

Study plan

Name of study plan: Architektura a stavitelství

Faculty/Institute/Others:

Department:

Branch of study guaranteed by the department: Welcome page

Garantor of the study branch:

Program of study: Architecture and Building Engineering

Type of study: Bachelor full-time

Required credits: 240

Elective courses credits: 0

Sum of credits in the plan: 240

Note on the plan: tento studijní plán platí od nástupu 2015 do nástupu 2018 v etn

Name of the block: Compulsory courses

Minimal number of credits of the block: 188

The role of the block: Z

Code of the group: BA20150100

Name of the group: Architektura a stavitelství, 1. semestr

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

Requirement courses in the group: In this group you have to complete at least 6 courses

Credits in the group: 28

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 |
|---------|---|------------|---------|-------|----------|------|
| 101M1A | Mathematics 1A Ivana Pultarová, Jan Lama, Jan Chleboun, Zdeněk Skalák, Milan Božík, Monika Rencová, Ondřej Zindulka, Martin Hála, Yuliya Namlyeyeva, Zdeněk Skalák Zdeněk Skalák (Gar.) | Z,ZK | 6 | 2P+2C | Z,L | z |
| 123SHMA | Building Materials Alena Vimmrová, Miloš Jerman, Eva Vejmelková Alena Vimmrová Alena Vimmrová (Gar.) | Z,ZK | 3 | 2P+1C | Z | z |
| 124PSA1 | Buildings 1 Petr Hájek, Jan Růžka, Magdaléna Novotná, Veronika Kaňková Petr Hájek Petr Hájek (Gar.) | Z,ZK | 5 | 2P+2C | Z | z |
| 129AAKO | Architectural composition studio Nikola Puchelová, Klára Škodová, Petr Aster, Kamila Housová Mizerová, Richard Bartík, Libor Fránek, Helena Hexnerová, Hana Božíková, Jolana Hrochová, Zuzana Pešková Jaroslav Daňha (Gar.) | KZ | 4 | 3C | Z | z |
| 129GPA | Graphic Presentation of Architecture Nikola Puchelová, Petr Aster, Kamila Housová Mizerová, Vojtěch Dvořák, Jan Kašpar, Zuzana Pešková, Eva Antoňová, Lucie Formanová, Lukáš Kolibár, Zuzana Pešková Zuzana Pešková (Gar.) | KZ | 5 | 5C | Z | z |
| 129UNA | Introduction to professional practise Václav Dvořák, Jaroslav Daňha, Petr Lédl, Luboš Knytl, Michal Šourek, Petr Šíkola Petr Šíkola Luboš Knytl (Gar.) | ZK | 5 | 4P | Z | z |

Characteristics of the courses of this group of Study Plan: Code=BA20150100 Name=Architektura a stavitelství, 1. semestr

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|---------|--|------|---|
| 101M1A | Mathematics 1A https://mat.fsv.cvut.cz/bubenik/mat1detail.htm | Z,ZK | 6 |
| 123SHMA | Building Materials Building materials - basic course. Classification of the materials. Structure of materials. Main properties of materials. Application of materials in building constructions. Introduction to material testing. | Z,ZK | 3 |
| 124PSA1 | Buildings 1 The concept of design of building structures with a comprehensive consideration of the functional requirements imposed on individual elements. Requirements for building structures, structural system, interaction of elements, spatial effect of the structural system. Vertical load-bearing structures (functions, requirements, principles of the structural design of walls, columns), floor structures (functions, requirements, principles of the structural design of vaults, wooden ceilings, reinforced concrete ceilings, ceramic concrete ceilings, steel and steel concrete ceilings). Expansion joints in load-bearing systems. Structural systems of single and multi-storey buildings, structural systems of long-span structures. | Z,ZK | 5 |
| 129AAKO | Architectural composition studio Students learn to apply knowledge acquired in the subject Introduction to Architecture Design to simple abstract tasks. Principles of Form and Space Composition. Idea and form of abstract surface and spatial composition. The physical model as a form of verification of compositional intentions. | KZ | 4 |

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|--|---------------------------------------|----|---|
| 129GPA | Graphic Presentation of Architecture | KZ | 5 |
| The GPA course is divided into 2 parallel parts that complement each other. One part is dedicated to pictorial representation and is endowed with 3 hours per week. The second part is dedicated to mastering the basic tools for computer imaging and is subsidized by 2 hours. The focus of the first semester in the drawing part concerns the basics of architectural drawing and the method of representation - drawing objects in orthogonal, isometric and perspective form. Students will also learn to draw the staggered figure, drawing greenery and basic geometric solids. As a final presentation of each section (drawing, computer) students will produce a final poster consisting of a simple object set in an architectural space, including floor plans, views and sections. The poster also includes variant solutions of the architecture. | | | |
| 129UNA | Introduction to professional practise | ZK | 5 |
| The lectures are divided into two tracks. The first is devoted to architectural composition, the basics of understanding the use of compositional principles in architectural design and understanding their effects. It also deals with other key means of architecture, such as structure, color, and material. All the attributes illuminated are presented in their basic, pure form and are further demonstrated on existing buildings of historical, but especially contemporary architecture. The second section is devoted to the problems of the basic principles of space creation in terms of layout requirements, ergonomics, quality of space creation. It is an introduction to the later more specialized subjects of building science. All the principles are presented with examples of mainly contemporary architectural design. | | | |

Code of the group: BA20150200

Name of the group: Architektura a stavitelství, 2. semestr

Requirement credits in the group: In this group you have to gain at least 27 credits

Requirement courses in the group: In this group you have to complete at least 6 courses

Credits in the group: 27

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) <i>Tutors, authors and guarantors (gar.)</i> | Completion | Credits | Scope | Semester | Role |
|---------|---|------------|---------|-------|----------|------|
| 101KGA1 | Constructive Geometry A <i>Iva Slámová, Iva Malechová, Hana Lakomá, Iva Kivková, Petra Vacková</i> Hana Lakomá Iva Malechová (Gar.) | Z,ZK | 5 | 2P+2C | L,Z | z |
| 101M2A | Mathematics 2A <i>Ivana Pultarová, Jan Lama, Zdeněk Skalák, Milan Božík, Monika Rencová, Yuliya Namyeyeva, Miloslav Vlasák, Jana Šápová, Iva Slámová, Petr Kučera</i> Petr Kučera Petr Kučera (Gar.) | Z,ZK | 4 | 2P+2C | L,Z | z |
| 124PSA2 | Buildings 2 <i>Magdaléna Novotná, Zuzana Ráková, Veronika Kamaříková, Jiří Pazderka</i> Jiří Pazderka Jiří Pazderka (Gar.) | Z,ZK | 5 | 2P+2C | L | z |
| 129AKR | Architectural drawing <i>Kamila Housová Mizerová, Jan Kašpar, Zuzana Pešková, Eva Antoňová, Radek Macke, Ivo Chvojka, Ctibor Havelka, Vratislav Ševčík, Dalibor Smutný, Zuzana Pešková</i> Zuzana Pešková Zuzana Pešková (Gar.) | KZ | 4 | 3C | L | z |
| 129ATZ1 | Introductory design studio 1 <i>Petr Aster, Richard Bartík, Helena Hexnerová, Hana Božíková, Jolana Hrochová, Vojtěch Dvořák, Jan Kašpar, Václav Dvořák, Petra Novotná, Jana Hoická</i> Jana Hoická Jana Hoická (Gar.) | KZ | 4 | 4C | L | z |
| 132SMA1 | Structural Mechanics 1A <i>Aleš Jíra, Kristian D'Amico, Tomáš Janda, Karel Pohl, Tomáš Plachý</i> Aleš Jíra Aleš Jíra (Gar.) | Z,ZK | 5 | 2P+2C | L,Z | z |

Characteristics of the courses of this group of Study Plan: Code=BA20150200 Name=Architektura a stavitelství, 2. semestr

| | | | |
|---|------------------------------|------|---|
| 101KGA1 | Constructive Geometry A | Z,ZK | 5 |
| Projections and projective methods. Axonometry. Oblique projection. Orthogonal axonometry. Displaying prisms, cones, cylinders, pyramids, balls. Simple problems in axonometry. Basics of lighting of solids and groups of solids. Perspective projection. Photogrammetry. Curves, parametrisation. Helical surfaces. Quadrics. Hyperbolic paraboloid, conoids and cylindroids. Next surfaces in building industry. | | | |
| 101M2A | Mathematics 2A | Z,ZK | 4 |
| https://mat.fsv.cvut.cz/vyuka/bakalari/eng/ls/MT02/ | | | |
| 124PSA2 | Buildings 2 | Z,ZK | 5 |
| Staircases, sloping ramps, lift shafts - requirements, structural and material solutions, basics of typology, design principles, construction details, railing. Building foundations - foundation conditions, types of foundations, requirements, building plinth area (construction details). Basement - solution of basement walls, requirements, protection against water, waterproofing systems. Structural expansion joints in buildings - principles of joints design in bearing structures, thermal expansion, compensation of differences in settlement, construction details. Roof truss systems. | | | |
| 129AKR | Architectural drawing | KZ | 4 |
| In architectural drawing courses, students learn to correctly perceive and "see" shapes and masses in their proportional relationships, spatial context, scale and visual perspective. Models are first assemblies of geometric solids, then supplemented with draperies and other objects. The listener learns to lay out and optimally place the drawing in the format and to use view, horizon and runs to build the final composition. Ongoing instruction aids in pencil progression while profiling personal handwriting. The goal is to develop spatial vision and gain skills in drawing and sketching, which is indispensable as a means of communication in architectural design. Consistent attention is paid to aspects of shape and mass in space, the expression of light and shadow, plasticity, structure and differentiation of materials. | | | |
| 129ATZ1 | Introductory design studio 1 | KZ | 4 |
| The Studio is the student's first experience of designing a specific building on a specific site. This course follows architectural composition course, which focuses on architectural design as an abstract composition of smaller parts in relation to a larger whole. The core of the course is the architectural design process applied to the design of a simple building. The main goal of the course in general is the mastery of architectural design techniques along with the further development of creativity initiated in architectural composition. The specific aim of the work is to design a small building - an operationally simple object in the context of specified conditions. | | | |
| 132SMA1 | Structural Mechanics 1A | Z,ZK | 5 |
| Concurrent forces, force systems acting on rigid bodies in space/plane, moment of a force about a point and line. Supports of a rigid body, reaction forces. Compound two-dimensional structures. Trusses. Internal forces diagrams of simple statically determinate plane structures and compound two-dimensional structures. Multiaxially loaded cantilever. Definition of normal stress and prepositions of its distribution in a cross section. Equivalence of internal forces. Geometry of mass and areas, centre of gravity and moments of inertia. | | | |

Code of the group: BA20150300

Name of the group: Architektura a stavitelství, 3. semestr

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

Requirement courses in the group: In this group you have to complete at least 6 courses

Credits in the group: 28

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) <i>Tutors, authors and guarantors (gar.)</i> | Completion | Credits | Scope | Semester | Role |
|---------|---|------------|---------|-------|----------|------|
| 101M3A | Mathematics 3A <i>Ivana Pultarová, Jan Lama, Zdeněk Skalák, Milan Božík, Monika Rencová, Ondřej Zindulka, Martin Hála, Miloš Vlasák, Iva Malechová, Jozef Bobok, Jozef Bobok (Gar.)</i> | Z,ZK | 4 | 1P+2C | Z | z |
| 124SFA | Building Physics 1A <i>Jaroslav Vychytil, Zbyněk Svoboda, Lenka Maierová, Pavel Kopecký, Jaroslav Vychytil, Jaroslav Vychytil (Gar.)</i> | Z,ZK | 7 | 4P+3C | Z | z |
| 125TBA1 | Building Services Systems 1 <i>Karel Kabele, Stanislav Frolík, Karel Kabele, Karel Kabele (Gar.)</i> | Z,ZK | 4 | 2P+2C | Z | z |
| 129ATZ2 | Introductory design studio 2 <i>Richard Bartík, Libor Fránek, Michal Blažek, Jana Hoická, Vojtěch Dvořák, Jan Kašpar, Petra Novotná, Jiří Trojan, Štěpán Lajda, Jana Hoická, Jana Hoická (Gar.)</i> | KZ | 6 | 4C | Z | z |
| 129NB01 | Architectural typology 1 <i>Jana Hoická, Petra Novotná, Petr Lédl, Luboš Knytl, Luboš Knytl, Luboš Knytl (Gar.)</i> | Z,ZK | 3 | 1P+2C | Z | z |
| 132PRA | Strength of Materials A <i>Tomáš Janda, Tomáš Plachý, Vít Šmilauer, Eva Novotná, Zdeněk Prošek, Vít Šmilauer, Vít Šmilauer (Gar.)</i> | Z,ZK | 4 | 1P+2C | Z,L | z |

Characteristics of the courses of this group of Study Plan: Code=BA20150300 Name=Architektura a stavitelství, 3. semestr

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|---------|--|------|---|
| 101M3A | Mathematics 3A https://mat.fsv.cvut.cz/vyuka/bakalari/ls/M3A/ | Z,ZK | 4 |
| 124SFA | Building Physics 1A Heat transfer, Fourier laws, thermal resistance, thermal transmittance, mean thermal transmittance, energy performance of buildings, energy need for heating, energy use, primary energy, diffusion and condensation of water vapor, internal surface temperature, risk of mould growth, thermal bridges and joints. Solar radiation and its importance. Determining the position of the Sun in the sky using numerical and graphical methods. Insolation. Meaning of terms, requirements. Daylighting. Criteria and limits. Lighting systems. The principle of determining the daylight factor by calculation and measurement. Parts of the daylight factor. Qualitative aspect of daylighting (uniformity, direction of light incidence, etc.). Concepts of sound and noise. Criteria and limits. Acoustic quantities, symbols and calculation. Sound propagation outdoors and indoors. Sound attenuation due to aperture. Direct and diffuse sound field. Reverberation time and reverberation radius. Sound absorbing structures. Structural acoustics. Sound insulation. Sound reduction index. Impact noise. Indirect transmission. | Z,ZK | 7 |
| 125TBA1 | Building Services Systems 1 Basic course in building services systems - water supply, drainage, gas supply and heating systems. | Z,ZK | 4 |
| 129ATZ2 | Introductory design studio 2 The studio follows previous course of Introductory design studio 1. The main focus of the course is to extend the application of the architectural design process to include typological and ergonomic issues. The main aim of the general teaching is, along with the further development of creativity, the mastery of architectural design procedures, the acquisition of work habits and the layout of design work applied to small-scale assignments. The specific aim of the work is the design of a small building, typologically specified, with a housing element. | KZ | 6 |
| 129NB01 | Architectural typology 1 The topics are focused on the basic typology of buildings for housing, accommodation and public catering. | Z,ZK | 3 |
| 132PRA | Strength of Materials A The subject deals with basic elastoplastic analysis of cross-sections and structures. Uniaxial stress - effect of temperature, statically indeterminate cases, truss deformation, stress distribution. Bending of a beam - simple and combined bending, combination with axial force, tension, core of the cross-section. Ideally elastoplastic material model for uniaxial tension, plastic limit state of cross-sections and structures. Beam stability, perfect and imperfect beam. Plane stress - stress transformation, principal stress, Mohr's circle, principal stress. Shear stress - bending shear. Torsion of circular, massive, thin-walled cross-sections. | Z,ZK | 4 |

Code of the group: BA20150400

Name of the group: Architektura a stavitelství, 4. semestr

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

Requirement courses in the group: In this group you have to complete at least 6 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) <i>Tutors, authors and guarantors (gar.)</i> | Completion | Credits | Scope | Semester | Role |
|---------|--|------------|---------|-------|----------|------|
| 124PSA3 | Buildings A3 <i>Lenka Hanzalová, Vladimír Žára, Vladimír Žára, Vladimír Žára (Gar.)</i> | Z,ZK | 6 | 3P+2C | L | z |
| 125TB2 | Building Services Systems 2 <i>Daniel Adamovský, Bohumír Garlík, Daniel Adamovský, Daniel Adamovský (Gar.)</i> | Z,ZK | 4 | 2P+2C | L | z |

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|---------|---|------|---|-------|-----|---|
| 129AT01 | Design studio 1 <i>Richard Bartík, Libor Fránek, Helena Hexnerová, Jolana Hrochová, Jan Kašpar, B la Men lová, Ladislav Tichý, Petra Novotná, Pavel Filsak, Petr Lédl Petr Lédl (Gar.)</i> | KZ | 6 | 6C | Z | z |
| 129NB02 | Architectural typology 2 <i>B la Men lová, Pavel Filsak, Petr Lédl, Luboš Knytl, Ladislav Kalivoda, Eva Kosíková, Radek Zykan, Miloš Kop iva, Jind ich Svatoš, Ladislav Kalivoda Luboš Knytl (Gar.)</i> | Z,ZK | 5 | 2P+2C | L | z |
| 132SMA2 | Structural Mechanics 2A <i>Tomáš Janda, Eva Novotná, Ji í N me ek, Ji í N me ek, Dagmar Jandeková Ji í N me ek Ji í N me ek (Gar.)</i> | Z,ZK | 4 | 1P+2C | Z,L | z |
| 154SGEA | Land Surveying <i>Martin Tauchman, Tomáš K emen, Karel Pavelka, Ji í Cajthaml, Tomáš Janata Tomáš K emen Martin Štroner (Gar.)</i> | Z,ZK | 5 | 2P+2C | L | z |

Characteristics of the courses of this group of Study Plan: Code=BA20150400 Name=Architektura a stavitelství, 4. semestr

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|---|-----------------------------|------|---|
| 124PSA3 | Buildings A3 | Z,ZK | 6 |
| The subject has two parts. In the first part, the subject deals with the comprehensive design of supporting structures of roofing, indoor and multi-storey buildings and the structural-static effect of the perimeter and roof sheathing. The second part of the course deals with the design of packaging and dividing structures. The construction of flat and pitched roofs, the construction of external envelopes, the construction of opening fillings and light external envelopes, and the construction of partitions, views and floors are discussed." | | | |
| 125TB2 | Building Services Systems 2 | Z,ZK | 4 |
| This subject includes an introduction to ventilation and air conditioning in buildings and solutions for electric instalations and artificial lighting. | | | |
| 129AT01 | Design studio 1 | KZ | 6 |
| Studio creation is an application subject in which students apply the knowledge gained from a wide range of architectural disciplines with their own artistic opinion and creativity. The theme of the studio is the design of an apartment building of tangible size, with an emphasis on the idea, the concept of the solution, the relationship of the designed object to the surroundings, the object's own spatial structure, layout solution, structural feasibility. It is essential to find a modern artistic and aesthetic expression in the context of the place and the surrounding buildings. Understanding of basic spatial relationships in the design phase of the project using the elementary tools of architectural creation. | | | |
| 129NB02 | Architectural typology 2 | Z,ZK | 5 |
| The lectures are devoted to the issue of selected types of civil buildings, especially buildings for healthcare, education, and transport. The lectures focus on operational ties, operational circuits within structures, specific requirements from various points of view - from social to, for example, hygienic. They also note the urban context, technological requirements and construction specifics, typical for the respective range of buildings. The exercises follow the lectures. | | | |
| 132SMA2 | Structural Mechanics 2A | Z,ZK | 4 |
| The subject deals with the basic elastic analysis of statically indeterminate structures. The first part introduces the energy of deformation, the principle of virtual forces, deformation on statically determined structures. Maxwell and Betti's theorem. Force method and its application to statically indeterminate lattice structures, continuous beams, frames, closed frames. Symmetrical structures with symmetrical and antisymmetric loading. Effect of temperature effects and prescribed displacements of supports. Structure compliance matrix. The second part of the subject discusses the principle of virtual displacements and the direct stiffness method. Bar stiffness matrix, non-force effects, static condensation, structure stiffness matrix and localization. Computer solutions of basic construction types. The third part of the course deals with the analysis of plates and simplified methods of solving cross-stressed plates. | | | |
| 154SGEA | Land Surveying | Z,ZK | 5 |
| Basic information on the Earth, angle and distance measurement, basics of geodetic calculation (traverse, intersection), determination of heights, basics of setting-out, maps for designing, basics of photogrammetry, basics of error theory and adjustment calculus, determination of areas and volumes, modern geodetic instruments and methods (electronic techeometers, GPS, laser scanners), basic geodetic rules. | | | |

Code of the group: BA20160500

Name of the group: obor Architektura a stavitelství, 5. semestr

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

Requirement courses in the group: In this group you have to complete at least 6 courses

Credits in the group: 24

Note on the group: bez 129AT02

| Code | Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) <i>Tutors, authors and guarantors (gar.)</i> | Completion | Credits | Scope | Semester | Role |
|---------|---|------------|---------|-------|----------|------|
| 124PSA4 | Buildings A4 <i>Zuzana Ráčová, Veronika Ka ma íková, Václav Kupilík, Petr Hejtmánek, Martin Jiránek, Marek Pokorný, Daniela Šejnová Pitelková, Malila Noori Marek Pokorný Václav Kupilík (Gar.)</i> | Z,ZK | 5 | 2P+1C | Z | z |
| 127UB01 | Urban Planing 1 <i>Vojt ch Ko alka, Ivan Kaplan, Václav Jetel Václav Jetel Ivan Kaplan (Gar.)</i> | Z,ZK | 6 | 2P+2C | Z | z |
| 129DA01 | History of Architecture 1 <i>Josef Záruba Pfeffermann Josef Záruba Pfeffermann Josef Záruba Pfeffermann (Gar.)</i> | ZK | 3 | 2P | Z | z |
| 129NB03 | Architectural typology 3 <i>Nikola Puchelová, Petra Novotná, Luboš Knytl, Eva Kosíková, Radek Zykan, Pavla Grünerová, Tomáš Šenberger Jana Ho ická Luboš Knytl (Gar.)</i> | Z | 3 | 1P+2C | Z | z |
| 133BZA1 | Concrete and Masonry Structures in Architecture 1 <i>Hana Hanzlová, Karel Šeps Hana Hanzlová Hana Hanzlová (Gar.)</i> | Z,ZK | 5 | 2P+2C | Z | z |
| 135GEA | Geology <i>Jan Jelínek, Svatoslav Chamra, Jan Schröfel, Richard Malát, Jan Valenta, Kate ina Ková ová Kate ina Ková ová Jan Valenta (Gar.)</i> | Z,ZK | 2 | 1P+1C | Z | z |

Characteristics of the courses of this group of Study Plan: Code=BA20160500 Name=obor Architektura a stavitelství, 5. semestr

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|--|---|------|---|
| 124PSA4 | Buildings A4 | Z,ZK | 5 |
| Healthy Buildings Constituents of indoor microclimate, hazardous substances (VOCs, HFRs, heavy metals, moulds, microbes, aerosols, radionuclides, etc.), their sources and health effects. Influence of building structures and materials on quality of indoor microclimate. Design of buildings with respect to optimisation of indoor microclimate. Fire Safety Analysis of fire - course of fire, burning process, fire loading; legislation and European Standards; fire safety solutions - fire project, requirement for fire resistance of buildings, escape ways, distance separation, fire-fighting equipment; fire behaviour of the most used materials (wood, steel, concrete, plastics); protection of building materials against fire (brickwork, concreting, plasters and sprays, coatings, impregnates of wood, encasements, glued facings of mineral fibres); sandwiches from fire point of view; influence of claddings on the course fire; passive protection of building structures - fire walls, fire glazed structures, fire ceiling, draft stops and seals; repressive measures - electric fire signalling, stationary extinguishing devices, smoke extract, hydrant systems. | | | |
| 127UB01 | Urban Planing 1 | Z,ZK | 6 |
| The course introduces the student to individual functional systems in cities and their zones and prepares him/her for designing parts of settlements from the perspective of urban typology and urban design conditions. In particular, it focuses on the design conditions of residential zones and parcelling, traffic calming and segregation, public and commercial amenities, public green spaces, etc. It supplements the overview and conceptual principles with a number of examples from the Czech Republic and abroad. The exercise is intended to apply the knowledge to the design of an urban residential complex for the first time, first using a model example. | | | |
| 129DA01 | History of Architecture 1 | ZK | 3 |
| Subject DA1 is an introductory series of lectures on the history of architecture. It is intended to provide the student with a basic historical overview of the architecture of antiquity with overlaps into later epochs. It is subsidized by 2 hours per week. The basis of the lectures is to acquaint the student not only with the history of ancient architecture, but also with theoretical works of antiquity and with the morphology of classical orders. | | | |
| 129NB03 | Architectural typology 3 | Z | 3 |
| The lectures are divided into 3 topics - sustainable architecture, buildings for industry and buildings for agriculture and the village. The first part is dedicated to buildings from the point of view of energy efficiency and sustainability, the second part is focused on topics related to agriculture and the specifics of the village, the last part focuses on the typology of industrial buildings, presented in a historical context (pre-industrial and industrial buildings) and with regard to their basic nature of production (single-purpose, multi-purpose and combined buildings). The lectures also cover the topic of industrial heritage, its identification, evaluation and methods of protection. | | | |
| 133BZA1 | Concrete and Masonry Structures in Architecture 1 | Z,ZK | 5 |
| Properties of concrete and reinforcement, interaction of concrete and reinforcement, behavior (static action) of concrete elements, ultimate limit states - bearing capacity of reinforced concrete cross-sections in bending, bearing capacity in shear, reinforcing principles for slabs and beams, elements under N+M, serviceability limit states. Masonry structures. Prestressed concrete. | | | |
| 135GEA | Geology | Z,ZK | 2 |
| The course focuses on the understanding of basic geological laws and principles in relation to architecture, civil engineering and urban planning. Emphasis is placed on explaining the influence of geological processes, both endogenous and exogenous, on the rock environment and how the geological situation affects the design of structures and their interaction with the rock environment. At the same time, attention is paid to the technical properties of rocks with regard to their practical applications. Last but not least, the course includes a brief excursion into the degradation of building and decorative stone and the restoration and reconstruction of constructions made of it. | | | |

Code of the group: BA20160600

Name of the group: obor Architektura a stavitelství, 6. semestr

Requirement credits in the group: In this group you have to gain at least 21 credits

Requirement courses in the group: In this group you have to complete at least 5 courses

Credits in the group: 21

Note on the group: bez 129AT03

| Code | Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) <i>Tutors, authors and guarantors (gar.)</i> | Completion | Credits | Scope | Semester | Role |
|---------|--|------------|---------|-------|----------|------|
| 127UR2B | Urban Planning 2 <i>Václav Jetel, Simona Vondráková, Karin Dvořáková, Jiří Kupka, Tereza Švárová, Zuzana Boušková, Tereza Kubištová Jiří Kupka Jiří Kupka (Gar.)</i> | Z,ZK | 4 | 2P+1C | L | z |
| 129DA02 | History of Architecture 2 <i>Josef Záruba Pfeffermann, Rudolf Pošva Josef Záruba Pfeffermann Josef Záruba Pfeffermann (Gar.)</i> | ZK | 3 | 2P | Z | z |
| 133BZA2 | Concrete and Masonry Structures in Architecture 2 <i>Hana Hanzlová, Karel Šeps Hana Hanzlová Hana Hanzlová (Gar.)</i> | Z,ZK | 5 | 2P+2C | L | z |
| 134ODA1 | Steel and Timber Structures in Architecture 1 <i>Michal Jandera</i> | Z,ZK | 5 | 2P+2C | L | z |
| 135MZA | Soil mechanics and foundation engineering <i>Jan Záleský, Josef Jettmar, Jan Salák Jan Záleský Jan Záleský (Gar.)</i> | Z,ZK | 4 | 2P+2C | L | z |

Characteristics of the courses of this group of Study Plan: Code=BA20160600 Name=obor Architektura a stavitelství, 6. semestr

| | | | |
|---|---|------|---|
| 127UR2B | Urban Planning 2 | Z,ZK | 4 |
| The course covers several basic thematic areas, especially an introduction to urban composition as a creative synthesis of all components of an urban work, expressed in the composition of spaces and materials, an introduction to rural urbanism, including landscape contexts and some contemporary problems of urbanism, and selected current issues of contemporary urbanism. The individual topics are interpreted in the necessary historical context, insofar as it is relevant to the current state of the subject. The exercises, among other things, test the knowledge from the lectures and apply the urban planning knowledge acquired so far (proposal based on the knowledge from Urbanism 1). | | | |
| 129DA02 | History of Architecture 2 | ZK | 3 |
| The course DA2 is the second series of lectures on history of architecture. It is intended to provide the student with a basic historical overview of the architecture of antiquity with overlaps into later eras. It is subsidized for 2 hours a week. The basis of the lectures is to acquaint the student not only with the history of medieval and early modern architecture, but also with the theoretical works of Renaissance architects. | | | |
| 133BZA2 | Concrete and Masonry Structures in Architecture 2 | Z,ZK | 5 |
| Design of concrete elements under stress combinations, bearing capacity of slender pressed elements, bearing capacity in punching and twisting. Analysis of the behavior of reinforced concrete elements and structures. Design process. Static action, choice and application of calculation models and methods, procedures of simplified methods and principles of reinforcement of individual types of structures - ceiling slabs, frames, walls, stairs, wall beams, basement and retaining walls, foundations. Precast structures. | | | |
| 134ODA1 | Steel and Timber Structures in Architecture 1 | Z,ZK | 5 |
| Students learn the steel elements supporting structures, manufacturing, designing of beams, columns, joints, and ocelobetonovými structures, basic fire design and corrosion protection. the multi-storey buildings and halls are introduced. | | | |

| | | | |
|--|---|------|---|
| 135MZA | Soil mechanics and foundation engineering | Z,ZK | 4 |
| Origin and composition of soil, basic properties, classification. Stresses in soil. Permeability, compressibility and strength of soils, Mohr's theory of failure. Principles of laboratory and field testing of soils. Soil pressures on structures, slope stability. Bearing capacity and deformation in flat and deep foundations. Foundation technology, construction pits. Principles of foundation soil improvement. Basic principles of monitoring in geotechnical engineering. | | | |

Code of the group: BA20150700

Name of the group: Architektura a stavitelství, 7. semestr

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

Requirement courses in the group: In this group you have to complete at least 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) <i>Tutors, authors and guarantors (gar.)</i> | Completion | Credits | Scope | Semester | Role |
|---------|--|------------|---------|-------|----------|------|
| 122TS1A | Technology of Construction <i>Pavel Neumann, Tomáš Váchal, Václav Pospíchal, Rostislav Šulc, Michal Kovář ik Rostislav Šulc Václav Pospíchal (Gar.)</i> | Z,ZK | 4 | 2P+1C | Z | z |
| 126MMA2 | Economics and Management <i>Dana M š anová, Václav Tatýrek Václav Tatýrek Václav Tatýrek (Gar.)</i> | Z,ZK | 5 | 2P+2C | L | z |
| 126SPSK | <i>Dana M š anová Dana M š anová Dana M š anová (Gar.)</i> | Z | 2 | 2P | Z | z |
| 129ATV4 | Design studio (Constructional Design) <i>Jan R ži ka, Pavel Filsak, Št pán Lajda, Lenka Maierová, Karel Kabele, Stanislav Frolík, Martin Stark, Ladislav Kalivoda, Ctislav Fiala, Jan R ži ka Jan R ži ka (Gar.)</i> | KZ | 9 | 6C | Z,L | z |
| 129DA03 | History of Architecture 3 <i>Josef Záruba Pfeffermann, Lenka Popelová, Petr Ulrich, Radomíra Sedláková Josef Záruba Pfeffermann Josef Záruba Pfeffermann (Gar.)</i> | ZK | 4 | 2P | Z | z |
| 134ODA2 | Steel and Timber Structures in Architecture 2 <i>Jakub Dolejš Jakub Dolejš Jakub Dolejš (Gar.)</i> | Z,ZK | 4 | 2P+1C | Z | z |
| 136DSA | Road and Rail Construction <i>Michal Uhlík, Michal Weber Michal Uhlík Michal Uhlík (Gar.)</i> | Z | 2 | 1P+1C | Z | z |
| 100ODPR | Industrial Training (3 weeks) <i>Petr Hájek, Jan R ži ka Michal Jandera Michal Jandera (Gar.)</i> | Z | 0 | 6C | Z,L | z |

Characteristics of the courses of this group of Study Plan: Code=BA20150700 Name=Architektura a stavitelství, 7. semestr

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|--|---|------|---|
| 122TS1A | Technology of Construction | Z,ZK | 4 |
| The subject deals with basic technologies and technological procedures, as well as supplier documentation and the realization of building structures | | | |
| 126MMA2 | Economics and Management | Z,ZK | 5 |
| Construction, civil engineering and construction work. Life cycle of building and project. Construction projects and documentation. Participants on construction projects. Determining the cost of construction. Total construction costs. Scheduling and network analysis. Valuation of works and budgeting. Costing and bid price. Production calculation. Calculation methods. Public revenues and tax system. Awarding construction contracts. Public business competition. Contract - clauses additions. Construction business. Organizational structure and management of construction firm. Supply Management. Marketing of construction firm. Making management structures. Controlling. Site manager, foreman, technical supervision, cost and author. Control days. Construction diary. Executed work and supplies quality. Production invoice and final calculation. Changes and additions to the budget. Building handover and acceptance. Investment effectiveness, Construction project evaluation. Marketing. Building changes prior completion, building handover and acceptance, handover documentation. Decision processes. Invested energy. BOM. Audit, Documentation rules. Insolvency, RIPRAN, LEED, BREEAM. Documentation rules, Insolvency law. | | | |
| 126SPSK | | Z | 2 |
| Territorial planning and construction code law. Public procurement law. Definition of terms. Commercial contractual relationships. Main contract types in construction - contract of the conclusion of a future contract, purchase contract, contract for work, Contents of the contract. | | | |
| 129ATV4 | Design studio (Constructional Design) | KZ | 9 |
| The subject of the Design studio 4 is an architectural development of selected studies from ATV 1 (residential buildings), ATV2 (small public building) or ATV3 (large public building), a detailed structural, materials and technology design of the whole building or its part, including structural and architectural details. Preliminary structural analysis and building service systems concept are part of the students' outcomes. Despite of architectural concept special attention is focused on building energy concept, complex building quality including sustainable building and quality of internal microclimate. | | | |
| 129DA03 | History of Architecture 3 | ZK | 4 |
| The subject deals with architecture from classicism to postmodernism. Each development stage is presented in a wider social context with an emphasis on understanding the theoretical basis of the given concepts. Emphasis is placed on understanding the main formal features of individual styles and directions, typological and structural development, the application of which is expected in future architectural practice. The subject also touches on the development of urbanism. | | | |
| 134ODA2 | Steel and Timber Structures in Architecture 2 | Z,ZK | 4 |
| The course introduces students to the static and structural design of timber structures in civil engineering. Material properties, the design rules according to European standards and principles of good structural design are presented within the course. | | | |
| 136DSA | Road and Rail Construction | Z | 2 |
| Introduction to road construction, legislation and regulations, design elements of the route, function of communication depending on its meaning, width layout design - extravillan vs. Intravillage. Urban engineering and the specifics of urban roads, new construction vs. reconstruction, width arrangement of urban roads, parking, public mass transport and its preferences (rail and non-rail), intersections, bus stations. Pedestrian traffic, pedestrian crossings, residential and pedestrian zones, zones 30, adaptations for the blind and disabled, bicycle traffic, earth figure, road objects, drainage, safety equipment on roads. Roadway (and sidewalk) - construction, distribution, application, layer materials, design according to TP 170, implementation. Project documentation - attachments, negative effects of transport. | | | |
| 100ODPR | Industrial Training (3 weeks) | Z | 0 |
| Professional practice is an important part of academic education in undergraduate degree programmes. The student will gain a basic understanding of duties and professional responsibilities. The professional practice evaluates the sum of all knowledge acquired through previous theoretical studies and is a proof of their acquisition. | | | |

Name of the block: Compulsory elective courses

Minimal number of credits of the block: 6

The role of the block: PV

Code of the group: BA20180800_2

Name of the group: Architektura a stavitelství, povinn volitelné p edm ty, 8. semestr

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

Requirement courses in the group: In this group you have to complete at least 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) <i>Tutors, authors and guarantors (gar.)</i> | Completion | Credits | Scope | Semester | Role |
|---------|--|------------|---------|-------|----------|------|
| 105YSAS | Sociology and Psychology <i>Monika Dobiášová Monika Dobiášová Monika Dobiášová (Gar.)</i> | Z | 2 | 1P+1C | | PV |
| 123YSHA | Bulding Materials in Architecture <i>Alena Vimmrová, Martin Böhm, Klára Kobetová, Dana N mcová Alena Vimmrová Alena Vimmrová (Gar.)</i> | Z | 2 | 1P+1C | L | PV |
| 124YDRS | Timber Buildings <i>Jan R ži ka, Jaroslav Vychytil, Marek Pokorný, Kamil Stan k, Milan Peukert, Lukáš Velebil Jan R ži ka Jan R ži ka (Gar.)</i> | Z | 2 | 1P+1C | L | PV |
| 124YKSD | Complex Structural Detail <i>Ji í Pazderka, Radek Zigler Ji í Pazderka Ji í Pazderka (Gar.)</i> | Z | 2 | 1P+1C | Z | PV |
| 125YNST | HVAC and services design <i>Hana Kabrhelová Hana Kabrhelová Hana Kabrhelová (Gar.)</i> | Z | 2 | 1P+1C | Z,L | PV |
| 125YPMT | Building services systems CAD, modelling and simulation <i>Stanislav Frolík Stanislav Frolík (Gar.)</i> | Z | 2 | 2C | Z,L | PV |
| 126YVSF | Small Business Management <i>Jana Frková, Olga Heralová Jana Frková (Gar.)</i> | Z | 2 | 1P+1C | Z,L | PV |
| 127YSUP | Landscape Planning (seminar) <i>Vojt ch Ko alka, Dušana Andrášová, František Brynda František Pospíšil František Pospíšil (Gar.)</i> | Z | 2 | 2C | L | PV |
| 127YUR3 | Urban Planning 3 <i>Václav Jetel, František Pospíšil, Petr Durdík František Pospíšil Petr Durdík (Gar.)</i> | Z | 2 | 2P | L | PV |
| 129YDA4 | History of Architecture 4 <i>Josef Záruba Pfeffermann Josef Záruba Pfeffermann Josef Záruba Pfeffermann (Gar.)</i> | Z | 2 | 2C | L | PV |
| 129YOPA | Heritage preservation <i>Klára Kroftová Klára Kroftová Klára Kroftová (Gar.)</i> | Z | 2 | 2P | L | PV |
| 129YPSA | Psychology of Architecture <i>Lukáš Kolibár, Karel Smejkal, Iva Be ová Karel Smejkal Karel Smejkal (Gar.)</i> | Z | 2 | 1P+1C | L | PV |
| 132YKPA | Statics for Architecture <i>Aleš Jíra</i> | Z | 2 | 1P+1C | Z,L | PV |
| 133YBKC | Concrete and Masonry Structures 1 <i>Petr Bílý, Jakub Holan, Radek Štefan Petr Bílý Petr Bílý (Gar.)</i> | Z | 2 | 2C | Z,L | PV |
| 134YNKS | Glass Structures <i>Martina Eliášová Martina Eliášová Martina Eliášová (Gar.)</i> | Z | 2 | 1P+1C | L | PV |
| 135YKA | Stones in architecture <i>Svatoslav Chamra, Kate ina Ková ová Kate ina Ková ová Kate ina Ková ová (Gar.)</i> | Z | 2 | 1P+1C | L | PV |

Characteristics of the courses of this group of Study Plan: Code=BA20180800_2 Name=Architektura a stavitelství, povinn volitelné p edm ty, 8. semestr

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|--|-----------------------------------|---|---|
| 105YSAS | Sociology and Psychology | Z | 2 |
| The subject is conceived as a synthesis of selected chapters from psychology and sociology. He deals with the psychology of work and organization, managerial psychology, social psychology and the use of psychology in corporate communication. In the part of sociology, attention is focused on the sociology of the city and the region, the sociology of housing and selected themes from sociology of the company. | | | |
| 123YSHA | Bulding Materials in Architecture | Z | 2 |
| Deeper knowledge of building materials from the point of view of their architectural properties. New structural materials, composite materials, smart materials. Materials for exterior and interior surfaces. Choice of suitable material. Laboratory tests of some material properties - durability, frost resistance, water absorption, hardness. | | | |
| 124YDRS | Timber Buildings | Z | 2 |
| The aim is to present a complex overview on energy efficient timber structures. Basic theoretical and design principals are presented. The lectures are focused on following technologies of timber structures: (i) heavy timber skeleton systems, (ii) light timber structures based on 2x4. (iii) CLT, (iv) log house. All technologies of timber structures are presented in structural and building physics context of low energy and passive buildings. | | | |
| 124YKSD | Complex Structural Detail | Z | 2 |
| The aim of the course is to extend the knowledge gained in previous courses - it is intended for students who have already reached advanced level of knowledge about structural problems in buildings. The content of the course is focused on the complex solution of construction details, following all legislative requirements and taking into account the maximum efficiency and durability of the chosen solution. | | | |

| | | | |
|---|---|---|---|
| 125YNST | HVAC and services design | Z | 2 |
| Basic principles of the designing of sanitary systems, heating and ventilation. Design of the heat source, heat emitters, potable water demand, amount of ventilation air, design of air-handling unit and design of indoor systems. | | | |
| 125YPMT | Building services systems CAD, modelling and simulation | Z | 2 |
| Introductory course in computer aided modelling and design of building services systems. | | | |
| 126YVSF | Small Business Management | Z | 2 |
| The subject is divided into lectures 1 hour per week and exercises 1 hour per week. Lectures take place according to the course outline listed below. In the exercise, students prepare their own business plan for a selected business activity according to the specified syllabus. They draw up a plan for a start-up business. Entrepreneurship can take the form of both: a self-employed person and a legal entity, e.g. Ltd. The financial plan is prepared in Excel, and the credit condition is the presentation of the business plan in power point in front of the auditorium. | | | |
| 127YSUP | Landscape Planning (seminar) | Z | 2 |
| The course gives a comprehensive idea of procedures in land-use planning on specific examples, where students individually process the individual phases of the land-use planning process from the analysis of the territory to a simple design and its transcription into the regulation of the territory. Successful completion of the course will replace the independent compulsory seminar work of the subject YUR3. | | | |
| 127YUR3 | Urban Planning 3 | Z | 2 |
| Topic subject of the learning is genesis of town development and town planning in the world, in the bohemian territory and in the capital town of Prague. Other topics are concerned present construction law in Czech Republic in the sphere of town planning. There is a view of types of town planning documents and demarcation of competences in the processes of plan procurement. | | | |
| 129YDA4 | History of Architecture 4 | Z | 2 |
| Field exercises focused on visits to buildings under reconstruction, or buildings where various types of interventions in historical buildings can be monitored. especially in the capital city of Prague. The course tries to focus on recent buildings and reconstructions that were not covered in the overview of the history of architecture. | | | |
| 129YOPA | Heritage preservation | Z | 2 |
| The heritage fund of the Czech Republic is very extensive, extremely valuable and very diverse. The abundance of cultural monuments evokes the need for quality monument care, without which it is impossible to preserve this heritage for future generations. | | | |
| 129YPSA | Psychology of Architecture | Z | 2 |
| Applied psychology of architecture is the part of psychology knowledge that architects should become familiar with within their profession in order to better orient themselves in the context of the impact of their work on human society and to properly position themselves in the process of creating an artificial environment. | | | |
| 132YKPA | Statics for Architecture | Z | 2 |
| 133YBKC | Concrete and Masonry Structures 1 | Z | 2 |
| Introduction to selected computer programs for structural modeling. Fundamentals of the finite element method. Basic types of elements for modeling of structures. Principles for choosing a suitable model. Practical procedures for the design and assessment of reinforced concrete structures using software tools. Principles and methods of interpretation and verification of results. Practical examples. | | | |
| 134YNKS | Glass Structures | Z | 2 |
| The course is intending to introduce the students the field of structural applications of glass and to give them some specific skills for calculation and detailing of for basic glass structures: panes beams and fins, columns and walls, point-supported glass, as well as for glazing systems such as glass facades, canopies and roofs, stairs and floors. On this purpose the properties of glass as structural material will be presented in comparison with other basic building materials, together with selected examples of glass/glazing applications. Design details and connecting technology, relevant technical regulations, specification and current methods applied in design will be described. Worked examples will accompany the lectures for better understanding, and design project will help to fix specific knowledge. | | | |
| 135YKA | Stones in architecture | Z | 2 |
| The course "Stone in Architecture" is an excursion into the use of natural stone as a building and decorative material, not only from the perspective of the present but also from the past. Emphasis is placed on the familiarity with the main properties of rocks that affect their usability in practice, what influences these properties both in the formation itself and over time in construction. Attention is paid to the methods of quarrying stone, the possibilities and methods of its working, the specifics of the use of stone in the exterior and interior. At the same time, attention is paid to the problems of durability and restoration and reconstruction of stone objects. Last but not least, students are introduced to the basic technical standards related to the issue. The course includes two excursions to the building and decorative stone of Prague, if possible also to a demonstration of the reconstruction or restoration of a historical building. | | | |

Name of the block: Povinná t lesná výchova, sportovní kurzy

Minimal number of credits of the block: 0

The role of the block: PT

Code of the group: BTV_POV

Name of the group: Povinná t lesná výchova

Requirement credits in the group:

Requirement courses in the group: In this group you have to complete at least 2 courses

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 |
|------|--|------------|---------|-------|----------|------|
| TV1 | Physical Education | Z | 0 | 0+2 | Z | PT |
| TV2 | Physical Education | Z | 0 | 0+2 | L | PT |

Characteristics of the courses of this group of Study Plan: Code=BTV_POV Name=Povinná t lesná výchova

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|-----|--------------------|---|---|
| TV1 | Physical Education | Z | 0 |
| TV2 | Physical Education | Z | 0 |

Name of the block: Elective courses

Minimal number of credits of the block: 0

The role of the block: V

Code of the group: BA20150300_V

Name of the group: volitelné p edm ty pro program Architektura a stavitelství

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) <i>Tutors, authors and guarantors (gar.)</i> | Completion | Credits | Scope | Semester | Role |
|---------|--|------------|---------|-------|----------|------|
| 129XA3K | Architectural Drawing 1 <i>Kamila Houšová Mizerová, Ctibor Havelka, Vratislav Ševík Zuzana Pešková Vratislav Ševík (Gar.)</i> | KZ | 1 | 3C | | V |
| 129XA4K | Plein Air Drawing (1 week) <i>Kamila Houšová Mizerová, Jan Kašpar, Zuzana Pešková, Vratislav Ševík Zuzana Pešková Zuzana Pešková (Gar.)</i> | Z | 1 | 2C | L | V |

Characteristics of the courses of this group of Study Plan: Code=BA20150300_V Name=volitelné p edm ty pro program Architektura a stavitelství

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|--|----------------------------|----|---|
| 129XA3K | Architectural Drawing 1 | KZ | 1 |
| The recommended XA3K drawings are exercises for those already advanced in drawing. For students, more challenging image composing is included that goes beyond the real-world imaging. Work on the larger format- A2 and pen drawing techniques assume experience already gained from previous required exercises. Drawing machines and vehicles in the collections of the National Museum of Agriculture in Prague and the National Technical Museum has become a traditional drawing training for students. The composition is about blending and combining the overall shape of the machine with details exaggerated in scale that are characteristic of its function in practical use. The aim is to practice spatial vision and the ability to design the actual arrangement of the composition of an object and its masses in a given space. On this basis, the quality of the drawing expression is further assessed. | | | |
| 129XA4K | Plein Air Drawing (1 week) | Z | 1 |
| Drawing en plein air. The opportunity for full concentration and intensive work is made possible by a number of days of continuous drawing practice. It brings an increase in the level of drawing as well as the opportunity to try other art techniques: watercolour, pastel, red, charcoal, etc. The aim of the plein air is to practise drawing and the use of painting techniques from sketch, compositional sketch to more demanding studies. Emphasis is placed on depicting space through seen perspective, capturing proportional relationships and scale. On this basis, the artistic quality of the drawing or painting is further appreciated. | | | |

Name of the block: Compulsory elective courses

Minimal number of credits of the block: 3

The role of the block: S

Code of the group: BA20150100_1

Name of the group: Architektura a stavitelství, povinn volitelný p edm t, 1. semestr

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

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

Credits in the group: 2

Note on the group:

| Code | Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) <i>Tutors, authors and guarantors (gar.)</i> | Completion | Credits | Scope | Semester | Role |
|---------|--|------------|---------|-------|----------|------|
| 101YPZO | Computer Modelling of Objects <i>Iva Malechová, Hana Lakomá Hana Lakomá Hana Lakomá (Gar.)</i> | Z | 2 | 2C | Z | s |
| 105YPDF | Digital Photography <i>Markéta Štindlová Markéta Štindlová Michal Chalupa (Gar.)</i> | Z | 2 | 2C | Z | s |
| 105YPRA | Law (general) <i>Pavla Vo íšková Pavla Vo íšková Pavla Vo íšková (Gar.)</i> | Z | 2 | 2P | Z | s |
| 105YRET | Rhetoric <i>Jitka Círklová Jitka Círklová Jitka Círklová (Gar.)</i> | Z | 2 | 2C | Z,L | s |
| 124YZSK | Plotting of Building Structures <i>Michal Ženíšek Michal Ženíšek Michal Ženíšek (Gar.)</i> | Z | 2 | 2C | Z,L | s |

Characteristics of the courses of this group of Study Plan: Code=BA20150100_1 Name=Architektura a stavitelství, povinn volitelný p edm t, 1. semestr

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|--|-------------------------------|---|---|
| 101YPZO | Computer Modelling of Objects | Z | 2 |
| Modeling of specified objects and own designs in 3D and visualization of obtained models. The tools used are the surface 3D NURBS modeler Rhinoceros and the parametric modeling module Grasshopper. | | | |

| | | | |
|---|---------------------------------|---|---|
| 105YPDF | Digital Photography | Z | 2 |
| In the introduction, the basic technical principles of creating and preserving the electronic image will be explained as a basis for understanding the entire system. Further lessons will be devoted to the construction and control of photographic equipment and general and specific imaging techniques for various photodocumentation areas. We also pay special attention to digital image processing, basic optimization and advanced editing techniques. The basic software tools will be. Adobe Photoshop and Camera RAW. After mastering the techniques of building a photographic image, the course will lead learners to understand the specific speech of photography. We will clarify the principles of photographic image, compositional patterns and the possibilities of art solutions and effects. The subject follows the path from simple mechanical recording to author's expression. It will lead the listener to master all the means of photography and composing procedures to achieve perfect picture information as well as emotional exposure to the viewer. The form of the course is quite practical, seminar, atelier. Some tasks will be solved by the teacher together with the teacher, the other separately, with the procedures and results being consulted and discussed in the group. The tutorial will cover the entire photographic process from scanning, through editing to printing. The output will be a small set of each listener with an exhibition potential. The seminar program will not avoid any genre, but emphasis will be placed on the photo of architecture. | | | |
| 105YPRA | Law (general) | Z | 2 |
| 105YRET | Rhetoric | Z | 2 |
| The participants of this course shall gain and improve skills that are needed for successful professional communication in practice. The study helps to develop culture and effectiveness of verbal communication in written and oral form and of nonverbal communication. It assists in overcoming eventual psychological barriers during public performance, so that the speaker can build up a favorable personal image in the audience. These skills can be employed even outside the professional field. The course instructs also on preparation of written material and visual aids. The ?Rhetoric? course covers the foundations of the field and serves as an overview course. | | | |
| 124YZSK | Plotting of Building Structures | Z | 2 |
| The subject is focused on drawing construction drawings and the basics of AutoCAD. | | | |

Code of the group: BA20150200_1

Name of the group: Architektura a staviteľství, po íta ová grafika, 2. semestr

Requirement credits in the group: In this group you have to gain 1 credit

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

Credits in the group: 1

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) <i>Tutors, authors and guarantors (gar.)</i> | Completion | Credits | Scope | Semester | Role |
|---------|--|------------|---------|-------|----------|------|
| 129YAR1 | ArchiCad 1 ? Elementary | Z | 1 | 2C | L | s |
| 129YAR2 | ArchiCad 2 ? Advanced | Z | 1 | 2C | L | s |
| 129YCIN | Cinema | Z | 1 | 2C | L | s |
| 129YREV | Revit | Z | 1 | 2C | L | s |
| 129Y3D | 3D max | Z | 1 | 2C | L | s |

Characteristics of the courses of this group of Study Plan: Code=BA20150200_1 Name=Architektura a staviteľství, po íta ová grafika, 2. semestr

| | | | |
|--|-------------------------|---|---|
| 129YAR1 | ArchiCad 1 ? Elementary | Z | 1 |
| The students are acquainted with the possibilities of BIM using ArchiCAD software. Basic tools, functions and principles are demonstrated. Students practice the newly acquired knowledge on a simplified BIM model of a family house or another appropriate building or structure. Objective of this course is to teach prospective architects and civil engineers an effective method of creation BIM model that is base for 2D and 3D documentation (including VR model, IFC etc.). | | | |
| 129YAR2 | ArchiCad 2 ? Advanced | Z | 1 |
| The subject enhances and develops skills acquired in the basic course 129ACM1. The course is focused on methods and tools for creating of complicated shapes and library elements. | | | |
| 129YCIN | Cinema | Z | 1 |
| The goal of this course is to present methods and concepts of computer 3D models creation using general 3D modeller Cinema4D. | | | |
| 129YREV | Revit | Z | 1 |
| 129Y3D | 3D max | Z | 1 |

Name of the block: Jazyky

Minimal number of credits of the block: 4

The role of the block: J

Code of the group: BA20150200_J

Name of the group: povinn voliteľný jazyk - 2. semestr

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

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

Credits in the group: 2

Note on the group:

| Code | Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) <i>Tutors, authors and guarantors (gar.)</i> | Completion | Credits | Scope | Semester | Role |
|---------|--|------------|---------|-------|----------|------|
| 104YC1A | English 1 <i>Petra Martincová</i> | Z | 2 | 2C | Z,L | J |

| | | | | | | |
|---------|--|---|---|----|-----|---|
| 104YC1F | French 1 <i>Svatava Boboková Bartíková</i> | Z | 2 | 2C | Z,L | J |
| 104YC1N | German 1 <i>Svatava Boboková Bartíková</i> | Z | 2 | 2C | | J |
| 104YC1R | Russian 1 <i>V ra ermáková</i> | Z | 2 | 2C | | J |
| 104YC1S | Spanish 1 <i>Miloslava Menclová</i> | Z | 2 | 2C | | J |

Characteristics of the courses of this group of Study Plan: Code=BA20150200_J Name=povinn volitelný jazyk - 2. semestr

| | | | |
|---------|-----------|---|---|
| 104YC1A | English 1 | Z | 2 |
| 104YC1F | French 1 | Z | 2 |
| 104YC1N | German 1 | Z | 2 |
| 104YC1R | Russian 1 | Z | 2 |
| 104YC1S | Spanish 1 | Z | 2 |

Code of the group: BF20150300_J

Name of the group: povinn volitelný jazyk - 3. semestr

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

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

Credits in the group: 2

Note on the group:

| Code | Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) <i>Tutors, authors and guarantors (gar.)</i> | Completion | Credits | Scope | Semester | Role |
|---------|--|------------|---------|-------|----------|------|
| 104YC2A | English 2 <i>Hana Horká, Petra Martinčová, Petra Florianová, Sandra Giormani, V ra ermáková, Svatava Boboková Bartíková, Elena Da eva, Michaela Németh, Anna Študentová, Svatava Boboková Bartíková Sandra Giormani (Gar.)</i> | Z,ZK | 2 | 2C | | J |
| 104YC2F | French 2 <i>Svatava Boboková Bartíková</i> | Z,ZK | 2 | 2C | | J |
| 104YC2N | German 2 <i>Svatava Boboková Bartíková Sandra Giormani Svatava Boboková Bartíková (Gar.)</i> | Z,ZK | 2 | 2C | | J |
| 104YC2R | Russian 2 <i>V ra ermáková</i> | Z,ZK | 2 | 2C | | J |
| 104YC2S | Spanish 2 <i>Miloslava Menclová</i> | Z,ZK | 2 | 2C | | J |

Characteristics of the courses of this group of Study Plan: Code=BF20150300_J Name=povinn volitelný jazyk - 3. semestr

| | | | |
|--|-----------|------|---|
| 104YC2A | English 2 | Z,ZK | 2 |
| English 2 Course code: 104YC2A Scope: 0 + 2 (practical sessions) Number of credits: 1 Final assessment: credit and exam The aim of the compulsory English course is to enhance the knowledge of lexis and grammar within the scope of the chosen field of study and university studies in general (Academic English); the overall focus is on professional language (i.e., ESP - technical style) and communicative competence within the construction industry. The course also seeks to teach students to read technical literature and to be able to produce essential written discourse and to express themselves in writing on issues in their field of study. The end of course requirements are a credit and an examination. Literature: Horká Hana, Giormani Sandra, Martinčová Petra, Nivenová Renata : Professional English for Civil Engineering (Units 6 – 10) | | | |
| 104YC2F | French 2 | Z,ZK | 2 |
| 104YC2N | German 2 | Z,ZK | 2 |
| The compulsory course - German Language for Civil Engineering is aimed at practising professional vocabulary within the scope of the construction industry, understanding professional texts, and learning the necessary presentation skills in order to present all relevant professional issues. The end-of-course requirement is a credit. Literature: A.Hanáková, J.Dressel: Deutsch im Bauwesen | | | |
| 104YC2R | Russian 2 | Z,ZK | 2 |
| 104YC2S | Spanish 2 | Z,ZK | 2 |

Name of the block: Alternativní p edm ty

Minimal number of credits of the block: 15

The role of the block: OO

Code of the group: BA20160500_1

Name of the group: volba atelieru, 5. semestr

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

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

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) <i>Tutors, authors and guarantors (gar.)</i> | Completion | Credits | Scope | Semester | Role |
|---------|---|------------|---------|-------|----------|------|
| 129AT02 | Design studio 2 <i>Libor Fránek, Helena Hexnerová, Jana Hoická, Vojtěch Dvořák, Petra Novotná, Jiří Trojan, Petr Lédl, Luboš Knytl, Petr Šíkola, Jana Hoická Petr Šíkola (Gar.)</i> | KZ | 6 | 6C | Z | OO |
| 129IDS1 | International Design Studio 1 | KZ | 6 | 6C | Z | OO |

Characteristics of the courses of this group of Study Plan: Code=BA20160500_1 Name=volba atelieru, 5. semestr

| | | | |
|---|-------------------------------|----|---|
| 129AT02 | Design studio 2 | KZ | 6 |
| The theme of the studio is a small-scale building with one operating circuit in a specific environment. It is a building of a common type of civic amenity of a smaller size. An integral part of the brief is the associated outdoor public space. | | | |
| 129IDS1 | International Design Studio 1 | KZ | 6 |

Code of the group: BA20160600_1

Name of the group: volba atelieru, 6. semestr

Requirement credits in the group: In this group you have to gain at least 9 credits

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

Credits in the group: 9

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) <i>Tutors, authors and guarantors (gar.)</i> | Completion | Credits | Scope | Semester | Role |
|---------|--|------------|---------|-------|----------|------|
| 129AT03 | Design studio 3 <i>Jana Hoická</i> | KZ | 9 | 8C | Z | OO |
| 129IDS2 | International Design Studio 2 | KZ | 9 | 8C | L | OO |

Characteristics of the courses of this group of Study Plan: Code=BA20160600_1 Name=volba atelieru, 6. semestr

| | | | |
|--|-------------------------------|----|---|
| 129AT03 | Design studio 3 | KZ | 9 |
| Studio work is the subject of an application in which students are combining the lessons learned from a wide spectrum of architectural disciplines with their own opinion and artistic creativity. In this third design studio students deal with various types of civil buildings with more complicated service and ambitious operation site with more complicated relationships. After a broad discussion, reflection and assessments of structures built on similar topics, students submit their own proposals in the form of architectural study. | | | |
| 129IDS2 | International Design Studio 2 | KZ | 9 |

Name of the block: Povinný volitelný podle typu, doporučení S1

Minimal number of credits of the block: 24

The role of the block: S1

Code of the group: BA20180800_1

Name of the group: Architektura a stavitelství, bakalářská práce

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

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

Credits in the group: 24

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) <i>Tutors, authors and guarantors (gar.)</i> | Completion | Credits | Scope | Semester | Role |
|---------|--|------------|---------|-------|----------|------|
| 124BPAA | Bachelor Thesis <i>Jaroslav Vychytil, Kateřina Mertenová Petr Hájek</i> | Z | 24 | 16C | L,Z | S1 |
| 125BPAA | Bachelor Thesis <i>Hana Kabrhelová Stanislav Frolík (Gar.)</i> | Z | 24 | 16C | L,Z | S1 |
| 127BPAA | Bachelor Thesis <i>Ivan Kaplan, Václav Jetel, Daniel Stojan, Karin Dvořáková, Jiří Kupka, Jan Hendrych, Jiří Kugl, Kateřina Štrébllová Hronovská Jiří Kupka Jiří Kupka (Gar.)</i> | Z | 24 | 16C | L,Z | S1 |
| 129BPAA | Bachelor Thesis <i>Helena Hexnerová, Vojtěch Dvořák, Ladislav Tichý, Václav Dvořák, Petra Novotná, Zuzana Pešková, Jaroslav Daňá, Štěpán Lajda, Vojtěch Taraba, Mikuláš Hulec Mikuláš Hulec (Gar.)</i> | Z | 24 | 16C | L,Z | S1 |

Characteristics of the courses of this group of Study Plan: Code=BA20180800_1 Name=Architektura a stavitelství, bakalářská práce

| | | | |
|---|-----------------|---|----|
| 124BPAA | Bachelor Thesis | Z | 24 |
| The topics of bachelor's theses are based on the needs of practice or the scientific research activities of the department, scope and difficulty correspond to the student's knowledge acquired during bachelor's studies. The supervisor of the bachelor's thesis can designate additional consultants to the student. | | | |

| | | | |
|---|-----------------|---|----|
| 125BPAA | Bachelor Thesis | Z | 24 |
| Bachelor Thesis is the result of the Bachelor degree study programme. It should prove student's ability to work independently in the area of Building Services Systems. The thesis can cover theoretical aspects or to focus on practical application on an object within building services systems. Students consult the supervisor and specialists from other departments. The thesis is presented in front of the commission. | | | |
| 127BPAA | Bachelor Thesis | Z | 24 |
| The first qualification thesis - an independent professional work of the student, of a larger scope - completing the bachelor's degree of study. The defence of the bachelor thesis is one of the components of the state final examination. | | | |
| 129BPAA | Bachelor Thesis | Z | 24 |
| The bachelor's thesis is the basic part of the SZZ. In it, the student demonstrates erudition, creativity and independence. Every bachelor of architecture A+S FSV CTU should be able to design a quality building with a scale and complexity corresponding to a family house. The topic of the bachelor thesis is the design of a family house on a specific site according to the assignment of the thesis supervisor, with emphasis on the context and individuality of the developer, taking into account the requirements for low energy consumption. | | | |

List of courses of this pass:

| Code | Name of the course | Completion | Credits |
|---------|--|------------|---------|
| 100ODPR | Industrial Training (3 weeks) Professional practice is an important part of academic education in undergraduate degree programmes. The student will gain a basic understanding of duties and professional responsibilities. The professional practice evaluates the sum of all knowledge acquired through previous theoretical studies and is a proof of their acquisition. | Z | 0 |
| 101KGA1 | Constructive Geometry A Projections and projective methods. Axonometry. Oblique projection. Orthogonal axonometry. Displaying prisms, cones, cylinders, pyramids, balls. Simple problems in axonometry. Basics of lighting of solids and groups of solids. Perspective projection. Photogrammetry. Curves, parametrisation. Helical surfaces. Quadrics. Hyperbolic paraboloid, conoids and cylindroids. Next surfaces in building industry. | Z,ZK | 5 |
| 101M1A | Mathematics 1A https://mat.fsv.cvut.cz/bubenik/mat1detail.htm | Z,ZK | 6 |
| 101M2A | Mathematics 2A https://mat.fsv.cvut.cz/vyuka/bakalari/eng/ls/MT02/ | Z,ZK | 4 |
| 101M3A | Mathematics 3A https://mat.fsv.cvut.cz/vyuka/bakalari/ls/M3A/ | Z,ZK | 4 |
| 101YPZO | Computer Modelling of Objects Modeling of specified objects and own designs in 3D and visualization of obtained models. The tools used are the surface 3D NURBS modeler Rhinoceros and the parametric modeling module Grasshopper. | Z | 2 |
| 104YC1A | English 1 | Z | 2 |
| 104YC1F | French 1 | Z | 2 |
| 104YC1N | German 1 | Z | 2 |
| 104YC1R | Russian 1 | Z | 2 |
| 104YC1S | Spanish 1 | Z | 2 |
| 104YC2A | English 2 English 2 Course code: 104YC2A Scope: 0 + 2 (practical sessions) Number of credits: 1 Final assessment: credit and exam The aim of the compulsory English course is to enhance the knowledge of lexis and grammar within the scope of the chosen field of study and university studies in general (Academic English); the overall focus is on professional language (i.e., ESP - technical style) and communicative competence within the construction industry. The course also seeks to teach students to read technical literature and to be able to produce essential written discourse and to express themselves in writing on issues in their field of study. The end of course requirements are a credit and an examination. Literature: Horká Hana, Giormani Sandra, Martincová Petra, Nivenová Renata : Professional English for Civil Engineering (Units 6 – 10) | Z,ZK | 2 |
| 104YC2F | French 2 | Z,ZK | 2 |
| 104YC2N | German 2 The compulsory course - German Language for Civil Engineering is aimed at practising professional vocabulary within the scope of the construction industry, understanding professional texts, and learning the necessary presentation skills in order to present all relevant professional issues. The end-of-course requirement is a credit. Literature: A.Hanáková, J.Dressel: Deutsch im Bauwesen | Z,ZK | 2 |
| 104YC2R | Russian 2 | Z,ZK | 2 |
| 104YC2S | Spanish 2 | Z,ZK | 2 |
| 105YPDF | Digital Photography In the introduction, the basic technical principles of creating and preserving the electronic image will be explained as a basis for understanding the entire system. Further lessons will be devoted to the construction and control of photographic equipment and general and specific imaging techniques for various photodocumentation areas. We also pay special attention to digital image processing, basic optimization and advanced editing techniques. The basic software tools will be. Adobe Photoshop and Camera RAW. After mastering the techniques of building a photographic image, the course will lead learners to understand the specific speech of photography. We will clarify the principles of photographic image, compositional patterns and the possibilities of art solutions and effects. The subject follows the path from simple mechanical recording to author's expression. It will lead the listener to master all the means of photography and composing procedures to achieve perfect picture information as well as emotional exposure to the viewer. The form of the course is quite practical, seminar, atelier. Some tasks will be solved by the teacher together with the teacher, the other separately, with the procedures and results being consulted and discussed in the group. The tutorial will cover the entire photographic process from scanning, through editing to printing. The output will be a small set of each listener with an exhibition potential. The seminar program will not avoid any genre, but emphasis will be placed on the photo of architecture. | Z | 2 |
| 105YPRA | Law (general) | Z | 2 |
| 105YRET | Rhetoric The participants of this course shall gain and improve skills that are needed for successful professional communication in practice. The study helps to develop culture and effectiveness of verbal communication in written and oral form and of nonverbal communication. It assists in overcoming eventual psychological barriers during public performance, so that the speaker can build up a favorable personal image in the audience. These skills can be employed even outside the professional field. The course instructs also on preparation of written material and visual aids. The ?Rhetoric? course covers the foundations of the field and serves as an overview course. | Z | 2 |

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|--|---|------|----|
| 105YSAS | Sociology and Psychology | Z | 2 |
| The subject is conceived as a synthesis of selected chapters from psychology and sociology. He deals with the psychology of work and organization, managerial psychology, social psychology and the use of psychology in corporate communication. In the part of sociology, attention is focused on the sociology of the city and the region, the sociology of housing and selected themes from sociology of the company. | | | |
| 122TS1A | Technology of Construction | Z,ZK | 4 |
| The subject deals with basic technologies and technological procedures, as well as supplier documentation and the realization of building structures | | | |
| 123SHMA | Building Materials | Z,ZK | 3 |
| Building materials - basic course. Classification of the materials. Structure of materials. Main properties of materials. Application of materials in building constructions. Introduction to material testing. | | | |
| 123YSHA | Bulding Materials in Architecture | Z | 2 |
| Deeper knowledge of building materials from the point of view of their architectural properties. New structural materials, composite materials, smart materials. Materials for exterior and interior surfaces. Choice of suitable material. Laboratory tests of some material properties - durability, frost resistance, water absorption, hardness. | | | |
| 124BPAA | Bachelor Thesis | Z | 24 |
| The topics of bachelor's theses are based on the needs of practice or the scientific research activities of the department, scope and difficulty correspond to the student's knowledge acquired during bachelor's studies. The supervisor of the bachelor's thesis can designate additional consultants to the student. | | | |
| 124PSA1 | Buildings 1 | Z,ZK | 5 |
| The concept of design of building structures with a comprehensive consideration of the functional requirements imposed on individual elements. Requirements for building structures, structural system, interaction of elements, spatial effect of the structural system. Vertical load-bearing structures (functions, requirements, principles of the structural design of walls, columns), floor structures (functions, requirements, principles of the structural design of vaults, wooden ceilings, reinforced concrete ceilings, ceramic concrete ceilings, steel and steel concrete ceilings). Expansion joints in load-bearing systems. Structural systems of single and multi-storey buildings, structural systems of long-span structures. | | | |
| 124PSA2 | Buildings 2 | Z,ZK | 5 |
| Staircases, sloping ramps, lift shafts - requirements, structural and material solutions, basics of typology, design principles, construction details, railing. Building foundations - foundation conditions, types of foundations, requirements, building plinth area (construction details). Basement - solution of basement walls, requirements, protection against water, waterproofing systems. Structural expansion joints in buildings - principles of joints design in bearing structures, thermal expansion, compensation of differences in settlement, construction details. Roof truss systems. | | | |
| 124PSA3 | Buildings A3 | Z,ZK | 6 |
| The subject has two parts. In the first part, the subject deals with the comprehensive design of supporting structures of roofing, indoor and multi-storey buildings and the structural-static effect of the perimeter and roof sheathing. The second part of the course deals with the design of packaging and dividing structures. The construction of flat and pitched roofs, the construction of external envelopes, the construction of opening fillings and light external envelopes, and the construction of partitions, views and floors are discussed." | | | |
| 124PSA4 | Buildings A4 | Z,ZK | 5 |
| Healthy Buildings Constituents of indoor microclimate, hazardous substances (VOCs, HFRs, heavy metals, moulds, microbes, aerosols, radionuclides, etc.), their sources and health effects. Influence of building structures and materials on quality of indoor microclimate. Design of buildings with respect to optimisation of indoor microclimate. Fire Safety Analysis of fire - course of fire, burning process, fire loading; legislation and European Standards; fire safety solutions - fire project, requirement for fire resistance of buildings, escape ways, distance separation, fire-fighting equipment; fire behaviour of the most used materials (wood, steel, concrete, plastics); protection of building materials against fire (brickwork, concreting, plasters and sprays, coatings, impregnates of wood, encasements, glued facings of mineral fibres); sandwiches from fire point of view; influence of claddings on the course fire; passive protection of building structures - fire walls, fire glazed structures, fire ceiling, draft stops and seals; repressive measures - electric fire signalling, stationary extinguishing devices, smoke extract, hydrant systems. | | | |
| 124SFA | Building Physics 1A | Z,ZK | 7 |
| Heat transfer, Fourier laws, thermal resistance, thermal transmittance, mean thermal transmittance, energy performance of buildings, energy need for heating, energy use, primary energy, diffusion and condensation of water vapor, internal surface temperature, risk of mould growth, thermal bridges and joints. Solar radiation and its importance. Determining the position of the Sun in the sky using numerical and graphical methods. Insolation. Meaning of terms, requirements. Daylighting. Criteria and limits. Lighting systems. The principle of determining the daylight factor by calculation and measurement. Parts of the daylight factor. Qualitative aspect of daylighting (uniformity, direction of light incidence, etc.). Concepts of sound and noise. Criteria and limits. Acoustic quantities, symbols and calculation. Sound propagation outdoors and indoors. Sound attenuation due to aperture. Direct and diffuse sound field. Reverberation time and reverberation radius. Sound absorbing structures. Structural acoustics. Sound insulation. Sound reduction index. Impact noise. Indirect transmission. | | | |
| 124YDRS | Timber Buildings | Z | 2 |
| The aim is to present a complex overview on energy efficient timber structures. Basic theoretical and design principals are presented. The lectures are focused on following technologies of timber structures: (i) heavy timber skeleton systems, (ii) light timber structures based on 2x4. (iii) CLT, (iv) log house. All technologies of timber structures are presented in structural and building physics context of low energy and passive buildings. | | | |
| 124YKSD | Complex Structural Detail | Z | 2 |
| The aim of the course is to extend the knowledge gained in previous courses - it is intended for students who have already reached advanced level of knowledge about structural problems in buildings. The content of the course is focused on the complex solution of construction details, following all legislative requirements and taking into account the maximum efficiency and durability of the chosen solution. | | | |
| 124YZSK | Plotting of Building Structures | Z | 2 |
| The subject is focused on drawing construction drawings and the basics of AutoCAD. | | | |
| 125BPAA | Bachelor Thesis | Z | 24 |
| Bachelor Thesis is the result of the Bachelor degree study programme. It should prove student's ability to work independently in the area of Building Services Systems. The thesis can cover theoretical aspects or to focus on practical application on an object within building services systems. Students consult the supervisor and specialists from other departments. The thesis is presented in front of the commission. | | | |
| 125TB2 | Building Services Systems 2 | Z,ZK | 4 |
| This subject includes an introduction to ventilation and air conditioning in buildings and solutions for electric instalations and artificial lighting. | | | |
| 125TBA1 | Building Services Systems 1 | Z,ZK | 4 |
| Basic course in building services systems - water supply, drainage, gas supply and heating systems. | | | |
| 125YNST | HVAC and services design | Z | 2 |
| Basic principles of the designing of sanitary systems, heating and ventilation. Design of the heat source, heat emitters, potable water demand, amount of ventilation air, design of air-handling unit and design of indoor systems. | | | |
| 125YPMT | Building services systems CAD, modelling and simulation | Z | 2 |
| Introductory course in computer aided modelling and design of building services systems. | | | |
| 126MMA2 | Economics and Management | Z,ZK | 5 |
| Construction, civil engineering and construction work. Life cycle of building and project. Construction projects and documentation. Participants on construction projects. Determining the cost of construction. Total construction costs. Scheduling and network analysis. Valuation of works and budgeting. Costing and bid price. Production calculation. Calculation methods. Public revenues and tax system. Awarding construction contracts. Public business competition. Contract - clauses additions. Construction business. Organizational structure and management of construction firm. Supply Management. Marketing of construction firm. Making management structures. Controlling. Site manager, foreman, technical supervision, cost | | | |

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| and author. Control days. Construction diary. Executed work and supplies quality. Production invoice and final calculation. Changes and additions to the budget. Building handover and acceptance. Investment effectiveness, Construction project evaluation. Marketing. Building changes prior completion, building handover and acceptance, handover documentation. Decision processes. Invested energy. BOM. Audit, Documentation rules. Insolvency, RIPRAN, LEED, BREEAM. Documentation rules, Insolvency law. | | | |
| 126SPSK | Territorial planning and construction code law. Public procurement law. Definition of terms. Commercial contractual relationships. Main contract types in construction - contract of the conclusion of a future contract, purchase contract, contract for work, Contents of the contract. | Z | 2 |
| 126YVSF | Small Business Management The subject is divided into lectures 1 hour per week and exercises 1 hour per week. Lectures take place according to the course outline listed below. In the exercise, students prepare their own business plan for a selected business activity according to the specified syllabus. They draw up a plan for a start-up business. Entrepreneurship can take the form of both: a self-employed person and a legal entity, e.g. Ltd. The financial plan is prepared in Excel, and the credit condition is the presentation of the business plan in power point in front of the auditorium. | Z | 2 |
| 127BPAA | Bachelor Thesis The first qualification thesis - an independent professional work of the student, of a larger scope - completing the bachelor's degree of study. The defence of the bachelor thesis is one of the components of the state final examination. | Z | 24 |
| 127UB01 | Urban Planing 1 The course introduces the student to individual functional systems in cities and their zones and prepares him/her for designing parts of settlements from the perspective of urban typology and urban design conditions. In particular, it focuses on the design conditions of residential zones and parcelling, traffic calming and segregation, public and commercial amenities, public green spaces, etc. It supplements the overview and conceptual principles with a number of examples from the Czech Republic and abroad. The exercise is intended to apply the knowledge to the design of an urban residential complex for the first time, first using a model example. | Z,ZK | 6 |
| 127UR2B | Urban Planning 2 The course covers several basic thematic areas, especially an introduction to urban composition as a creative synthesis of all components of an urban work, expressed in the composition of spaces and materials, an introduction to rural urbanism, including landscape contexts and some contemporary problems of urbanism, and selected current issues of contemporary urbanism. The individual topics are interpreted in the necessary historical context, insofar as it is relevant to the current state of the subject. The exercises, among other things, test the knowledge from the lectures and apply the urban planning knowledge acquired so far (proposal based on the knowledge from Urbanism 1). | Z,ZK | 4 |
| 127YSUP | Landscape Planning (seminar) The course gives a comprehensive idea of procedures in land-use planning on specific examples, where students individually process the individual phases of the land-use planning process from the analysis of the territory to a simple design and its transcription into the regulation of the territory. Successful completion of the course will replace the independent compulsory seminar work of the subject YUR3. | Z | 2 |
| 127YUR3 | Urban Planning 3 Topic subject of the learning is genesis of town development and town planning in the world, in the bohemian territory and in the capital town of Prague. Other topics are concerned present construction law in Czech Republic in the sphere of town planning. There is a view of types of town planning documents and demarcation of competences in the processes of plan procurement. | Z | 2 |
| 129AAKO | Architectural composition studio Students learn to apply knowledge acquired in the subject Introduction to Architecture Design to simple abstract tasks. Principles of Form and Space Composition. Idea and form of abstract surface and spatial composition. The physical model as a form of verification of compositional intentions. | KZ | 4 |
| 129AKR | Architectural drawing In architectural drawing courses, students learn to correctly perceive and "see" shapes and masses in their proportional relationships, spatial context, scale and visual perspective. Models are first assemblies of geometric solids, then supplemented with draperies and other objects. The listener learns to lay out and optimally place the drawing in the format and to use view, horizon and runs to build the final composition. Ongoing instruction aids in pencil progression while profiling personal handwriting. The goal is to develop spatial vision and gain skills in drawing and sketching, which is indispensable as a means of communication in architectural design. Consistent attention is paid to aspects of shape and mass in space, the expression of light and shadow, plasticity, structure and differentiation of materials. | KZ | 4 |
| 129AT01 | Design studio 1 Studio creation is an application subject in which students apply the knowledge gained from a wide range of architectural disciplines with their own artistic opinion and creativity. The theme of the studio is the design of an apartment building of tangible size, with an emphasis on the idea, the concept of the solution, the relationship of the designed object to the surroundings, the object's own spatial structure, layout solution, structural feasibility. It is essential to find a modern artistic and aesthetic expression in the context of the place and the surrounding buildings. Understanding of basic spatial relationships in the design phase of the project using the elementary tools of architectural creation. | KZ | 6 |
| 129AT02 | Design studio 2 The theme of the studio is a small-scale building with one operating circuit in a specific environment. It is a building of a common type of civic amenity of a smaller size. An integral part of the brief is the associated outdoor public space. | KZ | 6 |
| 129AT03 | Design studio 3 Studio work is the subject of an application in which students are combining the lessons learned from a wide spectrum of architectural disciplines with their own opinion and artistic creativity. In this third design studio students deal with various types of civil buildings with more complicated service and ambitious operation site with more complicated relationships. After a broad discussion, reflection and assessments of structures built on similar topics, students submit their own proposals in the form of architectural study. | KZ | 9 |
| 129ATV4 | Design studio (Constructional Design) The subject of the Design studio 4 is an architectural development of selected studies from ATV 1 (residential buildings), ATV2 (small public building) or ATV3 (large public building), a detailed structural, materials and technology design of the whole building or its part, including structural and architectural details. Preliminary structural analysis and building service systems concept are part of the students' outcomes. Despite of architectural concept special attention is focused on building energy concept, complex building quality including sustainable building and quality of internal microclimate. | KZ | 9 |
| 129ATZ1 | Introductory design studio 1 The Studio is the student's first experience of designing a specific building on a specific site. This course follows architectural composition course, which focuses on architectural design as an abstract composition of smaller parts in relation to a larger whole. The core of the course is the architectural design process applied to the design of a simple building. The main goal of the course in general is the mastery of architectural design techniques along with the further development of creativity initiated in architectural composition. The specific aim of the work is to design a small building - an operationally simple object in the context of specified conditions. | KZ | 4 |
| 129ATZ2 | Introductory design studio 2 The studio follows previous course of Introductory design studio 1. The main focus of the course is to extend the application of the architectural design process to include typological and ergonomic issues. The main aim of the general teaching is, along with the further development of creativity, the mastery of architectural design procedures, the acquisition of work habits and the layout of design work applied to small-scale assignments. The specific aim of the work is the design of a small building, typologically specified, with a housing element. | KZ | 6 |
| 129BPAA | Bachelor Thesis The bachelor's thesis is the basic part of the SZZ. In it, the student demonstrates erudition, creativity and independence. Every bachelor of architecture A+S FSv CTU should be able to design a quality building with a scale and complexity corresponding to a family house. The topic of the bachelor thesis is the design of a family house on a specific site according to the assignment of the thesis supervisor, with emphasis on the context and individuality of the developer, taking into account the requirements for low energy consumption. | Z | 24 |

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| 129DA01 | History of Architecture 1 | ZK | 3 |
| Subject DA1 is an introductory series of lectures on the history of architecture. It is intended to provide the student with a basic historical overview of the architecture of antiquity with overlaps into later epochs. It is subsidized by 2 hours per week. The basis of the lectures is to acquaint the student not only with the history of ancient architecture, but also with theoretical works of antiquity and with the morphology of classical orders. | | | |
| 129DA02 | History of Architecture 2 | ZK | 3 |
| The course DA2 is the second series of lectures on history of architecture. It is intended to provide the student with a basic historical overview of the architecture of antiquity with overlaps into later eras. It is subsidized for 2 hours a week. The basis of the lectures is to acquaint the student not only with the history of medieval and early modern architecture, but also with the theoretical works of Renaissance architects. | | | |
| 129DA03 | History of Architecture 3 | ZK | 4 |
| The subject deals with architecture from classicism to postmodernism. Each development stage is presented in a wider social context with an emphasis on understanding the theoretical basis of the given concepts. Emphasis is placed on understanding the main formal features of individual styles and directions, typological and structural development, the application of which is expected in future architectural practice. The subject also touches on the development of urbanism. | | | |
| 129GPA | Graphic Presentation of Architecture | KZ | 5 |
| The GPA course is divided into 2 parallel parts that complement each other. One part is dedicated to pictorial representation and is endowed with 3 hours per week. The second part is dedicated to mastering the basic tools for computer imaging and is subsidized by 2 hours. The focus of the first semester in the drawing part concerns the basics of architectural drawing and the method of representation - drawing objects in orthogonal, isometric and perspective form. Students will also learn to draw the staggered figure, drawing greenery and basic geometric solids. As a final presentation of each section (drawing, computer) students will produce a final poster consisting of a simple object set in an architectural space, including floor plans, views and sections. The poster also includes variant solutions of the architecture. | | | |
| 129IDS1 | International Design Studio 1 | KZ | 6 |
| 129IDS2 | International Design Studio 2 | KZ | 9 |
| 129NB01 | Architectural typology 1 | Z,ZK | 3 |
| The topics are focused on the basic typology of buildings for housing, accommodation and public catering. | | | |
| 129NB02 | Architectural typology 2 | Z,ZK | 5 |
| The lectures are devoted to the issue of selected types of civil buildings, especially buildings for healthcare, education, and transport. The lectures focus on operational ties, operational circuits within structures, specific requirements from various points of view - from social to, for example, hygienic. They also note the urban context, technological requirements and construction specifics, typical for the respective range of buildings. The exercises follow the lectures. | | | |
| 129NB03 | Architectural typology 3 | Z | 3 |
| The lectures are divided into 3 topics - sustainable architecture, buildings for industry and buildings for agriculture and the village. The first part is dedicated to buildings from the point of view of energy efficiency and sustainability, the second part is focused on topics related to agriculture and the specifics of the village, the last part focuses on the typology of industrial buildings, presented in a historical context (pre-industrial and industrial buildings) and with regard to their basic nature of production (single-purpose, multi-purpose and combined buildings). The lectures also cover the topic of industrial heritage, its identification, evaluation and methods of protection. | | | |
| 129UNA | Introduction to professional practise | ZK | 5 |
| The lectures are divided into two tracks. The first is devoted to architectural composition, the basics of understanding the use of compositional principles in architectural design and understanding their effects. It also deals with other key means of architecture, such as structure, color, and material. All the attributes illuminated are presented in their basic, pure form and are further demonstrated on existing buildings of historical, but especially contemporary architecture. The second section is devoted to the problems of the basic principles of space creation in terms of layout requirements, ergonomics, quality of space creation. It is an introduction to the later more specialized subjects of building science. All the principles are presented with examples of mainly contemporary architectural design. | | | |
| 129XA3K | Architectural Drawing 1 | KZ | 1 |
| The recommended XA3K drawings are exercises for those already advanced in drawing. For students, more challenging image composing is included that goes beyond the real-world imaging. Work on the larger format- A2 and pen drawing techniques assume experience already gained from previous required exercises. Drawing machines and vehicles in the collections of the National Museum of Agriculture in Prague and the National Technical Museum has become a traditional drawing training for students. The composition is about blending and combining the overall shape of the machine with details exaggerated in scale that are characteristic of its function in practical use. The aim is to practice spatial vision and the ability to design the actual arrangement of the composition of an object and its masses in a given space. On this basis, the quality of the drawing expression is further assessed. | | | |
| 129XA4K | Plein Air Drawing (1 week) | Z | 1 |
| Drawing en plein air. The opportunity for full concentration and intensive work is made possible by a number of days of continuous drawing practice. It brings an increase in the level of drawing as well as the opportunity to try other art techniques: watercolour, pastel, red, charcoal, etc. The aim of the plein air is to practise drawing and the use of painting techniques from sketch, compositional sketch to more demanding studies. Emphasis is placed on depicting space through seen perspective, capturing proportional relationships and scale. On this basis, the artistic quality of the drawing or painting is further appreciated. | | | |
| 129Y3D | 3D max | Z | 1 |
| 129YAR1 | ArchiCad 1 ? Elementary | Z | 1 |
| The students are acquainted with the possibilities of BIM using ArchiCAD software. Basic tools, functions and principles are demonstrated. Students practice the newly acquired knowledge on a simplified BIM model of a family house or another appropriate building or structure. Objective of this course is to teach prospective architects and civil engineers an effective method of creation BIM model that is base for 2D and 3D documentation (including VR model, IFC etc.). | | | |
| 129YAR2 | ArchiCad 2 ? Advanced | Z | 1 |
| The subject enhances and develops skills acquired in the basic course 129ACM1. The course is focused on methods and tools for creating of complicated shapes and library elements. | | | |
| 129YCIN | Cinema | Z | 1 |
| The goal of this course is to present methods and concepts of computer 3D models creation using general 3D modeller Cinema4D. | | | |
| 129YDA4 | History of Architecture 4 | Z | 2 |
| Field exercises focused on visits to buildings under reconstruction, or buildings where various types of interventions in historical buildings can be monitored. especially in the capital city of Prague. The course tries to focus on recent buildings and reconstructions that were not covered in the overview of the history of architecture. | | | |
| 129YOPA | Heritage preservation | Z | 2 |
| The heritage fund of the Czech Republic is very extensive, extremely valuable and very diverse. The abundance of cultural monuments evokes the need for quality monument care, without which it is impossible to preserve this heritage for future generations. | | | |
| 129YPSA | Psychology of Architecture | Z | 2 |
| Applied psychology of architecture is the part of psychology knowledge that architects should become familiar with within their profession in order to better orient themselves in the context of the impact of their work on human society and to properly position themselves in the process of creating an artificial environment. | | | |
| 129YREV | Revit | Z | 1 |
| 132PRA | Strength of Materials A | Z,ZK | 4 |
| The subject deals with basic elastoplastic analysis of cross-sections and structures. Uniaxial stress - effect of temperature, statically indeterminate cases, truss deformation, stress distribution. Bending of a beam - simple and combined bending, combination with axial force, tension, core of the cross-section. Ideally elastoplastic material model for uniaxial tension, | | | |

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| plastic limit state of cross-sections and structures. Beam stability, perfect and imperfect beam. Plane stress - stress transformation, principal stress, Mohr's circle, principal stress. Shear stress - bending shear. Torsion of circular, massive, thin-walled cross-sections. | | | |
| 132SMA1 | Structural Mechanics 1A | Z,ZK | 5 |
| Concurrent forces, force systems acting on rigid bodies in space/plane, moment of a force about a point and line. Supports of a rigid body, reaction forces. Compound two-dimensional structures. Trusses. Internal forces diagrams of simple statically determinate plane structures and compound two-dimensional structures. Multiaxially loaded cantilever. Definition of normal stress and prepositions of its distribution in a cross section. Equivalence of internal forces. Geometry of mass and areas, centre of gravity and moments of inertia. | | | |
| 132SMA2 | Structural Mechanics 2A | Z,ZK | 4 |
| The subject deals with the basic elastic analysis of statically indeterminate structures. The first part introduces the energy of deformation, the principle of virtual forces, deformation on statically determined structures. Maxwell and Betti's theorem. Force method and its application to statically indeterminate lattice structures, continuous beams, frames, closed frames. Symmetrical structures with symmetrical and antisymmetric loading. Effect of temperature effects and prescribed displacements of supports. Structure compliance matrix. The second part of the subject discusses the principle of virtual displacements and the direct stiffness method. Bar stiffness matrix, non-force effects, static condensation, structure stiffness matrix and localization. Computer solutions of basic construction types. The third part of the course deals with the analysis of plates and simplified methods of solving cross-stressed plates. | | | |
| 132YKPA | Statics for Architecture | Z | 2 |
| 133BZA1 | Concrete and Masonry Structures in Architecture 1 | Z,ZK | 5 |
| Properties of concrete and reinforcement, interaction of concrete and reinforcement, behavior (static action) of concrete elements, ultimate limit states - bearing capacity of reinforced concrete cross-sections in bending, bearing capacity in shear, reinforcing principles for slabs and beams, elements under N+M, serviceability limit states. Masonry structures. Prestressed concrete. | | | |
| 133BZA2 | Concrete and Masonry Structures in Architecture 2 | Z,ZK | 5 |
| Design of concrete elements under stress combinations, bearing capacity of slender pressed elements, bearing capacity in punching and twisting. Analysis of the behavior of reinforced concrete elements and structures. Design process. Static action, choice and application of calculation models and methods, procedures of simplified methods and principles of reinforcement of individual types of structures - ceiling slabs, frames, walls, stairs, wall beams, basement and retaining walls, foundations. Precast structures. | | | |
| 133YBKC | Concrete and Masonry Structures 1 | Z | 2 |
| Introduction to selected computer programs for structural modeling. Fundamentals of the finite element method. Basic types of elements for modeling of structures. Principles for choosing a suitable model. Practical procedures for the design and assessment of reinforced concrete structures using software tools. Principles and methods of interpretation and verification of results. Practical examples. | | | |
| 134ODA1 | Steel and Timber Structures in Architecture 1 | Z,ZK | 5 |
| Students learn the steel elements supporting structures, manufacturing, designing of beams, columns, joints, and ocelobetonovými structures, basic fire design and corrosion protection. the multi-storey buildings and halls are introduced. | | | |
| 134ODA2 | Steel and Timber Structures in Architecture 2 | Z,ZK | 4 |
| The course introduces students to the static and structural design of timber structures in civil engineering. Material properties, the design rules according to European standards and principles of good structural design are presented within the course. | | | |
| 134YNKS | Glass Structures | Z | 2 |
| The course is intending to introduce the students the field of structural applications of glass and to give them some specific skills for calculation and detailing of for basic glass structures: panes beams and fins, columns and walls, point-supported glass, as well as for glazing systems such as glass facades, canopies and roofs, stairs and floors. On this purpose the properties of glass as structural material will be presented in comparison with other basic building materials, together with selected examples of glass/glazing applications. Design details and connecting technology, relevant technical regulations, specification and current methods applied in design will be described. Worked examples will accompany the lectures for better understanding, and design project will help to fix specific knowledge. | | | |
| 135GEA | Geology | Z,ZK | 2 |
| The course focuses on the understanding of basic geological laws and principles in relation to architecture, civil engineering and urban planning. Emphasis is placed on explaining the influence of geological processes, both endogenous and exogenous, on the rock environment and how the geological situation affects the design of structures and their interaction with the rock environment. At the same time, attention is paid to the technical properties of rocks with regard to their practical applications. Last but not least, the course includes a brief excursion into the degradation of building and decorative stone and the restoration and reconstruction of constructions made of it. | | | |
| 135MZA | Soil mechanics and foundation engineering | Z,ZK | 4 |
| Origin and composition of soil, basic properties, classification. Stresses in soil. Permeability, compressibility and strength of soils, Mohr's theory of failure. Principles of laboratory and field testing of soils. Soil pressures on structures, slope stability. Bearing capacity and deformation in flat and deep foundations. Foundation technology, construction pits. Principles of foundation soil improvement. Basic principles of monitoring in geotechnical engineering. | | | |
| 135YKA | Stones in architecture | Z | 2 |
| The course "Stone in Architecture" is an excursion into the use of natural stone as a building and decorative material, not only from the perspective of the present but also from the past. Emphasis is placed on the familiarity with the main properties of rocks that affect their usability in practice, what influences these properties both in the formation itself and over time in construction. Attention is paid to the methods of quarrying stone, the possibilities and methods of its working, the specifics of the use of stone in the exterior and interior. At the same time, attention is paid to the problems of durability and restoration and reconstruction of stone objects. Last but not least, students are introduced to the basic technical standards related to the issue. The course includes two excursions to the building and decorative stone of Prague, if possible also to a demonstration of the reconstruction or restoration of a historical building. | | | |
| 136DSA | Road and Rail Construction | Z | 2 |
| Introduction to road construction, legislation and regulations, design elements of the route, function of communication depending on its meaning, width layout design - extravillan vs. Intravillage. Urban engineering and the specifics of urban roads, new construction vs. reconstruction, width arrangement of urban roads, parking, public mass transport and its preferences (rail and non-rail), intersections, bus stations. Pedestrian traffic, pedestrian crossings, residential and pedestrian zones, zones 30, adaptations for the blind and disabled, bicycle traffic, earth figure, road objects, drainage, safety equipment on roads. Roadway (and sidewalk) - construction, distribution, application, layer materials, design according to TP 170, implementation. Project documentation - attachments, negative effects of transport. | | | |
| 154SGEA | Land Surveying | Z,ZK | 5 |
| Basic information on the Earth, angle and distance measurement, basics of geodetic calculation (traverse, intersection), determination of heights, basics of setting-out, maps for designing, basics of photogrammetry, basics of error theory and adjustment calculus, determination of areas and volumes, modern geodetic instruments and methods (electronic thecheometers, GPS, laser scanners), basic geodetic rules. | | | |
| TV1 | Physical Education | Z | 0 |
| TV2 | Physical Education | Z | 0 |

For updated information see <http://bilakniha.cvut.cz/en/FF.html>

Generated: day 2024-05-19, time 05:22.