
| 1 | 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 | | |
| 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 | es a basic |
| 12Y1C2 | explanation of the traffic building design in the real-life profession. | KZ | 2 |
| | Designing Roads in Civil 3D II voted to the traffic buildings design field, specifically the design of roads as such, by the means of a 3D software. Students go through | | |
| | uilding, from the initial situation, over the longitudinal section, to the model and work sections and the cubic capacity calculation. The | | |
| | improved and developed. Students learn to design intersections. | | |
| 12Y1DS | Project Documentation in Practice | KZ | 2 |
| Project document | ation creating. Project documentation types. Support materials for project documentation creating. Building permit obtaining process. | Budget and pricing | g. Practical |
| | creation of some project documentation parts. | I | |
| 12Y1HD | Traffic Noise | KZ | 2 |
| | 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 | | |
| area, principies | or urban acoustic, noise transmission, soundprooting. Types or noise sources in area. Determination or acoustic situation in the area computing and measurement of transport noise. Acoustic studies, measuring protocol. | or interest. Method | JUIUGY UI |
| 12Y1KN | Combined Transportation | KZ | 2 |
| | ort strategy and legislation. Load units. Means of transport in combined transport. Combined transport systems. Transshipping areas | 1 | l I |
| | | | |

| | Communication and Dramation of Transport Drainets | 1/7 | 2 |
|--|--|--|--|
| | Communication and Promotion of Transport Projects Public Relations and the power of public opinion. Work and tasks of PR department and press spokesperson. Communication with the | KZ e media, the nub | 2 |
| | ond. Communication strategy of transport projects. Systematic goodwill building. Crisis situations in communication and preparation for | | |
| • | influence of political marketing and political PR on transport projects. Lobbing. | | |
| 12Y1PC | Pedestrian and Cycling Transport | KZ | 2 |
| Routes for pedestri | ans. Pedestrian crossings. Modifications for blind, dim-sighted and disabled people. Design of cycle routes network. Ways of cycle route | layout and desig | n parameters |
| for cyclists. Separ | ation of cyclists from other transport modes. Cycle tracks and its design - one way streets, reserved traffic lanes, bus stops, crossings | with other trans | port modes, |
| | crossroads. Traffic signs and road marking for cyclists. | | 1 |
| 12Y1PU | Organization Disposition of Railway Stations | KZ | 2 |
| = | on. Passenger transport equipment. Freight transport equipment. Branch lines and railway traffic inside industrial company areas. Zon- | | - |
| | rve stations. Technology of work in railway station with regard to its disposition. Railway station documentations in the Czech Republic | | |
| 12Y1RU | Railway Lines Reconstruction | KZ | 2 schoduling |
| Reeping fallway iii | ne operational, maintaining lines and stations, geometrical alignment of railway line, vehicles for railway superstructure and substructu and organising possesions, preparation of railway lines reconstruction and maintenance, process of ralway line reconstructio | | , scrieduling |
| 12Y1SU | Road Management and Maintenance | KZ | 2 |
| | ith ownership of roads in the Czech Republic and the administration of the road at the state and county level. It is presented developr | | 1 |
| - | erm strategy of the Ministry of Transport. Maintenance of roads winter and summer, its requirements, specifics, possibilities and repair | | |
| | classroom as well as investment activity in highway engineering. | | |
| 12Y1VR | Public Transport in Cities and Regions | KZ | 2 |
| Professional and | political pillars of public transport. Accessibility of public transport. Transport demand management and directional coordination of line | es. Principles of I | line tracing. |
| Basic operating p | arameters and transport variations. Types of lines according to their routing and basic operating parameters. Time coordination of line | s. Operational tra | affic control. |
| | Organization of tram operation in Prague. Tram safety. | | |
| 12Y1ZU | Principles of Urbanism | KZ | 2 |
| Survey on history | of city and settlement building. Functional components and their mutual relations (working, living, recreation, transportation). Spacial | arrangement of | settlements. |
| 407451 | Types of towns or cities with a certain prevailing function, forms of their development. Brief overview of land-use planning. | 7 71/ | 1 4 |
| 12ZADY | Introduction to Transportation Engineering | Z,ZK | 4 |
| 12ZTS | Railway Lines and Stations | Z,ZK | 4 |
| Rail transport. Ra | ailway track geometry parameters. Route layout of railway lines. Railway line construction - railway substructure and superstructure. S | | ailway lines. |
| 44400 | Railway control systems in relation to infrastructure. Operating and carriage points. Railway lines net and category. Traction in rail tr | | 3 |
| 14ASD | Algorithm and Data Structures ze problems, design a theoretical solution to a given problem and write the resulting algorithm using flowcharts, practice reading algori | KZ | 1 |
| = | lean algebra to construct constraints in algorithms. Students will be introduced to the basics of the Python programming language - va | | _ |
| and doo baolo boo | will learn to work with variables of basic data types (integer, floating point and string) and the list data structure in their program | | g, 100p0, 1110y |
| 14DATS | Database Systems | KZ | 2 |
| | of database systems, conceptual model, relational data model, the principles of normal forms, relational database design, security and | | 1 |
| | queries, relational algebra, SQL language, client / server, multilayer architectures, distributed database systems. Access to data via t | the WWW. | |
| 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. | _ | |
| | Certificate possibilities of teerminear processing problems solved in the field of failway lines. | <u>-</u> | <u>'</u> |
| 14PGP | Program Resources | Z | 2 |
| Students will be rer | Program Resources minded of some aspects of Pythom programming, learn basic concepts and constructs from object-oriented programming and their im | Z nplementation in | Python. They |
| Students will be rer will also to | Program Resources minded of some aspects of Pythom programming, learn basic concepts and constructs from object-oriented programming and their in ry out the basics of working with data libraries in Python, namely NumPy, Pandas, Matplotlib, and practice with examples of smaller and their in ry out the basics of working with data libraries in Python, namely NumPy, Pandas, Matplotlib, and practice with examples of smaller and their interest of the programming and their interest of the program in the programming and their interest of the programming and the programmi | Z nplementation in nd larger data siz | Python. They zes. |
| Students will be rer will also to | Program Resources minded of some aspects of Pythom programming, learn basic concepts and constructs from object-oriented programming and their in ry out the basics of working with data libraries in Python, namely NumPy, Pandas, Matplotlib, and practice with examples of smaller at Programming | Z nplementation in nd larger data siz KZ | Python. They zes. |
| Students will be rer will also to 14PRG The Course Prog | Program Resources minded of some aspects of Pythom programming, learn basic concepts and constructs from object-oriented programming and their in ry out the basics of working with data libraries in Python, namely NumPy, Pandas, Matplotlib, and practice with examples of smaller as Programming ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python program | Z nplementation in nd larger data siz KZ nming language i | Python. Theyzes. 2 s expanded |
| Students will be rer will also to 14PRG The Course Prog | Program Resources minded of some aspects of Pythom programming, learn basic concepts and constructs from object-oriented programming and their im ry out the basics of working with data libraries in Python, namely NumPy, Pandas, Matplotlib, and practice with examples of smaller at Programming ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python program rticipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and search | Z nplementation in nd larger data siz KZ nming language i | Python. They zes. 2 s expanded |
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| 14Y1OP | Operating System | KZ | 2 |
|---|--|--|--|
| | tallation GNU/Linux OS. X-window system. Rights management - users and groups, ACL rights. Filesystems and attributes. Programs | | 1 |
| runlevels. Basic c | onsole programs / commands. Config files. SW management, package systems. Programs in graphic shell - text, spreadsheet, graphi communication. Services management. Safe and secure configuration of OS. Remote administration. | ic editors, sound | , video and |
| 14Y1P2 | Computer Aid of Transportation Projecting 2 | KZ | 2 |
| | plication for transportation projecting aid. AutoCAD environment possibilities of basic tasks automatizing (programming, scripting, data | | |
| modification (attribu | tes, relation to databases). Work in projecting group, external references. Basic tasks for cummunication projecting (clotoidic transition section). Basics of 3D modelling. | curve, cross-and | d longitudinal |
| 14Y1PA | 3D Modeling in AutoCAD | KZ | 2 |
| | arametric modeller (AutoCAD) environment, scenes rendering, creation of planar and volumetric objects, user setup creation, object of connected with external database. Basic definition of work with lights, materials and reflexes. Models presentation. | data creation, wo | rk with data |
| 14Y1PG | Computer Graphics | KZ | 2 |
| | raphic and possibilities of their editing and mutual conversion. Use of individual types according to character of work. Work with editin level scope) using layers, DPI, colors. Basics of digital photography, scanning and computer technology like monitors and graphics | ng programs (with | 1 |
| 14Y1PI | Corporate Information System | KZ | 2 |
| | n-knowledge, components of information system, syntatic and semantic sense of data, structure of corporate information system, par | | l . |
| | uction, storage, etc.), corporate information politic and information control, risks of information system operation, legal environment of state information system, information system security, data protection, safety politics. | | - |
| 14Y1PJ | C Programming Language | KZ | 2 |
| | quage. Preprocessor, basics of the C language (data types, syntax, commands), functions, pointes, dynamical memory allocation, strin | | |
| o programming lang | Implementations of abstract data types (FIFO, LIFO, list), programming techniques (sorting, searching, recursion), using bitwise op | • | o aria ariiorio. |
| 14Y1PZ | Advanced Data Processing in Spreadsheets | KZ | 2 |
| | familiar with principles of working in a spreadsheet. Graphic layout of the table appearance, formatting of numbers, insertion of formul | | 1 |
| | etection. Working with large spreadsheets, filters, advanced filters, database functions. Pivot tables and charts, conditional formatting, so | | _ |
| | data analysis. Examples and questions from various companies and training. | | |
| 14Y1TI | Creating Interactive Internet Applications | KZ | 2 |
| Possibilities of scrip | ting 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 | KZ | 2 |
| | ntroduced to the principles of creating and editing large documents and basic typographic rules. They will properly apply styles, creat | | |
| figures, tables, grap | hs, etc. Footnotes, captions, index. They practice corrections of finished documents. The goal is to prepare students for seamless edi | ting dissertations | s and theses, |
| | so that they are able to concentrate mainly on writing a thesis. | | 1 |
| 4 4 \ / 4 \ / \ / \ | | レフ | 1 2 |
| 14Y1VM Object oriented p | Development of Applications for Mobile Devices programming, Java programming language, development environment, operating system Android, development application - widgets, | KZ containers, threa | 2 ads, menu, |
| Object oriented p | programming, Java programming language, development environment, operating system Android, development application - widgets, permissions, services, GUI. | containers, threa | ads, menu, |
| Object oriented p | programming, Java programming language, development environment, operating system Android, development application - widgets, permissions, services, GUI. Webdesign 1 | containers, threa | ads, menu, |
| Object oriented p | programming, Java programming language, development environment, operating system Android, development application - widgets, permissions, services, GUI. Webdesign 1 The basics of communication HTTP, URL and addressing, markup languages HTML and XHTML, HTML tags, rules of web accessibility | KZ and usability, CS | ads, menu, 2 SS properties |
| Object oriented p | rogramming, Java programming language, development environment, operating system Android, development application - widgets, permissions, services, GUI. Webdesign 1 he basics of communication HTTP, URL and addressing, markup languages HTML and XHTML, HTML tags, rules of web accessibility the issue of web browsers, creating one to three column layout pages, sites validation, conditional comments. Topics will be practiced | KZ and usability, CS | 2 SS properties amples. |
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| 15Y1BO | | | _ |
|--|--|--|--|
| | Work Safety and Health Protection in Transportation definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation. He health insurance of home and foreign business trips, statistics, working practice. | KZ ealth protection p | 2 rogrammes |
| 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 Repurvelopment in the 2nd half of 20th century, high-speed railway origins, railway lines closing, important long-distance train connections." | | |
| 45)/4511 | railway accidents, railway junctions. Excursions and projections. | 1/7 | |
| 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. Lit | - | - |
| goals. Europe after Hitti | er's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and it | s consequences | tor Europe |
| 45)/4ED | New quality of French-German relationship - a driving power of starting European integration. | 1/7 | |
| 15Y1FD | French Area Studies and Transportation | KZ | 2 |
| | d regions, transport infrastructure. Paris and its sights, city public transport. Road traffic, motorways, railway traffic, TGV, air traff | • | rminology |
| | ciety and culture. Current political system. System of education, studying in France. Selected authors of French literature. French | | |
| 15Y1HD | History of City Mass Transport | KZ | 2 |
| | sport in the world, development of tram, bus and trolley-bus systems. History of transport networks in the world, current trends a ystems. History of city transport in Prague and Brno. History of tram, bus and trolley-bus operation systems in the Czech Repub | • | s or tariir a |
| | · · · · · · · · · · · · · · · · · · · | | 2 |
| 15Y1HE | Work Hygiene and Ergonomics in Traffic | KZ | 1 |
| - | cupational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of these f of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technology to po | | |
| reation and protection | Practical examples from the field of transportation; relevant legislature. | issibilities ariu ski | ilis Ui a ilii |
| 15Y1HL | | KZ | 2 |
| - | History of Civil Aviation | | _ |
| | erophient of aircrafts lighter than all. beginnings of aircrafts heavier than all. Czechoslovak aviation pioneers, bevelophient of aircrafts in Czechoslovakia between the years 1945-1989. Classic era of | | |
| vvorid airports. r airiods | aviation. Modern era of civil aviation. Airline companies. Supersonic flying. | aviation. Golden | eia di civ |
| 1 E V 1 N 1 / | | V7 | 1 2 |
| 15Y1MK | Modern History in Context: Every Day Life and Transport | KZ | 2 |
| 457/41/15 | Historical overview of modern history of every day life, science, technology and transport in a wider context. | 1/7 | |
| 15Y1NE | German in the Economy and Society | KZ | 2 |
| ecent economic and s | ocial issues of German speaking countries and of the EU. Reading and listening of texts. Lexical, grammatical and semantic and | alysis of texts. Dis | scussion |
| >> | selected topics. | | |
| 15Y1ZV | East-West dichotomy: Prelude to the Cold War | KZ | 2 |
| | tion of the "West" and "East" from the 1500s. Focus on the history in the period between 1850 nad 1950. Milestones and continuit | - | |
| n the end of 19th centu | ry and the beginning of the 20th century. Revolutions, the causes and consequences. Scientific and technological progress, the | causes and cons | sequence |
| | Economic and financial history. Social changes. Discussions on texts, sources. | | |
| | | | |
| 16LLA1 | Aircraft 1 | KZ | 3 |
| - | nceptual design types - definitions and basic knowledge of the problem. Development of requirements, aircraft definitions and ca | tegorisation. Airc | |
| rcraft structural and cor | nceptual design types - definitions and basic knowledge of the problem. Development of requirements, aircraft definitions and ca Systems of primary and secondary airframe structure. Airframe and propulsion unit. Lectures are devoted to aeroplane topic | tegorisation. Airc s. | raft loadin |
| rcraft structural and col | nceptual design types - definitions and basic knowledge of the problem. Development of requirements, aircraft definitions and ca Systems of primary and secondary airframe structure. Airframe and propulsion unit. Lectures are devoted to aeroplane topic Aircraft 2 | tegorisation. Airc s. Z,ZK | raft loadin |
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| anufacturers responsib st 16UDOP ehicles and transportat 16X31L 16X32L 16X33L 16Y1EN Dynamics and the drivir 16Y1IS Simulation theory and Simulation 16Y1KS Quality and reliability the Mode and Effects Analy 16Y1PV lethods of vehicle production 16Y1RE ementary concepts of reand hybrid drive contri | systems of primary and secondary airframe structure. Airframe and propulsion unit. Lectures are devoted to aeroplane topic Aircraft 2 Aircraft 2 Illity, responsibilities of operator and professional supervising. Legislation in area of airworthiness. International and national stan ructures. Aeroelasticity. Inherent and operational reliability of aircraft structure. Fatigue strength. Aircraft structure lifetime presur Introduction into Vehicles Interport LED Project 1 LED Project 2 LED Project 2 LED Project 3 LED Energy Requirements of Vehicles Interactive simulations and others. Ways of energy change into kinetic energy, drive, steam engine, air engine. Energy accumulation means, accumulation, flywheel, fuel cell. Energy recuperation. WTW analy Interactive simulators and simulations application of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical moder of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and intera Quality and Reliability of Vehicles eory in design, development, production and operation of vehicles. Definition and possible approach to quality and reliability. Kesis), QFD (Quality Function Deployment), DFx (Design for Assamly, Manufacturying, Quality, Services) and other methods us Knowledge-based systems of quality and reliability, data collection. Operation, Construction and Maintenance of Vehicles uction. Vehicle maintenance. Vehicle diagnostics. Maintenence and repair plans. Engine maintenance and emission measureme General principles of engine diagnostics. Control and Electronic Vehicle Systems egulation. Tools for analytical solution, linear system description. Basic types | tegorisation. Aircis. Z,ZK dards. Static solid inption. Z transport. Altern Z Z Z KZ Combustion engysis. KZ dels. Computing ctive simulators. KZ ey legislation. FMI sed in industrial at KZ int. Transmission KZ httages, function. Casafety, communicity. KZ | raft loadin 2 dity of airce 2 ative mea 2 2 2 2 2 ine, elect 2 methods. 2 EA (Failun application 2 Conventice action and |
| anufacturers responsib st 16UDOP ehicles and transportat 16X31L 16X32L 16X33L 16Y1EN Dynamics and the drivir 16Y1IS Simulation theory and Simulation 16Y1KS Quality and reliability the Mode and Effects Analy 16Y1PV lethods of vehicle production to innovation 16Y1SO Introduction to innovation | systems of primary and secondary airframe structure. Airframe and propulsion unit. Lectures are devoted to aeroplane topic Aircraft 2 Aircraft 2 Ility, responsibilities of operator and professional supervising. Legislation in area of airworthiness. International and national stan ructures. Aeroelasticity. Inherent and operational reliability of aircraft structure. Fatigue strength. Aircraft structure lifetime presur Introduction into Vehicles Interpoper 1 LED Project 1 LED Project 2 LED Project 3 LED Energy Requirements of Vehicles Interactive simulators and simulations Interactive simulators and simulations application of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical moder vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and intera Quality and Reliability of Vehicles eory in design, development, production and operation of vehicles. Definition and possible approach to quality and reliability. Kesis), QFD (Quality Function Deployment), DFx (Design for Assamly, Manufacturying, Quality, Services) and other methods us Knowledge-based systems of quality and reliability, data collection. Operation, Construction and Maintenance of Vehicles action. Vehicle maintenance. Vehicle diagnostics. Maintenence and repair plans. Engine maintenance and emission measureme General principles of engine diagnostics. Control and Electronic Vehicle Systems egulation. Tools for analytical solution, linear system description. Basic types of a regulator (PID), properties, advantages, disadva ol. Electric drive. Vehicle communication bus (CAN, LIN, FlexRay, ISObus, | tegorisation. Aircis. Z,ZK dards. Static solid imption. Z transport. Altern Z Z Z KZ Combustion engysis. KZ dels. Computing ctive simulators. KZ ey legislation. FMI sed in industrial at KZ int. Transmission KZ txz kz kz txz txz txz txz txz txz txz txz txz tx | raft loadir 2 dity of airco 2 ative mea 2 2 2 2 2 2 ine, elect 2 methods 2 EA (Failur application 2 Conventic cation and |
| anufacturers responsib 16UDOP ehicles and transportat 16X31L 16X32L 16X33L 16Y1EN Dynamics and the drivir 16Y1IS Guality and reliability the Mode and Effects Analy 16Y1PV lethods of vehicle production to innovatic introduction to innovatic | systems of primary and secondary airframe structure. Airframe and propulsion unit. Lectures are devoted to aeroplane topic Aircraft 2 Ility, responsibilities of operator and professional supervising. Legislation in area of airworthiness. International and national stan ructures. Aeroelasticity. Inherent and operational reliability of aircraft structure. Fatigue strength. Aircraft structure lifetime presur Introduction into Vehicles Ion systems. Functionality and setup. Movement and drive principles. Engines and their characteristics. Rail, road, air and water of transport. Lifting equipment and conveyors. Legislation. Project 1 LED Project 3 LED Project 3 LED Energy Requirements of Vehicles g inertial of the vehicles. Types of energy - kinetic, static, heat, chemical and others. Ways of energy recuperation. WTW analy Interactive simulators and simulations application of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical moof vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and intera Quality and Reliability of Vehicles eory in design, development, production and operation of vehicles. Definition and possible approach to quality and reliability. Ke sis), QFD (Quality Function Deployment), DFx (Design for Assamly, Manufacturying, Quality, Services) and other methods us Knowledge-based systems of quality and reliability, data collection. Operation, Construction and Maintenance of Vehicles cuction. Vehicle maintenance. Vehicle diagnostics. Maintenence and repair plans. Engine maintenance and emission measureme General principles of engine diagnostics. Control and Electronic Vehicle Systems egulation. Tools for analytical solution, linear system description. Basic types of a regulator (PID), properties, advantages, disadvand. Electric drive. Vehicle communication bus (CAN, LIN, FlexRay, ISObus, KWP2000 protocole etc.). Vehicle electronic control, comfort systems. Strategy and | tegorisation. Aircis. Z,ZK dards. Static solid imption. Z transport. Altern Z Z Z KZ Combustion engysis. KZ dels. Computing ctive simulators. KZ ey legislation. FMI sed in industrial at KZ int. Transmission KZ txz kz kz txz txz txz txz txz txz txz txz txz tx | raft loadin 2 dity of airc 2 ative mea 2 2 2 2 2 ine, electr 2 methods. 2 EA (Failur application 2 Convention action and |
| anufacturers responsib 16UDOP ehicles and transportat 16X31L 16X32L 16X33L 16Y1EN Dynamics and the drivir 16Y1IS Guality and reliability the Mode and Effects Analy 16Y1PV lethods of vehicle production to innovatic introduction to innovatic | neceptual design types - definitions and basic knowledge of the problem. Development of requirements, aircraft definitions and can Systems of primary and secondary airframe structure. Airframe and propulsion unit. Lectures are devoted to aeroplane topic Aircraft 2 lity, responsibilities of operator and professional supervising. Legislation in area of airworthiness. International and national stan uctures. Aeroelasticity. Inherent and operational reliability of aircraft structure. Fatigue strength. Aircraft structure lifetime presur Introduction into Vehicles on systems. Functionality and setup. Movement and drive principles. Engines and their characteristics. Rail, road, air and water of transport. Lifting equipment and conveyors. Legislation. Project 1 LED Project 2 LED Project 3 LED Energy Requirements of Vehicles g 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 analy Interactive simulators and simulations application of computing equipment. Creating computing models. Mechanical and dynamic systems and their mathematical modern of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive decided by a resulting of vehicle dynamics, on-land carriage in particular. Virtual reality systems. Practical exercise with simulation software and interactive decided by a resulting of vehicle dynamics, on-land carriage in particular virtual reality systems. Practical exercise with simulation software and interactive disagn, development, production and operation of vehicles. Definition and possible approach to quality and reliability. Kesis), QFD (Quality Function Deployment), DFx (Design for Assamly, Manufacturying, Quality, Services) and other methods us Knowledge-based systems of quality and reliability, data collection. Operation, Const | tegorisation. Aircis. Z,ZK dards. Static solid imption. Z transport. Altern Z Z Z KZ Combustion engysis. KZ dels. Computing ctive simulators. KZ ey legislation. FMI sed in industrial at KZ int. Transmission KZ txz kz kz txz txz txz txz txz txz txz txz txz tx | raft loadin 2 dity of airce 2 ative mea 2 2 2 2 2 2 ine, elect 2 EA (Failun application 2 Conventice action and |

| 16Y1ZG | Introduction into Applied Computer Graphics | KZ | 2 |
|---|---|--|--|
| | , 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 basic | s. Introduction to 2 | D and 3D |
| | graphics software. | | _ |
| 16Y1ZL | Vehicle Testing, Legislation and Construction | KZ | 2 |
| | torbike costruction, aggregate computing, driving resistance, build and parameters of traction, constructional arrangement of personal of | | motorbikes, |
| | slation in the EU and in the world, technical legislation creation, testing methods, vehicle tests, accelerated tests, mathematical mode | | _ |
| 17TEDL | Transport Technology and Logistics | KZ | 3 |
| | sport technology and logistics, particular steps of transport planning, line planning, timetabling, planning in pasanger and freight trar odus, technologic factors of the side of operator and client, organisation of city transport, logistic technologies and their aplication us | - | |
| 17X31L | Project 1 LED | Z | 2 |
| 17X31L 17X32L | • | Z | 2 |
| | Project 2 LED | | |
| 17X33L | Project 3 LED | Z | 2 |
| 17Y1LL | Logistics of Passenger and Freight Air Transport | KZ . | 2 |
| Logistics airline pas | senger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial tran | sport process pass | sengers and |
| 47V4MD | air cargo. Information systems in air transport. Global distribution systems. | KZ | 2 |
| 17Y1MD | Marketing in Transportation of marketing applied to transport issues, marketing tools suitable for transport as a service, specifics of public passenger transport a | I | ! |
| General principles | the application of marketing. | ind the resulting di | ilerences in |
| 17Y1OF | Personal Finance | KZ | 2 |
| | budget, financing of basic living needs), debt (loans and credits, payment instruments, interest and fees, debt trap), financing of house | I | l I |
| | inancing), savings and investments (investment horizon, return, risk, investment strategy), insurance (insurance types, suitability and | | - |
| | (retirement savings and insurance). | ,,,, | 5 |
| 17Y1PM | Personnel Management | KZ | 2 |
| Human sourd | es, work group, man as personality, planning, choice, evaluation and education of human sources, work adaptation, teamwork, inter | cultural communic | ation. |
| 17Y1SK | Urban and Regional Rail Transport Systems | KZ | 2 |
| Factors affecting | transport demand, modal-split, distribution of passenger flows on public regional transport lines. Optimization of line management, li | ne networking. Cre | ating and |
| evaluation of the | timetable. Vehicle circulation creation. Optimizing driver shifts and arranging them in turnus. Effects of barrier-free and public transp | ort preferences. Th | ne role of |
| | marketing. | | |
| 17Y1SL | Sociology of Human Resources | KZ | 2 |
| Human resources a | nd their importance, work group as a special kind of social group, communication, personal management, modern management, hum | an resources plan | ning, culture |
| | of the organization. | | |
| 17Y1ST | Titan Simulation | KZ | 2 |
| _ | ement game simulating the business decisions. Lets 2-8 student groups to produce and compete in the market with the same produ | | |
| determine the quar | tity and capacity of production, plan budgets for marketing, research and development. They become familiar with the consequence: | s of their decisions | by the form |
| 10MTV | of financial corporate reports and they use this information for other business decisions. | 7 71/ | 3 |
| 18MTY | Materials Science and Engineering erials science and engineering explains mechanical properties of structural materials based on their bonding forces and microstructu | Z,ZK | _ |
| | the most important engineering materials, also other major classes of materials are presented, namely ceramics, polymers and cor | | |
| lo paid to motalo de | to degradation processes in materials, to defectoscopy and to main mechanical tests. | iipoolloo: / ttoritiori | io dioo paid |
| 18PZP | Elasticity and Strength | Z,ZK | 3 |
| | ession. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted, bolted a | | |
| | Analysis of deflection curve of beams. Torsion of circular cross sections. Combined loading. Stability. | ŕ | |
| 18SAT | Structural Analysis | Z,ZK | 4 |
| General system of | f forces in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determinat | | le girders. |
| Principle of virtual w | ork. Kinematic method for calculation of reactions of statically determinate systems. Determination of axial forces in truss constructions. | Cross-sectional ch | aracteristics |
| | of planar shapes. Fiber polygons and chains. | | |
| 18SPP | Seminary from Elasticity and Strength | Z | 0 |
| Excersise for pract | ice. Tension and compression. Bending of beam. Shear stress during bending of beam. Design and analysis of cross section of bear | n. Analysis of defle | ction curve |
| | of beam. Torsion of circle cross section. Combined loading. Stability of compressed bar and buckling. | | |
| 1000 | | | |
| 18SS | Seminary from Structural Analysis | Z | 0 |
| Examples for practi | Seminary from Structural Analysis se. General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and | simple framework | . Application |
| Examples for practi | Seminary from Structural Analysis se. General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and al works for calculation of reactions of staticaly determinate systems. Determination of axial forces in truss construction - method of | simple framework | . Application |
| Examples for practi of principle of virtu | Seminary from Structural Analysis se. General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and all works for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of Geometry of cross sections. Plane fiber polygons. | simple framework | Application of sections. |
| Examples for praction of principle of virtues 18STD | Seminary from Structural Analysis se. General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and all works for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of Geometry of cross sections. Plane fiber polygons. Seminary from Technical Documentation | simple framework joints and method | Application of sections. |
| Examples for praction of principle of virtues 18STD | Seminary from Structural Analysis se. General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and all works for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of Geometry of cross sections. Plane fiber polygons. Seminary from Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional | simple framework joints and method | Application of sections. |
| Examples for praction of principle of virtues 18STD Technical standa | Seminary from Structural Analysis se. General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and all works for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of Geometry of cross sections. Plane fiber polygons. Seminary from Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional arrangement of drawing sheets. | simple framework joints and method Z al and geometrical | Application of sections. 0 accuracy, |
| Examples for praction of principle of virtues 18STD Technical standa | Seminary from Structural Analysis se. General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and all works for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of Geometry of cross sections. Plane fiber polygons. Seminary from Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional arrangement of drawing sheets. Technical Drawing and Designing | simple framework joints and method Z al and geometrical | Application of sections. 0 accuracy, |
| Examples for praction of principle of virtue 18STD Technical standa 18TKK 18X31L | Seminary from Structural Analysis se. General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and all works for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of Geometry of cross sections. Plane fiber polygons. Seminary from Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional arrangement of drawing sheets. Technical Drawing and Designing Project 1 LED | simple framework joints and method Z al and geometrical KZ Z | Application of sections. 0 accuracy, |
| Examples for praction of principle of virtue 18STD Technical standa 18TKK 18X31L 18X32L | Seminary from Structural Analysis se. General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and all works for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of Geometry of cross sections. Plane fiber polygons. Seminary from Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional arrangement of drawing sheets. Technical Drawing and Designing Project 1 LED Project 2 LED | simple framework joints and method Z all and geometrical KZ Z Z | Application of sections. 0 accuracy, 4 2 2 |
| Examples for praction of principle of virtue 18STD Technical standa 18TKK 18X31L 18X32L 18X33L | Seminary from Structural Analysis see. General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and all works for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of Geometry of cross sections. Plane fiber polygons. Seminary from Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional arrangement of drawing sheets. Technical Drawing and Designing Project 1 LED Project 2 LED Project 3 LED | simple framework joints and method and geometrical KZ Z Z Z Z | Application of sections. 0 accuracy, 4 2 2 2 2 |
| Examples for praction of principle of virtue 18STD Technical standa 18TKK 18X31L 18X32L 18X33L 18Y1AM | Seminary from Structural Analysis se. General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and all works for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of Geometry of cross sections. Plane fiber polygons. Seminary from Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional arrangement of drawing sheets. Technical Drawing and Designing Project 1 LED Project 2 LED Project 3 LED Anatomy, Mobility and Safety of Man | simple framework joints and method and geometrical KZ Z Z Z KZ KZ | Application of sections. 0 accuracy, 4 2 2 2 2 2 2 |
| Examples for praction of principle of virtue. 18STD Technical standa. 18TKK 18X31L 18X32L 18X33L 18Y1AM Survey of tissues. A | Seminary from Structural Analysis se. General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and all works for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of Geometry of cross sections. Plane fiber polygons. Seminary from Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional arrangement of drawing sheets. Technical Drawing and Designing Project 1 LED Project 2 LED Project 3 LED Anatomy, Mobility and Safety of Man Inatomical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circulation | z al and geometrical KZ Z Z Z KZ and nervous syste | Application of sections. 0 accuracy, 4 2 2 2 2 2 2 2 2 m. Structure |
| Examples for praction of principle of virtue. 18STD Technical standa. 18TKK 18X31L 18X32L 18X33L 18Y1AM Survey of tissues. A | Seminary from Structural Analysis se. General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and all works for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of Geometry of cross sections. Plane fiber polygons. Seminary from Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional arrangement of drawing sheets. Technical Drawing and Designing Project 1 LED Project 2 LED Project 3 LED Anatomy, Mobility and Safety of Man Inatomical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circulation of muscular-skeletal system. Injury of human organs and musculo-skeletal system during traffic accidents. Mobility of ill and injured results. | z al and geometrical KZ Z Z Z KZ and nervous syste | Application of sections. 0 accuracy, 4 2 2 2 2 2 2 2 2 m. Structure |
| Examples for praction of principle of virtue 18STD Technical standa 18TKK 18X31L 18X32L 18X33L 18Y1AM Survey of tissues. A and biomechanics | Seminary from Structural Analysis se. General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and all works for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of Geometry of cross sections. Plane fiber polygons. Seminary from Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional arrangement of drawing sheets. Technical Drawing and Designing Project 1 LED Project 2 LED Project 2 LED Anatomy, Mobility and Safety of Man Inatomical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circulation of muscular-skeletal system. Injury of human organs and musculo-skeletal system during traffic accidents. Mobility of ill and injured report piont prostheses. Protective means and traffic safety regulations. | simple framework joints and method and geometrical kZ Z Z Z KZ and nervous systeman and his treatmetrical simple framework in the systeman and his treatmetrical simple framework in the systeman and sy | Application of sections. 0 accuracy, 4 2 2 2 2 2 2 2 2 2 2 2 2 2 Structure ent. Human |
| Examples for praction of principle of virtue 18STD Technical standa 18TKK 18X31L 18X32L 18X1AM Survey of tissues. A and biomechanics 18Y1EM | Seminary from Structural Analysis se. General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and all works for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of Geometry of cross sections. Plane fiber polygons. Seminary from Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional arrangement of drawing sheets. Technical Drawing and Designing Project 1 LED Project 2 LED Project 2 LED Project 3 LED Anatomy, Mobility and Safety of Man Inatomical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circulation of muscular-skeletal system. Injury of human organs and musculo-skeletal system during traffic accidents. Mobility of ill and injured report joint prostheses. Protective means and traffic safety regulations. Experimental Methods in Mechanics | simple framework joints and method and geometrical kZ Z Z Z KZ and nervous systeman and his treatm | Application of sections. 0 accuracy, 4 2 2 2 2 2 2 m. Structure ent. Human |
| Examples for praction of principle of virtue. 18STD Technical standa. 18TKK 18X31L 18X32L 18X33L 18Y1AM Survey of tissues. A and biomechanics. 18Y1EM The purpose and residue of principle of the purpose and residue. | Seminary from Structural Analysis se. General system of forces. Reactions of mass objects and compound systems. Internal forces on statically determinate beam and all works for calculation of reactions of statically determinate systems. Determination of axial forces in truss construction - method of Geometry of cross sections. Plane fiber polygons. Seminary from Technical Documentation rds, international standardization, technical drawings, representation of technical objects, technical diagrams and charts, dimensional arrangement of drawing sheets. Technical Drawing and Designing Project 1 LED Project 2 LED Project 2 LED Anatomy, Mobility and Safety of Man Inatomical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circulation of muscular-skeletal system. Injury of human organs and musculo-skeletal system during traffic accidents. Mobility of ill and injured report piont prostheses. Protective means and traffic safety regulations. | simple framework joints and method Z Z Z Z XZ AID XZ AID XZ XZ AID XZ AID XID | Application of sections. 0 accuracy, 4 2 2 2 2 2 2 2 2 m. Structure ent. Human 2 s. Design of |

| 18Y1MT | Engineering Materials | KZ | 2 |
|--|--|--|--|
| Systematic overvie | w of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers and | | 1 |
| • | ogical materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's | | • |
| 18Y1PS | Computer Simulations in Mechanics | KZ | 2 |
| rinciples and over | view of tools for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model developme | nt and adaptation | of geometr |
| om other CAE sys | tems. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary conditions and | d application of th | e load. Bas |
| | tasks of structural and modal analysis. Introduction to complex nonlinear problems. | | |
| 18Y1UK | Introduction of Rail Vehicles | KZ | 2 |
| | cs and parameters rail transport systems - railway and urban transport. Basis driving mechanics rail vehicles - equation of motion tra | | • |
| ack resistance. Tot | al running resistance. Acceleration force. Analyzing driving cycle rail vehicle. Speed-power diagrams and characteristics rail vehicle - | hydromechanic, h | ydrodynam |
| | and electric drive. Design concept rail vehicles and drive of wheel set. | | |
| 20SYSA | Systems Analysis | Z,ZK | 5 |
| = | em sciences, system viewpoint, terminology, typical system analysis tasks, system identification, system interface and interface tasks, | - | |
| and its analysis, s | trong functions and processes, genetic code, system identity, system architecture. Tools for system analysis - Petri nets, decision tak tasks. Soft and hard systems, methods for soft system analysis. | nes, aigoritims ic | n Structurar |
| 20UITS | Introduction to Intelligent Transport Systems | Z,ZK | 7 |
| | pislative framework telematics systems and their architecture. Telematics systems in practice and their operation. Fundamentals of infor | | 1 |
| | nciples and technical support measurement of traffic data, localization and navigation. Practical work with traffic data. Real examples | | |
| , 2.2 | principles of ITS. | | |
| 20X31L | Project 1 LED | Z | 2 |
| 20X32L | Project 2 LED | Z | 2 |
| 20X32L | Project 3 LED | Z | 2 |
| 20X33L 20Y1AE | Applied Electronics | KZ | 2 |
| - | Applied Electronics emiconductor components, their principles, characteristics and typical connection diagrams. Semiconductor PN junction diodes, tran | | _ |
| | gic gates. Functions of basic electronic circuits and methods for their designs (rectifiers, voltage regulator with Zener diode, transisto | | • |
| ampiliors, basic io | amplifier as an inverting and noninverting amplifier). | n as an ampilior, | ороганопа |
| 20Y1AF | Alternative Forms of Transportation Project Financing | KZ | 2 |
| - | uch forms of financing in transportation and telecomunications, where the public sector body perform the final debtor, i. e. debt paym | | _ |
| | ot a direct participant of the transaction and it is not the counterparty of the financial institute which provides the funding. Issue of sections of the section and it is not the counterparty of the financial institute which provides the funding. Issue of sections of the section and it is not the counterparty of the financial institute which provides the funding. | | _ |
| | of transportation and telecomunication projects. | | |
| 20Y1EA | Environmental Aspects of Transport | KZ | 2 |
| I I | here, weather observation network, weather in transportation, road meteorology. Weather forecasting, data assimilation, probabilistic | forecasts, forecas | st evaluatio |
| Air quality, main | pollutants and their effects, atmospheric chemistry, traffic emissions. Greenhouse gasses, carbon cycle, a role of energy and transp | ortation in climate | e change. |
| 20Y1EK | Qualification in Electrical Engineering | KZ | 2 |
| ractical experience | e with measurements in laboratories, electrical equipment, power supply, electrical installation of low voltage, electric shock hazard, | symbols and labe | ling, nomina |
| · · · · · · · · · · · · · · · · · · · | allowed currents, electrical equipment protection against short circuit and overload protection, control and revision, first aid, legislation | = | _ |
| . | | | |
| | in relation to health and safety and electrical engineering. | | . rogalation |
| 20Y1KP | | KZ | 2 |
| - | in relation to health and safety and electrical engineering. Communication and presentation skills s and their fulfillment, current communication networks, work with various sources, formal requirements of emails and final theses, b | KZ | 2 |
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| Motivation, priorities teamwork, emotion 20Y1LN Description and example 20Y1OI | Communication and presentation skills s and their fulfillment, current communication networks, work with various sources, formal requirements of emails and final theses, b ional intelligence, manipulation and way of working with it, coping with stressful situations, formal requirements of presentations, way presentation, presentation skills, presentation skills in online environment. Location and Navigation xamples of road networks, localization on the network. Routing algorithms, their properties and implementation. Description and exa transport connections, routing algorithms, their properties and implementation. Fare Collection and Information Systems | KZ asic typology of p s of communicati KZ mples of datasets | 2 personalities ion during 2 s for finding 2 |
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| 21LGL2 | Aviation English 2 Terminology in the sphere of aircraft construction, principles of flight, aircraft engines, instruments and systems. | KZ | 2 |
|-----------------------|--|-----------------------|----------------|
| 21LGVP | Legislation and Operational Regulations | ZK | 4 |
| Introduction into a | viation regulations. The scope of international and national organizations in civil aviation. Analysis and interpretation of the ICAO Ann | exes 1-19, ICAO [| |
| 7030, 8168 | . Introduction to the European Parliament and Council Regulation (EC), Commission Regulation (EU) and the Decisions of the Execu | itive Director of EA | ASA. |
| 21LMR1 | Aircraft Engines 1 | ZK | 3 |
| Aircraft piston eng | ine, theoretical background, operational characteristics and construction schemes. Propellers, operational characterictics. Turbine en | gine, theoretical b | ackground, |
| thermal cycles, co | onstruction schemes, operational characteristics. Turbojet and turbofan engines, basic construction modules, and their operational ch | aracteristics. Engi | ne control. |
| 21LVYO | Human Performance and Limitations | ZK | 3 |
| Human performac | e & limitations, aptibility & competence, accident statistics, flight safety, basics of flight physiology, man & environment | , breathing & | circulation, |
| sensory system, h | ealth & hygiene, health preservation, intoxication, incapacitation, basics of flight psychology, human information processing, me | mory & learn | ing, theory |
| | & amp; model of human error, body rhythms & amp; sleep, stress, fatigue, working methods. | | |
| 21MEOL | Meteorology | KZ | 3 |
| Structure of atmo | sphere. Vertical stratification. Pressures QNH, QFE, QFF, QME. Instability. Atmospherical fronts. Atmospherical rainfall, origin fission. | Turbulence. Powe | rs causing |
| wind. Cyclone and | anticyclone. Gradient wind. Geostrofical and geocyklostrofical wind. Visibilities in air transport. Dangerous meteorological aspects. Met | eorological maps. | Climatology. |
| | Circulation. Intertropical front. Meteorological informations. | | |
| 21PAP | Flight Planning and Performance | Z,ZK | 4 |
| Mass and balance. | Load of aircraft. Determination of centre of gravity - loadsheet, trimsheet. Aircraft weighing. Overloading of aircraft. Basic characteristic s | oeeds. Runway cha | aracteristics. |
| Take off and landing | g performance. Drift down. ETOPS. MEL. Flight planning and monitoring. Routing. FL and speeds selection. Charts. ICAO ATC FPL. A | erodrom operation | n minimums. |
| | Fuel plan. Operational flight plan. | | |
| 21RELP | Air Traffic Control | Z,ZK | 4 |
| 21RIBZ | Aviation Safety | KZ | 2 |
| | s topics related to the safety management and structure of the SMS. This includes a description of the SMS mechanisms and tools, used | | _ |
| | ring the course, students are continuously working on the semestral assignment, which helps them to understand practical application | | e operations. |
| | | | 4 |
| 21SBL1 | Bachelor Thesis Seminar 1 | Z | 1 |
| , , | iew, applied research, basic research, thesis dealing with design proposals). Working with citation sources (citation sources, citation of the citation sources). | | styles, how |
| | e). Analyzing the state of the art (standards of research writing). Defining the limitations of the state of the art. Introduction to the thes | | 1 . |
| 21SBL2 | Bachelor Thesis Seminar 2 | Z | 1 |
| | esis writing (introduction, analysis of the current state, specification of the problem, objectives and hypotheses). Definition of materia | | pproach to |
| | taining results, presentation and discussion of results, formulation of thesis conclusions. Basics of LaTeX, working with LaTeX and W | ord template. | |
| 21SBL3 | Bachelor Thesis Seminar 3 | Z | 1 |
| Formal and grap | hic design of the thesis. Data collection and presentation, basic statistical reasoning, validation of results and designs. Achieving the | objectives of the the | hesis and |
| | evaluation of hypothesis tests. Preparation of the presentation, principles of presentation of the thesis. | | |
| 21SLD | Seminar of Air Transport | Z | 0 |
| History, definition | ons, terminology, basic rules. VFR / IFR. Basics of aerodynamics. Propulsion of aircraft. Aircraft design. Basics of navigation, radio na | vigation. Weight, b | balance, |
| performance. Flig | ht planning, optimization of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic ma | nagement, ground | d handling, |
| | security. Air crew. Airlines and economics. Space technologies. | | |
| 21SYLP | Airport Security | KZ | 2 |
| | n security and unlawful acts against the civil aviation. Description of threats, risks, causes and goals of Security. Overview of nationa | l and international | regulations |
| and their rele | evance to airport security. Security control devices. Operational efficiency factors and related variables. Basic use of queueing theory | and optimization t | asks. |
| 21X31L | Project 1 LED | Z | 2 |
| 21X32L | Project 2 LED | Z | 2 |
| | · | <u>Z</u> | |
| 21X33L | Project 3 LED | | 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. Al | RAC System. NOTAM messages.PIB (Pre-flight Informtion Bulletin). AIC (Aeoronautical Inf. Circulars). Aeronautical Charts. EAD (Eu | ropena AIS Datab | ase). QMS |
| | (Quality Mng. System). ADQ (Aeronautical Data Quality). AIXM (Aeronautical Inf. Exchnage Format). | | 1 |
| 21Y1BS | Unmanned aircraft systems 1 | KZ | 2 |
| Unmanned Aviation | n Development. Aircraft design. Legislation in force in the Czech Republic. Planning and execution of the flight. Airspace division. Ope | erational risks and | operational |
| | procedures. Practical flights. | | |
| 21Y1LJ | Aeronautical Radio and Flight Instruments | KZ | 2 |
| Basic definitions, hi | story of aircraft instrumentation, aerometric instrumentation, Earth magnetism, aircraft electric equipment, gyroscopic instrumentation | , airframe instrume | entation and |
| other aircra | ft equipment, engine instrumentation, warning and recording systems, instrumentation operational requirements, radiocommunicatio | n and radionaviga | tion. |
| 21Y1LS | Air Traffic Services | KZ | 2 |
| Airspace structure | n Czech Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, APP | a ACC control. His | story of ATS |
| | at USA and Czechoslovakia. ATS - Model of financing. Training System of Air Traffic Controllers. Future development of ATS | S. | |
| 21Y1MP | Matlab for project-oriented study | KZ | 2 |
| The subject's sylla | ous is focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exercises | will be prepared a | according to |
| particular examp | les, based on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improveme | nt of students' Ma | tlab skills. |
| 21Y1OH | Airline Business and Operations | KZ | 2 |
| | s a comprehensive view of the commercial, operational and transportation activities of air transport companies. It focuses on the organiz | | I |
| = | heir strategy, economic and operational indicators. It introduces students in detail to operational processes and the essentials of transp | | - |
| | a basic view of the economic aspects of air transport. | , ,,,,,,, | |
| 21Y1PC | ATC Procedures and Activities | KZ | 2 |
| | procedures, basics of communication and phraseology, aircraft identification, spacing and traffic coordination. In addition, the course of | | 1 |
| - | ts and low visibility operational procedures. Students will during the course learn basic safety management applications applied acro | | |
| 21Y1RZ | Human Resources Management | KZ | 2 |
| | ן numan resources in the organization and related disciplines file. Substance, importance and challenges of human resources manage | | I |
| · · | numan resources in the organization and related disciplines file. Substance, importance and challenges of numan resources manage han resource management. Human resource planning. Search, recruitment and selection of employees. Motivation, evaluation and ren | | |
| SHANDING HE OF HALL | dismissal and redundancies of employees. Education of employees. Planning career management | iurioralion di Sidil. | . oomoning, |

| 21Y1SI | ATC Simulator | KZ | 2 |
|-----------------------|---|------------------------|------------------|
| Familiarization v | rith the simulation environment, acquiring basic habits, aircraft identification procedures, vectoring, level changes, ATC clearance, us | e of RNAV points | . Practical |
| exercises focusin | g on basic vectoring, early application of vertical separation, EST and REV message passing. Practical exercises in the APPROACH | l area, practicing | arrival and |
| | departure management procedures, conflict resolution. | | |
| 21Y1UL | Aircraft Maintenance | KZ | 2 |
| Aircraft operations | and technical operations. Maintenance and work processes. Defects search methods, status check diagnostic tools. Selection and qua | lification of aviation | n personnel. |
| Basic documentati | on for maintenance. Optimization of time maintenance intervals. Regulation no. 1321/2014 Part 145. Human factors of aircraft mainte | nance. Regulation | n of director |
| | EASA for aircraft maintenance. Seminars will be focused on practical application. | | |
| 21ZALD | Basics of Air Transport | KZ | 2 |
| History, definitions, | terminology, basic rules. VFR/IFR. Basics of aerodynamics. Propulsion of aircraft. Aircraft design. Basics of navigation, radio navigation. | Weight, balance, | performance. |
| Flight planning, opt | imization of speed and heights, minimum fuel. Limitations of operation, maintenance, service life of aircraft. Traffic management, grou | nd handling, secu | ırity. Air crew. |
| | Airlines and economics. Space technologies. | | |
| 21ZT | ATM Systems | ZK | 2 |
| The course intro | oduces classical and modern facilities, systems and technologies designated for ATS. Student obtains knowledge of technical princip | les and solutions | as far as |
| | communication, navigation and surveillance aviation systems are concerned. | | |
| 21ZYT1 | Principles of Flight 1 | Z,ZK | 3 |
| Aerodynamic drag, | relation between drag and speed, streamline, boundary layer, formula of continuity, formula of Bernoulli, lift and drag, air flow and processing the stream of the stream | essures around v | ing, angle of |
| attack, reactions of | wing in air flow, lift and drag of a wing and an aircraft, coefficient of lift and drag, critical angle of attack, wing with final span, induced | drag, interferenc | e, devices for |
| | lift and drag increase. | | |
| 21ZYT2 | Principles of Flight 2 | Z,ZK | 3 |
| Static & amp; dyna | mic longitudinal stability, neutral point, location of centre of gravity, static directional & lateral stability, dynamic directional & | ; lateral stability, | ontrol pitch |
| (longitudinal), yav | v (directional) & amp; roll (lateral), roll/yaw interaction, trimming, speed of sound, Mach number, compressibility, shock waves, critical | Mach number, a | erodynamic |
| | heating, operating limitations, manoeuvring envelope, gust-load diagram. | | |
| 22SELN | Air Accident Investigation | ZK | 2 |
| Introduction and leg | islation (ICAO, EU, Czechia) related to air accident investigation. Obligations arising from legislative requirements for individual States | in the event of ar | air accident, |
| investigation proce | ess. Air accident site (inspector's equipment, site security, personal protection, initial activities at the site, sketch, evidence, etc.). Airc | raft and crew doc | umentation. |
| | Final report (formalities, substantive content, contribution). | | |
| 22X31L | Project 1 LED | Z | 2 |
| | Project 2 LED | 7 | |
| 22X32L | | _ | 2 |
| 22X32L 22X33L | Project 3 LED | Z | 2 2 |
| | , | | |
| 22X33L | Project 3 LED | Z | 2 |
| 22X33L TV-1 | Project 3 LED Physical Education | Z Z | 2 |

For updated information see http://bilakniha.cvut.cz/en/FF.html Generated: day 2025-11-05, time 20:28.