Study plan

Name of study plan: Stavební inženýrství, specializace Pozemní stavby

Faculty/Institute/Others:

Department:

Branch of study guaranteed by the department: Welcome page

Garantor of the study branch: Program of study: Civil 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 akademického roku 2020/21 do 2023/24

Name of the block: Compulsory courses Minimal number of credits of the block: 117

The role of the block: Z

Code of the group: BJ20190100

Name of the group: Stavební inženýrství, varianta J, 1. semestr

Requirement credits in the group: In this group you have to gain at least 29 credits

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

Credits in the group: 29 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
101KG01	Constructive Geometry Iva K ivková, Iva Malechová, Michal Zdražil, Iva Slámová, Hana Lakomá, Petra Vacková, Jana ápová, Jozef Bobok Jana ápová Iva K ivková (Gar.)	Z,ZK	5	2P+2C	Z,L	Z
101MA01	Mathematics 1 Iva Malechová, Iva Slámová, Petra Vacková, Jana ápová, Jozef Bobok, Michal Beneš, Ivana Pultarová, Ond ej Zindulka, Jan Chleboun, Aleš Nekvinda Aleš Nekvinda (Gar.)	Z,ZK	6	2P+3C	Z,L	Z
105SVAI	Social Sciences and Architecture Josef Záruba Pfeffermann, Bo ivoj Marek, Rudolf Pošva, Dana ímanová, Jana Hrbková Josef Záruba Pfeffermann Josef Záruba Pfeffermann (Gar.)	Z,ZK	5	4P+1C	L	Z
123CHE	Chemistry Jana Náb Iková, Martin Keppert, Milena Pavlíková Milena Pavlíková Milena Pavlíková (Gar.)	Z,ZK	4	3P+1C	L	Z
132SM01	Structural Mechanics 1 Michal Polák, Daniel Rypl, Mat j Lepš, Jan Sýkora, Tomáš Koudelka, Aleš Pali ka, Karel Pohl, Tomáš Plachý, Martin Válek, Mat j Lepš Michal Polák (Gar.)	Z,ZK	6	2P+2C	Z,L	Z
135GM01	Geomechanics 1 Kate ina Ková ová, Jan Jelínek, Svatoslav Chamra, Richard Malát Kate ina Ková ová Kate ina Ková ová (Gar.)	Z	3	2P+1C	L	Z

Characteristics of the courses of this group of Study Plan: Code=BJ20190100 Name=Stavební inženýrství, varianta J, 1. semestr

building industry.			
Basics of lighting of solid	ls and groupes of solids. Perspective projection. Curves, parametrisation. Frenet's trihedron, torsion and curvature. Helical s	urfaces. Quadrics.	Surfaces in
Projections and projection	e methods. Axonometry. Oblique projection. Orthogonal axonometry. Displaying prisms, cones, cylinders, pyramids, balls. S	imple problems in	axonometry.
IUINGUI	Constructive Geometry	,_r\	5

bullaring iridustry.			
101MA01	Mathematics 1	Z,ZK	6
https://mat.fsv.cvut.cz/b	ubenik/mat1detail.htm		
105SVAI	Social Sciences and Architecture	Z,ZK	5

The subject combines the teaching of several social sciences: economics and economic policies, political science, political philosophy and law, with an overview of the development of architecture. In the section devoted to economics, the basic categories of the market economy, the foundations of economic policy and the basic concepts of international economics are explained. Theoretical interpretation is effectively combined with practical examples from economic reality. In the lectures devoted to law, a brief overview of the development of Roman law and its institutions is supplemented by a well-founded interpretation of the constitution, human rights and the labor code. Great attention is paid to selected provisions of the Civil Code and the Construction Act. In the political science lectures, the political development in ancient times is described in an engaging way, the theory of the state, political systems, democracy and totalitarianism are clarified. The series of lectures on the history of architecture and construction provides a comprehensive interpretation of the history of architecture from antiquity to postmodernism and deconstruction.

123CHE Chemistry Introduction to general chemistry - chemical bond, compounds, reactions, equilibrium. Chemistry of environment - water, atmosphere, pedosphere. Chemistry of building materials inorganic binders, glass, ceramic, metals, natural polymers, wood, synthetic polymers on C and Si basis. Introduction to degradation of building materials and to analytical chemistry.

132SM01 Structural Mechanics 1 Z.ZK

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. Reaction forces applying the principle of virtual work.

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. The course also includes a brief introduction to the regional geology of the Czech Republic.

Code of the group: BJ20190200

Name of the group: Stavební inženýrství, varianta J, 2. 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
101MA02	Mathematics 2 Iva Malechová, Iva Slámová, Hana Lakomá, Petra Vacková, Jana ápová, Jozef Bobok, Michal Beneš, Ivana Pultarová, Ond ej Zindulka, Ivana Pultarová Ivana Pultarová (Gar.)	Z,ZK	6	2P+3C	L,Z	Z
102FYI	Physics Pavel Novák, Tomáš Zbíral, Ji í Konfršt, Petr Pokorný, Jan Trejbal, Pavel Demo, Ji í Novák Pavel Novák Pavel Novák (Gar.)	Z,ZK	4	3P+1C	L	Z
123SH01	Building Materials Alena Vimmrová, Eva Vejmelková, Miloš Jerman Alena Vimmrová Alena Vimmrová (Gar.)	Z,ZK	5	2P+2C	Z,L	Z
126BIM1	BIM Petr Mat jka, Josef Žák Josef Žák (Gar.)	Z	1	1P+1C	Z	Z
132SM02	Structural Mechanics 2 Michal Polák, Daniel Rypl, Mat j Lepš, Jan Sýkora, Tomáš Koudelka, Aleš Pali ka, Martin Válek, Jitka N me ková, Šimon Glanc, Michal Polák Michal Polák (Gar.)	Z,ZK	6	2P+2C	L,Z	Z
154SG01	Land Surveying in Civil Engineering Rudolf Urban, Martin Štroner Rudolf Urban Rudolf Urban (Gar.)	Z,ZK	6	2P+3C	Z,L	Z

Characteristics of the courses of this group of Study Plan: Code=BJ20190200 Name=Stavební inženýrství, varianta J, 2. semestr

101MA02	Mathematics 2	Z,ZK	6
https://mat.fsv.cvut.cz/v	yuka/bakalari/eng/ls/MT02/		
102FYI	Physics	Z,ZK	4

This is a basic physics course for students of the study programmes Civil Engineering; Management and Economics in Construction. The course focuses on mechanics and basic thermodynamics. The following areas are covered in the course: Mechanics of material points (particles) and deformable bodies. Discrete and continuous model of matter. Kinematics and dynamics of a material point (particle). Mechanical force fields. Gravitational field. Mechanical vibrations. Material deformation. Elastic waves. Acoustics. Hydromechanics. Fundamentals of thermodynamics. Heat transfer.

123SH01 **Building Materials**

Z,ZK 5 Building materials - basis course. Clasification of the materials. Structure of materials. Main properties of materials. Application of materials in building constructions. Introduction to material testing.

126BIM1

The course focuses on teaching basic knowledge in the field of Building Information Management (BIM) in theoretical and practical areas, applicable across different specialisations and disciplines of the construction industry. Students will be introduced to data formats, data standards, intellectual property issues, working with digitized documents, raster and vector graphics, open data sources in the Czech Republic, ICT and enterprise systems, information systems for the construction industry, but also the context of BIM in the current construction industry in relation to the entire project life cycle and its specifics (delivery, expert focus, phases of construction projects, etc.) The theoretical knowledge is complemented by practical exercises aimed at mastering and understanding the basic principles of object-oriented parametric modelling

Structural Mechanics 2

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

Land Surveying in Civil Engineering

The shape and size of the Earth, substitutive surfaces, cartographic projections Horizontal and vertical control, coordinate calculations Quality control, deviations and tolerations in build-up Angle and distance measurements Heighting measurements Other geodetic methods in build-up (GNSS, DPZ, ...) Photogrammetry and laser scanning Thematic mapping and present state documentation Geodetic works in build-up State map series of CR and thematic maps for build-up Geographic information systems and spatial planning Cadastre of real estates Laws and decrees for geodesy and build-up in Czech Republic

Code of the group: BJ20190300

Name of the group: Stavební inženýrství, varianta J, 3. 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) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
101MA03	Mathematics 3 Iva Malechová, Jozef Bobok, Michal Beneš, Ond ej Zindulka, Petr Ku era, Zden k Skalák, Martin Hála, Martin Soukenka, Petr Mayer, Michal Beneš Michal Beneš (Gar.)	Z,ZK	6	3P+2C	Z,L	Z
124PSI1	Building Structures 11 Ctislav Fiala, Jan R ži ka, Petr Hájek, Jaroslav Vychytil, B la Stib rková Jan R ži ka Petr Hájek (Gar.)	Z	4	2P+1C	Z	Z
132PRPE	Strength of Materials Petr Kabele, Michal Šejnoha, Milan Jirásek, Jan Vorel, Eva Novotná, Martin Došká, Martin Horák, Martin Lebeda, Barbora Hálková, Milan Jirásek Petr Kabele (Gar.)	Z,ZK	6	3P+2C	Z,L	Z
135GM2I	Geomechanics 2I Jan Salák, Ji í Koš ál, Martin Vaní ek, Ivan Vaní ek Ivan Vaní ek Jan Salák (Gar.)	Z,ZK	5	2P+1C	Z	Z
141HYA	Hydraulics Michal Dohnal, Aleš Havlík, Tomáš Picek, Václav Matoušek, Petr Sklená, Martin Fencl, Anna Špa ková, Jakub Novotný, Vojt ch Bareš, Václav Matoušek Michal Dohnal (Gar.)	Z,ZK	5	2P+2C	Z,L	Z
142VIZP	Water and Environmental Engineering Aleš Havlík, Martin Fencl, Michal Sn hota, Petr Nowak, Tomáš Dostál, Martin Do kal, Martin Šanda, Pavel Fošumpaur, Bohumil Š astný, Martin Horský Ladislav Satrapa (Gar.)		4	3P+1C	Z,L	Z

Characteristics of the courses of this group of Study Plan: Code=BJ20190300 Name=Stavební inženýrství, varianta J, 3. semestr

101MA03	Mathematics 3	Z,ZK	6						
https://mat.fsv.cvut.cz/	https://mat.fsv.cvut.cz/vyuka/bakalari/eng/zs/								
124PSI1	Building Structures 1I	Z	4						
The concept of design	of building structures with a comprehensive consideration of the functional requirements imposed on individual elements. Rec	quirements for bu	ilding structures,						
structural system, inter	action of elements, spatial effect of the structural system. Vertical load-bearing structures (functions, requirements, principles	of the structural of	design of walls,						
columns), floor structu	es (functions, requirements, principles of the structural design of vaults, wooden ceilings, reinforced concrete ceilings, cerami	c concrete ceiling	s, steel and steel						
concrete ceilings). Exp	ansion joints in load-bearing systems. Structural systems of single and multi-storey buildings, structural systems of long-span	structures.							
132PRPE	Strength of Materials	Z,ZK	6						
Fundamentals of the th	eory of elasticity: stress and strain of straight beams subjected to bending and free torsion, ultimate plastic capacity of a men	nber in bending, c	ritical loads and						
buckling lengths of stra	ight compression members. Basic assumptions, quantities, and equations describing the stress and strain state in 3D continu	um, plates and w	alls.						
135GM2I	135GM2I Geomechanics 2I Z,ZK 5								
Formation of soils, bas	Formation of soils, basic properties of soils, water in soil, strength and deformation properties of soils and their determination, improvement of soil properties, application tasks								
141ΗΥΔ	Hydraulics	7 7K	5						

A course deals with issues of hydrostatics and hydrodynamics with aiming at civil engineering applications. There are analysed tasks related to hydrostatic and hydrodynamic loading of structures, pipeline flow, open channel flow and groundwater flow. Z,ZK

Water and Environmental Engineering 142VIZP

During the teaching semester, students are introduced to the fields of water engineering, water management and environmental engineering. In particular, emphasis is placed on the practical aspects of water and environmental engineering in close relation to other branches of civil engineering. The course is taught in the form of lectures and tutorials. The lectures are divided thematically into 20 blocks according to the different branches of the discipline (13 times water engineering and 7 times environmental engineering). In the exercises, students work on basic problems in the field of hydrology, water supply and water structures, especially dams, hydropower and flood issues. All 4 "water" departments of K14x are involved in teaching the course.

Code of the group: BJ20190400

Name of the group: Stavební inženýrství, varianta J, 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) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
124PSI2	Building Structures 2l Ctislav Fiala, Petr Hájek, Malila Noori, Veronika Ka ma íková, Jaroslav Vychytil, Tereza Pavl , Ji í Pazderka, Ji í Nová ek Ji í Pazderka Ji í Pazderka (Gar.)	Z,ZK	4	2P+1C	L	Z
126EKMN	Economics and Management Eduard Hromada, Martin ásenský, Božena Kade ábková, Petr Kal ev, Pavlína Píchová, Pavlína Píchová Eduard Hromada Eduard Hromada (Gar.)	Z,ZK	7	4P+2C		Z
132SM3	Structural Mechanics 3 Tomáš Koudelka, Petr Kabele, Michal Šejnoha, Milan Jirásek, Jan Vorel, Eva Novotná, Martin Horák, Michal Šmejkal, Tomáš Krej í, Aleš Jíra Petr Kabele (Gar.)	Z,ZK	5	2P+2C	L,Z	Z

133NNKB	Fundamentals of Structural Design - Concrete Martin Tipka, Radek Štefan, Jitka Vašková Martin Tipka Martin Tipka (Gar.)	Z,ZK	4	2P+1C	L,Z	Z
134NNKO	Design of Supporting StructuresI - Steel František Wald, Michal Jandera, Martina Eliášová Martina Eliášová (Gar.)	Z,ZK	3	2P+1C	L	Z
136DSUZ	Transport Structures and Urban Planning Ludvík Vébr, František Pospíšil, Ond ej Bret František Pospíšil Ludvík Vébr (Gar.)	Z,ZK	7	5P+1C	L,Z	Z

Characteristics of the courses of this group of Study Plan: Code=BJ20190400 Name=Stavební inženýrství, varianta J, 4. semestr

124PSI2 **Building Structures 2I**

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.

126EKMN **Economics and Management** Z,ZK

The aim of the course is to provide students with an introduction to economics and management in the construction industry and to familiarize them with basic economic terms and their practical applications. Students will be prepared to solve basic construction-management problems in the construction industry. They will acquire basic information about the method of pricing construction works and master the basic methods of managing a construction company. Emphasis is placed on understanding the principle of economic thinking in relation to the construction industry.

132SM3 Structural Mechanics 3

Deformation and force method for the solution of reactions and internal forces on statically indeterminate beams, frames, and truss structures. Calculation of displacements of beams, frames, and truss structures using the principle of virtual works.

133NNKB Fundamentals of Structural Design - Concrete Z,ZK

The content of the subject are the basics of load-bearing concrete structures design and the design methodology according to valid standards, including the determination of load effects. The properties of concrete, the production and testing of concrete, the properties of concrete reinforcement and its interaction with concrete are discussed. Design and reinforcement of concrete structures for basic types of loading (bending, shear, pressure) are the main part of this course. An introduction to serviceability limit states is in the end of this course. The course follows the introductory subject of Civil Engineering program (Structural Mechanics, Elasticity and Strength, Building Materials, Building Structures).

134NNKO Design of Supporting StructuresI - Steel Z,ZK

The basics of designing steel, steel-concrete and wooden load-bearing structures according to applicable standards, including the determination of load effects, design differences due to the specific properties of individual materials.

136DSUZ Transport Structures and Urban Planning

The course 136DSUZ is composed of 3 issues, which build on each other and complement each other. These are the area of transport structures (roads and rail transport - scope 3+1) and the area of urban planning and spatial planning (scope 2+0). Unlike the road construction and railroad construction sections, the urban planning section does not end with credit. Transport Structures - Roads (R): Introduction to basic terminology in the part of roads, history. Road Act and related legislative and technical regulations, their impact on road design. Design categories of roads and motorways, design speed, directional and elevation design of routes, cross-sectional layout of roads and motorways, earthwork - dimensions, shapes, drainage. Urban roads, division and marking, definition of MK space, differences in design, operation and equipment. Carriageway, division, design principles. Safety equipment, junctions and crossings. Transport Structures - Rail transport (RT): Introduction to basic terminology, Issues of railway crossings from the point of view of security, design and operation. Tram transport - history, principles of tram track construction, interaction with the environment. Metro as a system of urban rail transport. Basic principles and parameters, metro lines. Railway constructions - an introduction to the design and construction of a railway track in the conditions of the Czech Republic, the basic elements of the railway superstructure. Spatial Planning (SP): Teaching spatial planning and urban planning, spatial planning tools and procedures for their acquisition.

Name of the block: Compulsory courses in the program

Minimal number of credits of the block: 94

The role of the block: P

Code of the group: BC202005

Name of the group: Stavební inženýrství, specializace Pozemní stavby, 5. 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 5 courses

Credits in the group: 30 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
124SF01	Building Physics Jaroslav Vychytil, Ji í Nová ek Ji í Nová ek Zbyn k Svoboda (Gar.)	Z,ZK	6	3P+2C	Z	Р
132ANKC	Analysis of Structures Aleš Jíra, Dagmar Jandeková, Petr Konvalinka, Jan Zatloukal Petr Konvalinka Petr Konvalinka (Gar.)	Z,ZK	5	2P+2C	Z	Р
133BK01	Concrete and Masonry Structures 1 Martin Tipka, Jitka Vašková, Petr Bílý Petr Bílý Petr Bílý (Gar.)	Z,ZK	6	3P+2C	Z	Р
134OK01	Steel Structures 1 Michal Jandera Michal Jandera (Gar.)	Z,ZK	6	3P+2C	Z	Р
135ZS01	Foundations 1 Ji í Barták, Jan Masopust Jan Pruška Jan Kos (Gar.)	Z,ZK	7	3P+3C	Z	Р

Characteristics of the courses of this group of Study Plan: Code=BC202005 Name=Stavební inženýrství, specializace Pozemní stavby, 5.semestr

124SF01 Building Physics

Z.ZK

6

Thermal performance of buildings Basic course on building physics. The first part of the course (lectures 1, 2) introduces basic principles of heat, air and moisture transfer in buildings and building components as a necessary background for further studies. The second part of the course (lectures 3 to 6) provides an introduction into the design and construction of buildings and building components with respect to building physics related issues. Typical tasks of building design and construction process related with the topics of the course will be presented as well as methods for their solution. A short information on selected diagnostic used for assessment of thermal performance of buildings methods will be presented. Lighting technology deals with two main parts, sun exposure and daylighting. In the first part, the listener will learn which objects are subject to requirements and what are the options for verifying the time of insolation. This part also includes the connection of the results with possible boundary conditions. The second part deals with the assessment of daylight mainly in the interiors of buildings with regard to the gradation of sky brightness, shading conditions and the characteristics of the room and the lighting opening. In acoustics, the listener is first introduced to the concepts of sound and noise, sound perception, basic quantities, sound sources and corresponding limits. The propagation of sound in the free and diffuse field, the propagation of sound through an obstacle or in the ear canal is also discussed. When assessing or designing the interiors of buildings, knowledge regarding sound absorption structures and sound insulation properties of dividing structures will be applied.

132ANKC Analysis of Structures

Z,ZK

5

Analyses of statically determinate and statically/deformable indeterminate structures, concerning live loads solution, stresses in thin-wall beams, analysis of walls and plates, matrix formulation of deformation method, principles of FEM, models for a beam on elastic foundation and stability of structures.

133BK01 Concrete and Masonry Structures 1

Z,ZK

6

The subject is focused on the design of concrete elements and constructions of multi-storey buildings - it follows on from the subject Fundamentals of Structural Design. The content of the course is the addition and generalization of procedures for verifying the load-bearing capacity of reinforced concrete structural elements for cases of bending, shear, a combination of biaxial bending and normal force, designing elements stressed by torsion, punching shear, assessment of slender compressed elements. Design procedures are discussed for individual types of structures, including the choice of suitable calculation models and calculation methods and reinforcement principles.

134OK01 Steel Structures 1

7 7K

6

The course OK01 aims to expand the knowledge acquired in the subject NNK and concerning design of basic steel structures. In the theoretical part are delivered possibilities of global analysis of structures including classification from view of necessities of nonlinear analyses. Design of steel elements is widen for global analysis methods, advanced composite steel and concrete beams/columns and cold-formed thin-walled elements. The main part of the subject deals with complex design of multi-storey steel buildings and steel industrial halls. Final lectures concern large-span structures, uniqueness in design of tall buildings, including effects of seismicity.

135ZS01 Foundations 1

7 7K

7

Introduction to the subject, literature, design principles, geotechnical categories Strength and deformation characteristics of foundation soils, slab foundations Limit states of flat foundations, calculation of bearing capacity and settlement of flat foundations Deep foundations - typology, pile foundations, drilled and driven pile technology Axial capacity of isolated piles, pile load tests Determination of bearing capacity of transversely loaded piles, pile group Micropiles, anchors, technology Conventional and jet grouting, underground walls Construction pits, technology of shoring of construction pits Principles for the design and assessment of shoring structures, earth pressure, water effect Calculation of shoring structures, pressure dependent methods Dewatering of construction pits Protection of foundation structures against the effects of aggressive environments

Code of the group: BC202006

Name of the group: Stavební inženýrství, specializace Pozemní stavby, 6.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 5 courses

Credits in the group: 30

Note on the group.

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Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
124KK01	Non-Load Bearing Construction Lenka Hanzalová, Hana Gattermayerová, Šárka Šilarová, Pavel Kopecký, Kate ina Mertenová Šárka Šilarová Šárka Šilarová (Gar.)	Z,ZK	7	2P+3C	L	Р
124P01C	Structural design project 1 Malila Noori, Lenka Hanzalová, Ji í Pazderka, Ji í Novák, Kate ina Mertenová, Martin Jiránek Ji í Pazderka Ji í Pazderka (Gar.)	KZ	6	4C	L	Р
125TZ01	Building services systems 1 Karel Kabele, Stanislav Frolík Karel Kabele (Karel Kabele (Gar.)	Z,ZK	5	2P+2C	L	Р
133BK02	Concrete and Masonry Structures 2 Jitka Vašková, Iva Broukalová, Michal Drahorád, Marek Foglar Marek Foglar (Gar.)	Z,ZK	7	4P+2C	L	Р
134DK01	Timber Structures 1 Lukáš Velebil, Petr Kuklík, Anna Kuklíková Anna Kuklíková Jakub Dolejš (Gar.)	Z,ZK	5	3P+1C	L	Р

Characteristics of the courses of this group of Study Plan: Code=BC202006 Name=Stavební inženýrství, specializace Pozemní stavby, 6.semestr

124KK01 Non-Load Bearing Construction Z,ZK 7
In the first part, the subject deals with the complex design of indoor and high-rise buildings, especially the influence of marginal conditions on the choice of material and structural variants and with an emphasis on envelope structures. In the second, more extensive part, the principles of solutions for roofs, perimeter walls, opening fillings and internal completion

structures for various types of buildings are clearly discussed.

Structural design project 1

124P01C

KZ

6

Converting an architectural study of a smaller or medium-sized building for housing, administration, education, culture or sports into a detailed design of a building structure based on static analysis, interaction of load-bearing and non-load-bearing elements and building physics. Focus on complex approach to practical design, analysis and optimalization of a building structures. Design of variants of the load-bearing system, preliminary static analysis (calculation of load-bearing elements - slabs, columns, walls, etc), calculation of foundations, design of structures on the building envelope with respect to thermal protection of buildings, building physics, fire protection of buildings and protection against water and soil moisture. Elaboration of detailed drawings including floor plans, sections and details.

25TZ01 Building services systems 1

Z,ZK

5

Basic course in building services systems - water supply, drainage, gas supply and heating systems.

This course builds on the courses NNK and BK01 and widens the knowledge to the necessary minimum for the bachalor studium branches C and K. 1.-3. Masonry structures - subjected to compression, bending, shear, reinforced masonry, strenghtening of masonry structures 4.- 6. Design of concrete structures to serviceability limit states: stress limitation, crack development and crack width limitation, deflections, application on waterproof structures 7.-8. Introduction to pre-stressed concrete: design of pre-stressing, losses of pre-stressing, technology 9.-12. Pre-cast concrete structures 13. Bridges: nomenclature in bridges, cross-section arrangement, loading, construction methods, Introduction to engineering structures 134DK01 Timber Structures 1

Introduction and presentation of timber structures use in building industry. Wood and wood-based materials properties. Safety of timber structures design, ultimate limit states, valid

standards. Cross section design of simple members. Connections of timber structures. Glued joints. Basic structural systems. Fire design. Protection of timber structures.

Code of the group: BC202007

Name of the group: Stavební inženýrství, specializace Pozemní stavby, 7.semestr Requirement credits in the group: In this group you have to gain at least 22 credits

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

Credits in the group: 22 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
122TSC	Construction Technology C Rostislav Šulc, Mária Párová Rostislav Šulc Rostislav Šulc (Gar.)	Z,ZK	6	4P+2C	Z	Р
123MAI	Materials Engineering Milena Pavlíková, Zbyšek Pavlík Milena Pavlíková Zbyšek Pavlík (Gar.)	Z,ZK	5	2P+2C	Z	Р
124PDRC	Failures, Deteriorations, Renovations Tomáš ejka, Ji í Witzany Radek Zigler Radek Zigler (Gar.)	Z,ZK	3	2P+1C	Z	Р
124PS3C	Building Structures 3C Hana Gattermayerová, Vladimír Ž ára Vladimír Ž ára Vladimír Ž ára (Gar.)	Z,ZK	3	2P+1C	Z	Р
100ODPR	Industrial Training (3 weeks) Jan R ži ka, Petr Hájek, Kate ina Sojková Michal Jandera Michal Jandera (Gar.)	Z	0	6C	Z,L	Р
125TZ02	Building Services Systems 2 Bohumír Garlík, Daniel Adamovský Daniel Adamovský (Gar.)	Z,ZK	5	2P+2C	Z	Р

Characteristics of the courses of this group of Study Plan: Code=BC202007 Name=Stavební inženýrství, specializace Pozemní stavby, 7.semestr

122TSC	Construction Technology C	Z,ZK	6
123MAI	Materials Engineering	Z,ZK	5
The course provides	nformation on the building materials characterization and principles of designing and developing new types of materials having	directed propert	es for specific
building applications	and structures.		
124PDRC	Failures, Deteriorations, Renovations	Z,ZK	3
In the lecture series,	students are introduced to issues related to the protection of (not only) historic and heritage-protected buildings. In particular, tl	hese are defects	and failures of
buildings, load effects	and influences from the point of view of load history; non-force effects and influences, effects of forced deformation; durability as	nd reliability; mecl	nanical, physical,
chemical degradation	and corrosion processes; failures , reconstruction and rehabilitation of foundation structures, brick structures, concrete structures	(reinforced concre	te), prefabricated
structures, wooden s	ructures of buildings, protection of buildings against increased humidity and diagnostics of buildings.		
124PS3C	Building Structures 3C	Z,ZK	3
The subject deals wit	n the complex design of load-bearing structures of roofing, indoor and multi-storey buildings and the structural-static effect of the	ne perimeter roof	shell. In the first
part, the attention is f	ocused on span structures of sloping roofs and hall buildings and on structural-static problems of multi-storey buildings. In the	second part, stud	ents will learn
about the design of p	refabricated indoor and multi-storey structures.		
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 pro	fessional
responsibilities. The p	rofessional practice evaluates the sum of all knowledge acquired through previous theoretical studies and is a proof of their ac	quisition.	
125TZ02	Building Services Systems 2	Z,ZK	5
This subject includes	an introduction to ventilation and air conditioning in buildings and solutions for electric instalations and artificial lighting.		•

Code of the group: BC202008

Name of the group: Stavební inženýrství, specializace Pozemní stavby, 8.semestr Requirement credits in the group: In this group you have to gain at least 12 credits

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

Credits in the group: 12

Note on the group:

rioto on the group						
Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
124PBZN	Fire Protection and Healthy Buildings Veronika Ka ma íková, Zuzana Rácová, Martin Jiránek, Petr Hejtmánek, Marek Pokorný, Vladimír Mózer Martin Jiránek Martin Jiránek (Gar.)	Z,ZK	6	3P+2C	L	Р

126STMN	Construction Management Dana M š anová, Renáta Schneiderová Heralová, Václav Tatýrek, Jaroslava Temásková, Zita Prost javeká Martin, ácenskú, Zita Prost javeká (Cor.)	Z,ZK	6	3P+2C	Z,L	Р
	Tománková, Zita Prost jovská Martin ásenský Zita Prost jovská (Gar.)					

Characteristics of the courses of this group of Study Plan: Code=BC202008 Name=Stavební inženýrství, specializace Pozemní stavby, 8.semestr

124PBZN Fire Protection and Healthy Buildings

7 7K

6

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. 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.

126STMN Construction Management

Z.ZK

6

Overview of selected concepts. Methods to support project management. Legal standards, SN and ISO standards. The essential aspects of Project Management. Construction as a project product. Objectives, strategies, phases and surroundings of the construction project. Project manager role. Purchases and contracts in the project. Quality management, risk management. Financial management and project evaluation. Feasibility study. Cost and resource management. Change procedures. The Act on Spatial Planning and Building Regulations, the Act on the Awarding of Public Contracts, and the definition of terms. Business obligation relationships, the conclusion of contracts, their form, and use of general business conditions. Business public competition, its influence on the obligations of participants. Securing the commitment - contractual penalty, guarantee. The main contract types in construction - are contract for the conclusion of a future contract, purchase contract, contract for work, and content of the contract.

Name of the block: Compulsory elective courses

Minimal number of credits of the block: 8

The role of the block: PV

Code of the group: BC202007_2

Name of the group: Stavební inženýrství, specializace Pozemní stavby, povinn volitelné p edm ty

Requirement credits in the group: In this group you have to gain at least 8 credits

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

Credits in the group: 8 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
101YAST	Applied Statistics Daniela Jarušková Jana Nosková Daniela Jarušková (Gar.)	Z	2	1P+1C	Z	PV
102YMES	Measurement in Civil Engineering Petra Tichá, Petr Semerák, Vít zslav Vydra Petr Semerák Petr Semerák (Gar.)	Z	2	2C	Z	PV
122YBPP	Construction Safety Code Pavel Svoboda, Václav Pospíchal, Tomáš Váchal Tomáš Váchal Václav Pospíchal (Gar.)	Z	2	1P+1C	Z	PV
123YTVM	Production technology of building materials Eva Vejmelková, Dana Ko áková, Vojt ch Pommer, Martin Böhm Eva Vejmelková Eva Vejmelková (Gar.)	Z	2	1P+1C	Z	PV
124YBM1	Building Information Modeling (BIM) for Building Structures 1 Petr Mat jka, Renáta Ho ánková, Pavel Chour, Ji í erný, Hana Kabrhelová, Karel Fazekas Jan R ži ka Jan R ži ka (Gar.)	Z	4	1P+3C	Z	PV
124YKSD	Complex Structural Detail Ji í Pazderka, Radek Zigler Ji í Pazderka Ji í Pazderka (Gar.)	Z	2	1P+1C	Z	PV
124YNAK	Numerical Analysis of Building Structures Vladimír Ž ára Vladimír Ž ára Vladimír Ž ára (Gar.)	Z	2	1P+1C	Z	PV
124YSPB	Curtain Walls Lenka Hanzalová, Šárka Šilarová Šárka Šilarová Šárka Šilarová (Gar.)	Z	2	1P+1C	Z	PV
132YMMO	Modern Methods of Optimization Mat j Lepš, Jan Zeman Mat j Lepš Mat j Lepš (Gar.)	Z	2	1P+1C	Z	PV
132YNMI	Numerical Methods in Engineering Practice Petr Kabele, Milan Jirásek, Jaroslav Kruis, Jan Zeman Milan Jirásek Milan Jirásek (Gar.)	Z	2	1P+1C	Z	PV
132YPV1	Programming in C++ for Engineering Calculations 1 Tomáš Koudelka, Anna Ku erová, Stanislav Šulc Anna Ku erová Anna Ku erová (Gar.)	Z	2	1P+1C	Z	PV
133YPRK	Failures and Rehabilitation of Concrete Structures Jakub Žák, Petr Štemberk Petr Štemberk (Gar.)	Z	2	1P+1C	Z	PV
133YTB	Technology of Concrete II Josef Fládr Josef Fládr Josef Fládr (Gar.)	Z	2	1P+1C	Z	PV
134YMOD	Numerical Modeling of Steel and Timber Structures Karel Mikeš Karel Mikeš (Gar.)	Z	2	1P+1C	Z	PV

	Additional Timber and Metal Structures	_	_		_	
134YPDK	Additional Timber and Metal Structures Jakub Dolejš Jakub Dolejš Jakub Dolejš (Gar.)	Z	2	1P+1C	Z	PV
134YPNK	Fire Resistance of Steel and Timber Structures Zden k Sokol Zden k Sokol Zden k Sokol (Gar.)	Z	2	1P+1C	Z	PV
102POV1	Fire and Explosion 1 Petr Semerák Petr Semerák (Gar.)	Z	2	1P+1C	Z	PV
122YMKS	Construction Quality Controlling Rostislav Šulc, Pavel Svoboda, Tomáš Váchal, Linda Veselá Linda Veselá	Z	2	1P+1C	L	PV
123YCHS	Chemistry in Civil Engineering Milena Pavlíková, Martina Záleská Milena Pavlíková Milena Pavlíková (Gar.)	Z	2	1P+1C	L	PV
123YNTP	Numerical Analysis of Transport Processes Ji í Mad ra, Václav Ko í Ji í Mad ra Ji í Mad ra (Gar.)	Z	2	1P+1C	Z	PV
124YDRS	Timber Buildings Jan R ži ka, Jaroslav Vychytil, Kamil Stan k, Lukáš Velebil, Milan Peukert, Marek Pokorný Jaroslav Vychytil Jan R ži ka (Gar.)	Z	2	1P+1C	L	PV
124YLOP	Lightweight Building Envelope Lenka Hanzalová, Šárka Šilarová Šárka Šilarová Šárka Šilarová (Gar.)	Z	2	1P+1C	L	PV
124YPFS	Precast concrete structures Radek Zigler, Ji í Witzany Radek Zigler Radek Zigler (Gar.)	Z	2	1P+1C	L	PV
124YRHS	Reconstruction of Historical Building Structures Radek Zigler, Tomáš ejka, Ji í Witzany Ji í Witzany Ji í Witzany (Gar.)	Z	2	1P+1C	L	PV
125YNST	HVAC and services design Hana Kabrhelová Hana Kabrhelová (Gar.)	Z	2	1P+1C	Z,L	PV
125YPMT	Building services systems CAD, modelling and simulation Stanislav Frolik Stanislav Frolik (Gar.)	Z	2	2C	Z,L	PV
126YVSF	Small Business Management Jana Frková, Olga Heralová Eduard Hromada Eduard Hromada (Gar.)	Z	2	1P+1C	Z,L	PV
132YPM1	Computer Analysis of Structures 1 Petr Fajman Petr Fajman (Gar.)	Z	2	1P+1C	L	PV
132YSHK	Statics and Reconstruction of Historical Structures Petr Fajman Petr Fajman (Gar.)	Z	2	1P+1C	L	PV
133YBKC	Concrete and Masonry Structures 1 Petr Bílý, Jakub Holan Petr Bílý Petr Bílý (Gar.)	Z	2	2C	Z,L	PV
133YBSV	Concretes with Special Properties Michal Števula Michal Števula (Gar.)	Z	2	1P+1C	L	PV
133YMVB	Concrete and Masonry Structures 1 Tomáš Trtík, Petr Bílý, Josef Novák Petr Bílý Petr Bílý (Gar.)	Z	2	1P+1C	L	PV
133YPNB	Fire desgn og concrete and mnsory structures Radek Štefan, Martin Benýšek Radek Štefan Radek Štefan (Gar.)	Z	2	1P+1C	L	PV
134YDUV	Timber and Sustainable Construction Anna Kuklíková Anna Kuklíková Anna Kuklíková (Gar.)	Z	2	1P+1C	L	PV
134YNKS	Glass Structures Martina Eliášová Martina Eliášová (Gar.)	Z	2	1P+1C	L	PV
134YTSK	Thin-Walled and Composite Structures Michal Jandera Michal Jandera (Gar.)	Z	2	1P+1C	L	PV
135YING	Engineering geology Svatoslav Chamra, Milan Aue Kate ina Ková ová Milan Aue (Gar.)	Z	2	1P+1C	L	PV
135YPZU	Underground structures in urban areas Jan Pruška Jan Pruška (Gar.)	Z	2	1P+1C	Z	PV
135YVZK	Computer analysis in foundation engineering Jan Salák, Alena Zemanová, Jan Ježek, Jan Pruška, Daniel Turanský, Jan Salášek Daniel Jirásko Daniel Jirásko (Gar.)	Z	2	1P+1C	Z	PV

		1						
101YAST	Applied Statistics	Z	2					
Basic notions and termi	inology, random variable, descriptive and inferential statistics. Discrete and continuous random variables, normal distribution,	log-normal distrib	ution. Statistical					
methods, theory of estir	nation, hypotheses testing, simple linear regression.							
102YMES	Measurement in Civil Engineering	Z	2					
As part of the course, s	As part of the course, students will learn about modern measuring methods in the construction industry. In practical laboratory tasks, groups will try to work with modern measuring							
devices and apparatus	to determine elastic and deformation properties of building materials and structures, measurement and spectral analysis of s	sound, noise and v	/ibrations,					
measurement of optical	properties of materials, transmittance and reflectance of materials, determination of photometric and spectral characteristics	s of light sources,	measurement of					
thermophysical parame	ters of building materials							
122YBPP	Construction Safety Code	Z	2					
Healh and safety laws.	Works in the trenches. Works at the height. Coordinator H&S when preparing and/or building constructions on a building	site. Fire safety.						
123YTVM	Production technology of building materials	Z	2					
Basic building materials	, different types of the production technology, energy consumption of the production, storage and transport, safety at work.							
124YBM1	Building Information Modeling (BIM) for Building Structures 1	Z	4					
Building information mo	del (BIM) - basic principles of creating a building information model in the field of civil engineering, specifics of BIM modeling	. The subject use	s the Autodesk					
Revit software base. Bu	ilding information model in the life cycle of the building - information required during the design part, during construction and	during use of the t	inished building.					
124YKSD	Complex Structural Detail	Z	2					
The aim of the course is	s to extend the knowledge gained in previous courses - it is intended for students who have already reached advanced level	of knowledge abo	ut structural					
problems in buildings. T	he content of the course is focused on the complex solution of construction details, following all legislative requirements and	taking into accou	nt the maximum					
efficiency and durability	of the chosen solution							

124YNAK	Numerical Analysis of Building Structures	Z	2
The subject is focused of	on the practical modeling of various structural-static problems in particular. We will also focus on the problems of optimizing st	tructures. The goa	I is to learn how
to define a problem, cor	overt it into a mathematical model, design a solution algorithm and write this algorithm in Excel or VBA. You'll learn how to use	e Excel effectively	and write
applications that you ca	n use years from now. You will also definitely learn something about numerical modeling. I have been using Excel for work for	25 years and I wo	uld like to teach
you how to use it effecti	vely not only in building analysis models. Do not expect great science, but rather a practical approach to the problems you will	Il encounter in pra	ctice.
124YSPB	Curtain Walls	Z	2
	e design of roof coverings for sloping and steep roofs. The design of roof coverings in terms of requirements: building physical,		
-	chemical, lifetime and recycling. Principles of design of additional elements and details of roof coverings of flat, sloping and	steep roofs based	I on the stated
requirements and given	·		
132YMMO	Modern Methods of Optimization	Z	2
	in overview of numerical optimization methods applicable not only in the Civil Engineering area. The emphasis is put more on the	e introduction of di	riving principles,
	cations in MATLAB environment are also conducted during exercises.	7	
132YNMI	Numerical Methods in Engineering Practice n basic numerical methods for solving large sets of algebraic equations and boundary or initial value problems. In the context	Z	2
	ment methods are explained from the viewpoints of an engineering scientist and a mathematician.	oi dillerential equ	alions, the limite
132YPV1	Programming in C++ for Engineering Calculations 1	Z	2
	gramming, non-objective primer of the language, basic algorithms used in the engineering computing.	۷	2
133YPRK		Z	2
	Failures and Rehabilitation of Concrete Structures the description of failures of concrete structures, explanation of the causes of these failures and the design of remedial meas	_	_
	ures are also discussed. Surface repairs, strengthening of contactors, strengthening of structural elements to the effects of be		· · ·
-	e discussed. The course appropriately combines theoretical approaches with common practice.	orianing internetic and	0.100., 0.10
133YTB	Technology of Concrete II	Z	2
	concrete components and their influence on the concrete properties are presented. Furthermore, destructive and non-destruc		
	elements are introduced. The last chapters of the lectures are devoted to the real applications of concrete structures. The there	_	
by exercises, where the	students have the unique opportunity to try out the acquired knowledge in laboratory, including special tests.		
134YMOD	Numerical Modeling of Steel and Timber Structures	Z	2
Subject familiarize stude	ents with the basis of modelling od steel and timber structures. Students manage basis of simulation during the creation of sta	atic model of the s	structure as well
as the global analysis a	nd check with respect to European design codes.		
134YPDK	Additional Timber and Metal Structures	Z	2
Subject provides basic i	nformation regarding to design and application of supporting, working and industrial scaffolding systems. It is focused especi-	aly on design rule	s in accordance
with European codes ar	nd on modelling of structures.		
134YPNK	Fire Resistance of Steel and Timber Structures	Z	2
The class gives introduc	ction to fire safety and fire resistance of steel, steel-concrete composite and timber structural elements.	<u>'</u>	
102POV1	Fire and Explosion 1	Z	2
102POV1 Basic definitions of a fire	Fire and Explosion 1 a, explosion and burning. Description, analysis and modeling of the forementioned processes. Temperature distribution field a	and its influence of	n the building
102POV1 Basic definitions of a fire constructions. Pressure	Fire and Explosion 1 e, explosion and burning. Description, analysis and modeling of the forementioned processes. Temperature distribution field a distribution field and shock waves, their origination and propagation. Dynamic effects of the shock waves. Tension and stress	and its influence of	n the building
102POV1 Basic definitions of a fir constructions. Pressure materials caused by pre	Fire and Explosion 1 e, explosion and burning. Description, analysis and modeling of the forementioned processes. Temperature distribution field a distribution field and shock waves, their origination and propagation. Dynamic effects of the shock waves. Tension and stress assure waves and high temperatures. Fire extinguishing.	and its influence of s in building constr	n the building ructions and
102POV1 Basic definitions of a fire constructions. Pressure materials caused by pressure 122YMKS	Fire and Explosion 1 e, explosion and burning. Description, analysis and modeling of the forementioned processes. Temperature distribution field a distribution field and shock waves, their origination and propagation. Dynamic effects of the shock waves. Tension and stress assure waves and high temperatures. Fire extinguishing. Construction Quality Controlling	and its influence of s in building constr	n the building ructions and
102POV1 Basic definitions of a fin constructions. Pressure materials caused by pre 122YMKS The course is divided in	Fire and Explosion 1 e, explosion and burning. Description, analysis and modeling of the forementioned processes. Temperature distribution field a distribution field and shock waves, their origination and propagation. Dynamic effects of the shock waves. Tension and stress essure waves and high temperatures. Fire extinguishing. Construction Quality Controlling to two parts: quality control of the project documentation in terms of compliance with the implementing regulations and quality	and its influence of s in building construction Z	n the building ructions and 2 orks carried out.
102POV1 Basic definitions of a fin constructions. Pressure materials caused by pre 122YMKS The course is divided in The scope of the subject	Fire and Explosion 1 e, explosion and burning. Description, analysis and modeling of the forementioned processes. Temperature distribution field a distribution field and shock waves, their origination and propagation. Dynamic effects of the shock waves. Tension and stress essure waves and high temperatures. Fire extinguishing. Construction Quality Controlling to two parts: quality control of the project documentation in terms of compliance with the implementing regulations and qualit is the quality control during the construction process with a focus on the quality of project documentation, monitoring of cruci	and its influence of a in building construction in building construction in building construction in building control of the world parameters of construction in building construction in building constructio	n the building ructions and 2 orks carried out. construction and
102POV1 Basic definitions of a finconstructions. Pressure materials caused by pre 122YMKS The course is divided in The scope of the subject progress of works, man	Fire and Explosion 1 e, explosion and burning. Description, analysis and modeling of the forementioned processes. Temperature distribution field a distribution field and shock waves, their origination and propagation. Dynamic effects of the shock waves. Tension and stress essure waves and high temperatures. Fire extinguishing. Construction Quality Controlling to two parts: quality control of the project documentation in terms of compliance with the implementing regulations and qualit is the quality control during the construction process with a focus on the quality of project documentation, monitoring of cruciagement of changes during implementation. Construction quality assurance tools. Technical standards and regulations. Cons	and its influence of a in building construction quality control of the water parameters of control of quality control on quality control on quality control on quality control on quality control of the water parameters of control on quality control on quality control on quality control of the water parameters of control of the wat	n the building ructions and 2 orks carried out. construction and
102POV1 Basic definitions of a finconstructions. Pressure materials caused by preserved 122YMKS The course is divided in The scope of the subject progress of works, man and product quality assistance.	Fire and Explosion 1 e, explosion and burning. Description, analysis and modeling of the forementioned processes. Temperature distribution field and shock waves, their origination and propagation. Dynamic effects of the shock waves. Tension and stress essure waves and high temperatures. Fire extinguishing. Construction Quality Controlling to two parts: quality control of the project documentation in terms of compliance with the implementing regulations and qualite it is the quality control during the construction process with a focus on the quality of project documentation, monitoring of crucic agement of changes during implementation. Construction quality assurance tools. Technical standards and regulations. Construction of the most common errors at the level of project documentation and during the implementation of the construction.	and its influence of its in building construction quality control of the water parameters of cutruction quality control delivery.	n the building ructions and 2 orks carried out. construction and ntrol. Material
102POV1 Basic definitions of a finconstructions. Pressure materials caused by preserved to the subject of the scope of the subject progress of works, man and product quality assumments.	Fire and Explosion 1 e, explosion and burning. Description, analysis and modeling of the forementioned processes. Temperature distribution field a distribution field and shock waves, their origination and propagation. Dynamic effects of the shock waves. Tension and stress essure waves and high temperatures. Fire extinguishing. Construction Quality Controlling to two parts: quality control of the project documentation in terms of compliance with the implementing regulations and qualit is the quality control during the construction process with a focus on the quality of project documentation, monitoring of cruciagement of changes during implementation. Construction quality assurance tools. Technical standards and regulations. Cons	z z z z z z z z z z z z z z z z z z z	n the building ructions and 2 prks carried out. construction and ntrol. Material
102POV1 Basic definitions of a fin constructions. Pressure materials caused by pre 122YMKS The course is divided in The scope of the subject progress of works, man and product quality ass 123YCHS This course is designed	Fire and Explosion 1 e, explosion and burning. Description, analysis and modeling of the forementioned processes. Temperature distribution field and shock waves, their origination and propagation. Dynamic effects of the shock waves. Tension and stress essure waves and high temperatures. Fire extinguishing. Construction Quality Controlling to two parts: quality control of the project documentation in terms of compliance with the implementing regulations and qualit at is the quality control during the construction process with a focus on the quality of project documentation, monitoring of crucic agement of changes during implementation. Construction quality assurance tools. Technical standards and regulations. Consurance. Listing of the most common errors at the level of project documentation and during the implementation of the construction chemistry in Civil Engineering	z z z z z z z z z z z z z z z z z z z	n the building ructions and 2 prks carried out. construction and ntrol. Material
102POV1 Basic definitions of a fin constructions. Pressure materials caused by pre 122YMKS The course is divided in The scope of the subject progress of works, man and product quality ass 123YCHS This course is designed	Fire and Explosion 1 e, explosion and burning. Description, analysis and modeling of the forementioned processes. Temperature distribution field and shock waves, their origination and propagation. Dynamic effects of the shock waves. Tension and stress essure waves and high temperatures. Fire extinguishing. Construction Quality Controlling to two parts: quality control of the project documentation in terms of compliance with the implementing regulations and quality is the quality control during the construction process with a focus on the quality of project documentation, monitoring of crucic agement of changes during implementation. Construction quality assurance tools. Technical standards and regulations. Consurance. Listing of the most common errors at the level of project documentation and during the implementation of the construction in terms of common errors at the level of project documentation and during the implementation of the construction in terms of common errors at the level of project documentation and during the implementation of the construction in terms of common errors at the level of project documentation and during the implementation of the construction in terms of common errors at the level of project documentation and during the implementation of the construction in terms of complete the shock waves. Tension and stress is successed in the implementation and quality of the most common errors at the level of project documentation and during the implementation of the construction in terms of complete the shock waves. Tension and stress is successed in the implementation field and stress is successed.	z z z z z z z z z z z z z z z z z z z	n the building ructions and 2 prks carried out. construction and ntrol. Material
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102POV1 Basic definitions of a fire constructions. Pressure materials caused by preserved and product quality assistance of the subject touches on issues related touches on issues related to the subject to the subject to the subject to the subject introduces their production and appropriate to the subject introduces their production and appropriate example of a concrete exampl	Fire and Explosion 1 a, explosion and burning. Description, analysis and modeling of the forementioned processes. Temperature distribution field and distribution field and shock waves, their origination and propagation. Dynamic effects of the shock waves. Tension and stress issure waves and high temperatures. Fire extinguishing. Construction Quality Controlling to two parts: quality control of the project documentation in terms of compliance with the implementing regulations and qualit at is the quality control during the construction process with a focus on the quality of project documentation, monitoring of cruciagement of changes during implementation. Construction quality assurance tools. Technical standards and regulations. Consurance. Listing of the most common errors at the level of project documentation and during the implementation of the construction for the construction properties of the most common errors at the level of project documentation and during the implementation of the construction for construction for the composition, preparation, and use of basic building materials. It extends the knowledge acquired in Chemistry. Numerical Analysis of Transport Processes Firmal conditions in civil engineering problems. Basic description of porous space. Description of transport processes (heat an attical models (diffusion-, convection- and mixed type). Computational models for solution of transport problems in porous space and composition of computer codes WUFI and HEMOT, solution of simple transport problems (heat and moisture). Initial and to analysis of transport problems. Timber Buildings Timber Buildings Timber Buildings Timber Building Envelope the basics needed for the design of light outer skins, glazed roofs and skylights, it is focused on material characteristics and oblication. Students are introduced to the requirements for these constructions, the design principles and design principles of testing solution and a suitable material base Students are shown the possibilities of using gl	and its influence of a in building construction of the war in parameters of a current of the current of a cur	the building ructions and 2 orks carried out. construction and ntrol. Material 2 equations. It 2 ous materials. and application. ions principles, 2 ng technologies ated in structural 2 of glazing units, s, including a 2 rnamically a current issues services, shops, stallations and, ., it is necessary of carried out, or
102POV1 Basic definitions of a fire constructions. Pressure materials caused by pressure in the scope of the subject progress of works, man and product quality assured touches on issues related to the session of mathematic in the subjection of impacts of timber structures: (i) and building physics could building physics co	Fire and Explosion 1 a, explosion and burning. Description, analysis and modeling of the forementioned processes. Temperature distribution field and shock waves, their origination and propagation. Dynamic effects of the shock waves. Tension and stress issure waves and high temperatures. Fire extinguishing. Construction Quality Controlling to two parts: quality control of the project documentation in terms of compliance with the implementing regulations and qualit is the quality control during the construction process with a focus on the quality of project documentation, monitoring of cruci agement of changes during implementation. Construction quality assurance tools. Technical standards and regulations. Consurance. Listing of the most common errors at the level of project documentation and during the implementation of the construction for the construction in civil Engineering for students interested in the natural sciences, combining theoretical and practical skills in building chemistry, without chemic dot to the composition, preparation, and use of basic building materials. It extends the knowledge acquired in Chemistry. Numerical Analysis of Transport Processes In a conditions in civil engineering problems. Basic description of porous space. Description of transport processes (heat an attical models (diffusion-, convection- and mixed type). Computational models for solution of transport problems in porous space and composition of computer codes WUF1 and HEMOT, solution of simple transport problems (heat and moisture). Initial and to analysis of transport problems. Timber Buildings complex overview on energy efficient timber structures. Basic theoretical and design principals are presented. The lectures are neavy timber skeleton systems, (ii) light timber structures based on 2x4. (iii) CLT, (iv) log house. All technologies of timber structured of the design of light outer skins, glazed roofs and skylights, it is focused on material characteristics and oblication. Students are introduced to the require	and its influence of a in building construction of the war in parameters of a current of the current of a cur	the building ructions and 2 orks carried out. construction and ntrol. Material 2 equations. It 2 ous materials. and application. ions principles, 2 ng technologies ated in structural 2 of glazing units, s, including a 2 rnamically a current issues services, shops, stallations and, ., it is necessary of carried out, or

124YRHS Reconstruction of Historical Building Structures	Z	2
In the period from the second half of the 19th century by 1960, more than 250 thousand of two- to five-story brick apartment (mainly rental) ho	ouses in traditional brick t	echnology were
constructed in the Czech Republic. Brick buildings from this period were built according to regulations, building codes and laws from the turn of	the 19th and 20th centur	ries. Multi-storey
brick tenement houses do not meet the current thermal, acoustic and other requirements, the requirements of a dynamically developing socie	ty to the required extent,	and in many
cases require regeneration and modernization interventions, including the replacement of non-compliant and out-of-date structures and equipm	ent enabling their further	use. The course
is focused on the current issue of renewal, reconstruction and modernization of brick multi-storey rental apartment buildings, on historical structur	es and materials, the issu	e of degradation
and aging of structures and materials of historic brick residential buildings, their residual life, failures and reconstruction of historical buildings	and their parts. Furthern	nore, the course
is focused on the issue of improving the well-being of the internal environment, the replacement of finishing structures, opening fillings, etc. as	s an integral part of the m	nodernization of
these buildings.		
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	-	=
air-handling unit and design of indoor systems.	, amount or vortilation at	i, doolgii oi
	7	
	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		
their own business plan for a selected business activity according to the specified syllabus. They draw up a plan for a start-up business. Entre	preneurship 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 bus	siness plan in power poin	t in front of the
auditorium.		
132YPM1 Computer Analysis of Structures 1	Z	2
Static model of a structure. Computer codes RFEM-Dlubal, SCIA Engineer.	' '	
132YSHK Statics and Reconstruction of Historical Structures	Z	2
Short overview of historical vaults and roof trusses. Static behaviour and most frequent causes of failure. Methods of reconstruction, changes	-	_
frequent causes of failure of panel buildings. Visit to the historical part of Prague Castle.	iii louridation conditions	moraded. Wost
	7	
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 and the selected computer programs for structural modeling.	_	
choosing a suitable model. Practical procedures for the design and assessment of reinforced concrete structures using software tools. Princip	les and methods of inter	pretation and
verification of results. Practical examples.		
133YBSV Concretes with Special Properties	Z	2
High-strength concrete, fibre concrete, self-compacting concrete, shotcrete and fibreconcretes, lightweight concrete, heavyweight concrete; the	ir properties and applica	tions in practice.
New findings in technology.		
133YMVB Concrete and Masonry Structures 1	Z	2
The content of the subject will be selected problems from the following areas: Reinforcement of discontinuities of reinforced concrete structure	es. Introduction to nonline	ear modeling of
reinforced concrete structures. Preparation of input data for numerical models. Design of structures using MATLAB. Presentation of selected p		- 1
structures.		
133YPNB Fire desgn og concrete and mnsory structures	7	2
The course is focused on fire resistance of concrete and masonry structures: concrete and concrete structures exposed to fire, design rules, the	1 – 1	_
	ierriai ariaiysis, idaus, ui	esign principles,
design methods, material properties of concrete and steel reinforcement at high temperatures, fire design of masonry structures.		
134YDUV Timber and Sustainable Construction	_ Z	2
Introduction to sustainable use of wood in construction with respect to previous courses. Theoretical methods of structural design and design	of structures composed	from different
materials. Principles of strengthening and repairing of timber structures.		
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, s		
properties of glass as structural material will be presented in comparison with other basic building materials, together with selected examples	of glass/glazing applicat	ions. Design
details and connecting technology, relevant technical regulations, specification and current methods applied in design will be described. Work		
for better understanding, and design project will help to fix specific knowledge.	ed examples will accomp	any the lectures
134YTSK Thin-Walled and Composite Structures	ed examples will accomp	any the lectures
	· · ·	•
ļ ·	Z	2
The course includes advanced analysis and structural design of slender sections and cold-formed sections. Advanced structural design of ste	Z pel-concrete composite is	2 also included.
The course includes advanced analysis and structural design of slender sections and cold-formed sections. Advanced structural design of steel 135YING Engineering geology	eel-concrete composite is	2 also included.
The course includes advanced analysis and structural design of slender sections and cold-formed sections. Advanced structural design of ste 135YING Engineering geology Engineering geological survey methods. Geological and engineering geological maps and profiles. Foundation soils in terms of engineering geological survey methods.	eel-concrete composite is	2 also included. 2 Aggressive
The course includes advanced analysis and structural design of slender sections and cold-formed sections. Advanced structural design of ste 135YING Engineering geology Engineering geological survey methods. Geological and engineering geological maps and profiles. Foundation soils in terms of engineering g waters. Rock mass - areas of discontinuities, their evaluation. Deposits of natural building materials. Landslides and slope protection. Engineering the course includes advanced structural design of steeping sections.	eel-concrete composite is	2 also included. 2 Aggressive
The course includes advanced analysis and structural design of slender sections and cold-formed sections. Advanced structural design of ste 135YING Engineering geology Engineering geological survey methods. Geological and engineering geological maps and profiles. Foundation soils in terms of engineering geological survey methods.	eel-concrete composite is	2 also included. 2 Aggressive
The course includes advanced analysis and structural design of slender sections and cold-formed sections. Advanced structural design of ste 135YING Engineering geology Engineering geological survey methods. Geological and engineering geological maps and profiles. Foundation soils in terms of engineering g waters. Rock mass - areas of discontinuities, their evaluation. Deposits of natural building materials. Landslides and slope protection. Engineering the course includes advanced structural design of steeping sections.	eel-concrete composite is	2 also included. 2 Aggressive
The course includes advanced analysis and structural design of slender sections and cold-formed sections. Advanced structural design of ste 135YING Engineering geology Engineering geological survey methods. Geological and engineering geological maps and profiles. Foundation soils in terms of engineering g waters. Rock mass - areas of discontinuities, their evaluation. Deposits of natural building materials. Landslides and slope protection. Engineer of civil engineering structures. Challenges of urban geology. Engineering geology in environmental design and protection.	z Z eel-concrete composite is Z eology and hydrogeology ring geological survey fo	2 also included. 2 Aggressive r different types
The course includes advanced analysis and structural design of slender sections and cold-formed sections. Advanced structural design of ste 135YING Engineering geology Engineering geological survey methods. Geological and engineering geological maps and profiles. Foundation soils in terms of engineering g waters. Rock mass - areas of discontinuities, their evaluation. Deposits of natural building materials. Landslides and slope protection. Enginee of civil engineering structures. Challenges of urban geology. Engineering geology in environmental design and protection. 135YPZU Underground structures in urban areas	z Z eel-concrete composite is Z eology and hydrogeology ring geological survey fo	2 also included. 2 Aggressive r different types
The course includes advanced analysis and structural design of slender sections and cold-formed sections. Advanced structural design of ste 135YING Engineering geology Engineering geological survey methods. Geological and engineering geological maps and profiles. Foundation soils in terms of engineering gwaters. Rock mass - areas of discontinuities, their evaluation. Deposits of natural building materials. Landslides and slope protection. Engineer of civil engineering structures. Challenges of urban geology. Engineering geology in environmental design and protection. 135YPZU Underground structures in urban areas Geotechnical investigation, basic conceptions of rock classification and properties evaluation, laboratory and field testing, elements of calculate construction, technology of underground constructions	eel-concrete composite is Z eology and hydrogeology ring geological survey fo Z ions in rock mechanics a	2 also included. 2 Aggressive r different types 2 nd underground
The course includes advanced analysis and structural design of slender sections and cold-formed sections. Advanced structural design of ste 135YING Engineering geology Engineering geological survey methods. Geological and engineering geological maps and profiles. Foundation soils in terms of engineering waters. Rock mass - areas of discontinuities, their evaluation. Deposits of natural building materials. Landslides and slope protection. Enginee of civil engineering structures. Challenges of urban geology. Engineering geology in environmental design and protection. 135YPZU Underground structures in urban areas Geotechnical investigation, basic conceptions of rock classification and properties evaluation, laboratory and field testing, elements of calculat construction, technology of underground constructions 135YVZK Computer analysis in foundation engineering	eel-concrete composite is Z eology and hydrogeology ring geological survey fo Z ions in rock mechanics a	2 also included. 2 Aggressive r different types 2 nd underground
The course includes advanced analysis and structural design of slender sections and cold-formed sections. Advanced structural design of ste 135YING Engineering geology Engineering geological survey methods. Geological and engineering geological maps and profiles. Foundation soils in terms of engineering gwaters. Rock mass - areas of discontinuities, their evaluation. Deposits of natural building materials. Landslides and slope protection. Engineer of civil engineering structures. Challenges of urban geology. Engineering geology in environmental design and protection. 135YPZU Underground structures in urban areas Geotechnical investigation, basic conceptions of rock classification and properties evaluation, laboratory and field testing, elements of calculate construction, technology of underground constructions	eel-concrete composite is Z eology and hydrogeology ring geological survey fo Z ions in rock mechanics a	2 also included. 2 Aggressive r different types 2 nd underground

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

TV1	Physical Education	Z	0
TV2	Physical Education	Z	0

Name of the block: Jazyky

Minimal number of credits of the block: 3

The role of the block: J

Code of the group: BF20190201 J

Name of the group: Povinn volitelný jazyk, 2. semestr

Requirement credits in the group: In this group you have to gain at least 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) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
104YCA1	English 1 Hana Horká, Petra Martincová, Petra Florianová, Sandra Giormani, Svatava Boboková Bartíková, V ra ermáková, Karolína Synková, Alexandra Steinerová, Elena Da eva, Svatava Boboková Bartíková Sandra Giormani (Gar.)	Z	1	2C	Z,L	J
104YCN1	German 1 Svatava Boboková Bartíková Svatava Boboková Bartíková Svatava Boboková Bartíková (Gar.)	Z	1	2C	Z,L	J

Characteristics of the courses of this group of Study Plan: Code=BF20190201_J Name=Povinn volitelný jazyk, 2. semestr

104YCA1 | English 1 | Z | 1 | English 1 | Course code: 104Y CA1 Scope: 0 + 2 (practical sessions) Number of credits: 1 Final assessment: credit 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. Literature: Horká Hana, Giormani Sandra, Martincová Petra, Nivenová Renata: Professional English for Civil Engineering (Units 1 - 5)

104YCN1 | German 1 | Z | 1

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

Code of the group: BF20190302_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) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
104YC2A	English 2 Hana Horká, Petra Martincová, Petra Florianová, Sandra Giormani, Svatava Boboková Bartíková, V ra ermáková, Karolína Synková, Alexandra Steinerová, Elena Da eva, Svatava Boboková Bartíková Sandra Giormani (Gar.)	Z,ZK	2	2C		J
104YC2N	German 2 Svatava Boboková Bartíková Sandra Giormani Svatava Boboková Bartíková (Gar.)	Z,ZK	2	2C		J

Characteristics of the courses of this group of Study Plan: Code=BF20190302_J Name=Povinn volitelný jazyk, 3. semestr

104YC2A

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)

Deutsch im Bauwesen

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:

Name of the block: Povinn volitelné p edm ty, doporu ení S1

Minimal number of credits of the block: 18

The role of the block: S1

Code of the group: BC202007_1

Name of the group: Stavební inženýrství, specializace Pozemní stavby, projekt 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) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
123P02C	Structural design project 2C Eva Vejmelková, Vojt ch Pommer, Zbyšek Pavlík, Martin Böhm Alena Vimmrová	KZ	6	4C	Z	S1
124P02C	Structural design project 2C Lenka Hanzalová, Ji í Pazderka, David Šulc, Tomáš ejka, Eva Burgetová Ji í Pazderka Ji í Pazderka (Gar.)	KZ	6	4C	Z	S1
125P02C	Structural design project 2C Stanislav Frolík Stanislav Frolík (Gar.)	KZ	6	4C	Z	S1
133P02C	Structural design project 2C Jitka Vašková	KZ	6	4C	Z	S1
134P02C	Structural design project 2C Michal Jandera Michal Jandera (Gar.)	KZ	6	4C	Z	S1
135P02C	Structural design project 2C Jan Salák, Ji í Pazderka, Jan Kos, Jan Pruška Jan Pruška	KZ	6	4C	Z	S1

Characteristics of the courses of this group of Study Plan: Code=BC202007_1 Name=Stavební inženýrství, specializace Pozemní stavby, projekt

123P02C	Structural design project 2C	KZ	6
n accordance with	the project proposal.		'
124P02C	Structural design project 2C	KZ	6
Converting an arch	itectural study of medium-scale building into a detailed design of a building structure based on static analysis, interaction of load-	bearing and non-	load-bearing
lements and build	ling physics. Focus on complex approach to practical design, analysis and optimalization of a building structures. Design of varian	its of the load-bea	ring system,
reliminary static a	nalysis (calculation of load-bearing elements - slabs, columns, walls, etc), calculation of foundations, design of structures on the l	building envelope	with respect to
nermal protection	of buildings, building physics, fire protection of buildings and protection against water and soil moisture. Elaboration of detailed draw	ings including floc	or plans, sectio
and details.			
125P02C	Structural design project 2C	KZ	6
ndependent proje	ct in the field of building services systems. Students choose out of the topics on offer and work on the text, calculations and graph	ical form of the pr	oject.
133P02C	Structural design project 2C	KZ	6
laboration of the	structural part of the project documentation for the given structure (part of the structure). The design of the selected variant of the	structure with rec	ard to the
equirements of ot	ner professions. Structural analysis and drawing documentation to the extent specified during consultations. The Department of A	rchitectural Engin	eering (K124)
and Geotechnics (K135) collaborate in teaching in the course.		
134P02C	Structural design project 2C	KZ	6
Design of steel / tir	nber load bearing building structure according to external requirements in relation to interaction of load bearing and final completion	on structural elem	ents. The proje
s assigned by the	seminar leader.		
		147	_
135P02C	Structural design project 2C	KZ	6

Code of the group: BC202008_1

Name of the group: Stavební inženýrství, specializace Pozemní stavby, bakalá ská práce Requirement credits in the group: In this group you have to gain at least 12 credits Requirement courses in the group: In this group you have to complete at least 1 course

Credits in the group: 12 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
102BAPC	Bachelor Thesis Václav Nežerka Ji í Novák	Z	12	10C	L,Z	S1
123BAPC	Bachelor Thesis Milena Pavlíková, Martina Záleská, Alena Vimmrová, Eva Vejmelková, Zbyšek Pavlík Jan Pruška Jan Pruška (Gar.)	Z	12	10C	L,Z	S1
124BAPC	Bachelor Thesis Jan R ži ka, Petr Hájek, Malila Noori, Lenka Hanzalová, Jaroslav Vychytil, B la Stib rková, Ji í Pazderka, Ji í Nová ek, Kamil Stan k, Jan Pruška Jan Pruška (Gar.)	Z	12	10C	L,Z	S1
125BAPC	Bachelor Thesis Stanislav Frolík Stanislav Frolík (Gar.)	Z	12	10C	L,Z	S1
132BAPC	Bachelor Thesis Tomáš Koudelka, Aleš Jíra, Michal Šejnoha, Martin Došká, Anna Ku erová Aleš Jíra	Z	12	10C	L,Z	S1
133BAPC	Bachelor Thesis	Z	12	10C	L,Z	S1
134BAPC	Bachelor Thesis Ji í Mareš Michal Jandera Michal Jandera (Gar.)	Z	12	10C	L,Z	S1
135BAPC	Bachelor Thesis Jan Salák	Z	12	10C	L,Z	S1

Characteristics of the courses of this group of Study Plan: Code=BC202008_1 Name=Stavební inženýrství, specializace Pozemní stavby, bakalá ská práce

Stavby, bakala Sk	a prace		
102BAPC	Bachelor Thesis	Z	12
in accordance with the	thesis proposal		
123BAPC	Bachelor Thesis	Z	12
In accordance with the	thesis proposal	'	
124BAPC	Bachelor Thesis	Z	12
The topics of bachelor	s theses are based on the needs of practice or the scientific research activities of the department, scope and difficulty corresp	ond to the studer	nt's knowledge
acquired during bache	or's studies. The supervisor of the bachelor's thesis can designate additional consultants to the student.		
125BAPC	Bachelor Thesis	Z	12
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	s. The thesis can
cover theoretical aspe	cts or to focus on practical application on an object within building services systems. Students consult the supervisor and spec	alists from other	departments.
The thesis is presente	d in front of the commission.		
132BAPC	Bachelor Thesis	Z	12
The assignment of the	final thesis is always individual based on the agreement of the teacher and the student. The vast majority of assignments are	connected with th	e scientific and
research activities of the	e respective employee. The output of the solution may be a brief research study of the given problem, experimental activity, pr	ogramming and o	others according
to the respective assig	nment.		
133BAPC	Bachelor Thesis	Z	12
A bachelor thesis is the	e qualification thesis of a bachelor's degree. It can take the form of processing the structural part of the building design project	or research study	y on the topic of
designing and applicat	ion of a structural element with a variant comparative analysis or parametric study or performing and analysing experiments, e	tc.	
134BAPC	Bachelor Thesis	Z	12
In this course, student	formulates a bachelor's thesis that is necessary to reach the bachelor's degree. This course is focused on steel or timber structure.	tural design.	
135BAPC	Bachelor Thesis	Z	12
The bachelor thesis co	ncludes the bachelor studies. The student demonstrates that he/she can apply the knowledge acquired during the study on a sp	ecific project. The	bachelor thesis
1			

List of courses of this pass:

is related to selected subjects of the study plan. For students of C spec.

Code	Name of the course	Completion	Credits				
100ODPR	Industrial Training (3 weeks)	Z	0				
Professional pr	Professional practice is an important part of academic education in undergraduate degree programmes. The student will gain a basic understanding of duties and professional						
respoi	nsibilities. The professional practice evaluates the sum of all knowledge acquired through previous theoretical studies and is a proof o	f their acquisition.					
101KG01	Constructive Geometry	Z,ZK	5				
Projections and p	projective methods. Axonometry. Oblique projection. Orthogonal axonometry. Displaying prisms, cones, cylinders, pyramids, balls. Sim	ple problems in ax	conometry.				
Basics of lighting	of solids and groupes of solids. Perspective projection. Curves, parametrisation. Frenet's trihedron, torsion and curvature. Helical su	faces. Quadrics. S	urfaces in				
	building industry.						
101MA01	Mathematics 1	Z,ZK	6				
	. https://mat.fsv.cvut.cz/bubenik/mat1detail.htm		,				
101MA02	Mathematics 2	Z,ZK	6				
	https://mat.fsv.cvut.cz/vyuka/bakalari/eng/ls/MT02/		1				
101MA03	Mathematics 3	Z,ZK	6				
	https://mat.fsv.cvut.cz/vvuka/bakalari/eng/zs/		1				

101YAST	Applied Statistics	Z	2
Basic notions and	terminology, random variable, descriptive and inferential statistics. Discrete and continuous random variables, normal distribution, log	-normal distributio	n. Statistical
4000 400	methods, theory of estimation, hypotheses testing, simple linear regression.	7	40
102BAPC	Bachelor Thesis in accordance with the thesis proposal	Z	12
102FYI	Physics	Z,ZK	4
	nysics course for students of the study programmes Civil Engineering; Management and Economics in Construction. The course focus	,	
	he following areas are covered in the course: Mechanics of material points (particles) and deformable bodies. Discrete and continuou		
and dynamics	of a material point (particle). Mechanical force fields. Gravitational field. Mechanical vibrations. Material deformation. Elastic waves. Ac	coustics. Hydrome	chanics.
	Fundamentals of thermodynamics. Heat transfer.		
102POV1	Fire and Explosion 1	Z	2
	of a fire, explosion and burning. Description, analysis and modeling of the forementioned processes. Temperature distribution field and		- 1
constructions. Pr	essure distribution field and shock waves, their origination and propagation. Dynamic effects of the shock waves. Tension and stress i materials caused by pressure waves and high temperatures. Fire extinguishing.	n building constru	ctions and
102YMES	Measurement in Civil Engineering	Z	2
	rse, students will learn about modern measuring methods in the construction industry. In practical laboratory tasks, groups will try to		
•	paratus to determine elastic and deformation properties of building materials and structures, measurement and spectral analysis of so		- 1
measurement of op-	otical properties of materials, transmittance and reflectance of materials, determination of photometric and spectral characteristics of	light sources, mea	surement of
	thermophysical parameters of building materials		ı
104YC2A	English 2	Z,ZK	2
· ·	code: 104YC2A Scope: 0 + 2 (practical sessions) Number of credits: 1 Final assessment: credit and exam The aim of the compulsory	•	
-	lexis and grammar within the scope of the chosen field of study and university studies in general (Academic English); the overall focus iical style) and communicative competence within the construction industry. The course also seeks to teach students to read technica	· ·	1
	written discourse and to express themselves in writing on issues in their field of study. The end of course requirements are a credit ar		
	Horká Hana, Giormani Sandra, Martincová Petra, Nivenová Renata : Professional English for Civil Engineering (Units 6 10)	
104YC2N	German 2	Z,ZK	2
· · ·	urse - German Language for Civil Engineering is aimed at practising professional vocabulary within the scope of the construction indust	-	
texts, and learning	the necessary presentation skills in order to present all relevant professional issues. The end-of-course requirement is a credit. Litera Deutsch im Bauwesen	ature: A.Hanakova	, J.Dressei:
104YCA1	English 1	Z	1
	pde: 104Y CA1 Scope: 0 + 2 (practical sessions) Number of credits: 1 Final assessment: credit The aim of the compulsory English cours		knowledge
	nmar within the scope of the chosen field of study and university studies in general (Academic English); the overall focus is on profess		
	communicative competence within the construction industry. The course also seeks to teach students to read technical literature and to	-	
written discourse a	nd to express themselves in writing on issues in their field of study. The end of course requirements are a credit. Literature: Horká Hana,	Giormani Sandra	, Martincová
404)/0014	Petra, Nivenová Renata : Professional English for Civil Engineering (Units 1 - 5)	7	
104YCN1	German 1 urse - German Language for Civil Engineering is aimed at practising professional vocabulary within the scope of the construction indust	ry understanding	nrofessional
	the necessary presentation skills in order to present all relevant professional issues. The end-of-course requirement is a credit. Litera		
,	Deutsch im Bauwesen		,
105SVAI	Social Sciences and Architecture	Z,ZK	5
-	ines the teaching of several social sciences: economics and economic policies, political science, political philosophy and law, with an		
	ne section devoted to economics, the basic categories of the market economy, the foundations of economic policy and the basic conce	-	
· ·	eoretical interpretation is effectively combined with practical examples from economic reality. In the lectures devoted to law, a brief over institutions is supplemented by a well-founded interpretation of the constitution, human rights and the labor code. Great attention is		
	d the Construction Act. In the political science lectures, the political development in ancient times is described in an engaging way, the		
	acy and totalitarianism are clarified. The series of lectures on the history of architecture and construction provides a comprehensive in		- 1
	architecture from antiquity to postmodernism and deconstruction.		
122TSC	Construction Technology C	Z,ZK	6
122YBPP	Construction Safety Code	Z	2
	safety laws. Works in the trenches. Works at the height. Coordinator H&S when preparing and/or building constructions on a bu		
122YMKS	Construction Quality Controlling	Z	2
	ed into two parts: quality control of the project documentation in terms of compliance with the implementing regulations and quality of ubject is the quality control during the construction process with a focus on the quality of project documentation, monitoring of crucial p		
•	, management of changes during implementation. Construction quality assurance tools. Technical standards and regulations. Constru		
	uct quality assurance. Listing of the most common errors at the level of project documentation and during the implementation of the c		
123BAPC	Bachelor Thesis	Z	12
	In accordance with the thesis proposal		
123CHE	Chemistry	Z,ZK	4
	neral chemistry - chemical bond, compounds, reactions, equilibrium. Chemistry of environment - water, atmosphere, pedosphere. Che		
	glass, ceramic, metals, natural polymers, wood, synthetic polymers on C and Si basis. Introduction to degradation of building materia		
123MAI The course provide	Materials Engineering les information on the building materials characterization and principles of designing and developing new types of materials having di	Z,ZK	5 for specific
	building applications and structures.		
123P02C	Structural design project 2C	KZ	6
	In accordance with the project proposal.		<u> </u>
123SH01	Building Materials	Z,ZK	5
Building materials	- basis course. Clasification of the materials. Structure of materials. Main properties of materials. Application of materials in building	constructions. Intro	oduction to
1001/01:0	material testing.		
123YCHS	Chemistry in Civil Engineering	Z	2
THIS COURSE IS DE	signed for students interested in the natural sciences, combining theoretical and practical skills in building chemistry, without chemical touches on issues related to the composition, preparation, and use of basic building materials. It extends the knowledge acquired in		uauviis. Il

123YNTP	Numerical Analysis of Transport Processes	Z	2
	grothermal conditions in civil engineering problems. Basic description of porous space. Description of transport processes (heat and athematical models (diffusion-, convection- and mixed type). Computational models for solution of transport problems in porous space ba		
	acture and composition of computer codes WUFI and HEMOT, solution of simple transport problems (heat and moisture). Initial and b	•	
	significance and impact to analysis of transport problems.	,	., ., .,
123YTVM	Production technology of building materials	Z	2
	Basic building materials, different types of the production technology, energy consumption of the production, storage and transport, sa	afety at work.	
124BAPC	Bachelor Thesis	Z	12
The topics of bac	nelor's theses are based on the needs of practice or the scientific research activities of the department, scope and difficulty corresponacquired during bachelor's studies. The supervisor of the bachelor's thesis can designate additional consultants to the stude		knowledge
124KK01	Non-Load Bearing Construction	Z,ZK	7
	he subject deals with the complex design of indoor and high-rise buildings, especially the influence of marginal conditions on the cho		
	n emphasis on envelope structures. In the second, more extensive part, the principles of solutions for roofs, perimeter walls, opening		
	structures for various types of buildings are clearly discussed.		
124P01C	Structural design project 1	KZ	6
_	nitectural study of a smaller or medium-sized building for housing, administration, education, culture or sports into a detailed design o	_	
=	raction of load-bearing and non-load-bearing elements and building physics. Focus on complex approach to practical design, analysis of variants of the load-bearing system, preliminary static analysis (calculation of load-bearing elements - slabs, columns, walls, etc), ca	-	- 1
•	the building envelope with respect to thermal protection of buildings, building physics, fire protection of buildings and protection again		
	Elaboration of detailed drawings including floor plans, sections and details.		
124P02C	Structural design project 2C	KZ	6
_	chitectural study of medium-scale building into a detailed design of a building structure based on static analysis, interaction of load-b	-	- 1
	ilding physics. Focus on complex approach to practical design, analysis and optimalization of a building structures. Design of variants analysis (calculation of load-bearing elements - slabs, columns, walls, etc), calculation of foundations, design of structures on the bui		
-	of buildings, building physics, fire protection of buildings and protection against water and soil moisture. Elaboration of detailed drawings		
·	and details.	0 1	,
124PBZN	Fire Protection and Healthy Buildings	Z,ZK	6
	s of fire - course of fire, burning process, fire loading; legislation and European Standards; fire safety solutions - fire project, requiremen		- 1
	istance separation, fire-fighting equipment; fire behaviour of the most used materials (wood, steel, concrete, plastics); protection of bueting, plasters and sprays, coatings, impregnates of wood, encasements, glued facings of mineral fibres); sandwiches from fire point of	_	- 1
•	passive protection of building structures - fire walls, fire glazed structures, fire ceiling, draft stops and seals; repressive measures - el		- 1
	ces, smoke extract, hydrant systems. Healthy Buildings Constituents of indoor microclimate, hazardous substances (VOCs, HFRs, he	_	
aerosols, radion	uclides, etc.), their sources and health effects. Influence of building structures and materials on quality of indoor microclimate. Design	of buildings with	respect to
1010000	optimisation of indoor microclimate.	7.71	
124PDRC	Failures, Deteriorations, Renovations		
	, ,	Z,ZK	3
In the lecture ser	ies, students are introduced to issues related to the protection of (not only) historic and heritage-protected buildings. In particular, the	se are defects and	d failures of
In the lecture ser buildings, load effe	, ,	se are defects and eliability; mechani	d failures of cal, physical,
In the lecture ser buildings, load effe chemical degradati	eres, students are introduced to issues related to the protection of (not only) historic and heritage-protected buildings. In particular, the cts and influences from the point of view of load history; non-force effects and influences, effects of forced deformation; durability and r on and corrosion processes; failures, reconstruction and rehabilitation of foundation structures, brick structures, concrete structures (rein structures, wooden structures of buildings, protection of buildings against increased humidity and diagnostics of buildings	se are defects and eliability; mechani oforced concrete), p	d failures of cal, physical,
In the lecture ser buildings, load effe chemical degradati	ies, students are introduced to issues related to the protection of (not only) historic and heritage-protected buildings. In particular, the cts and influences from the point of view of load history; non-force effects and influences, effects of forced deformation; durability and ron and corrosion processes; failures, reconstruction and rehabilitation of foundation structures, brick structures, concrete structures (rein structures, wooden structures of buildings, protection of buildings against increased humidity and diagnostics of buildings Building Structures 3C	se are defects and eliability; mechani iforced concrete), l Z,ZK	d failures of cal, physical, prefabricated
In the lecture ser buildings, load effe chemical degradati 124PS3C The subject deals	les, students are introduced to issues related to the protection of (not only) historic and heritage-protected buildings. In particular, the cts and influences from the point of view of load history; non-force effects and influences, effects of forced deformation; durability and ron and corrosion processes; failures, reconstruction and rehabilitation of foundation structures, brick structures, concrete structures (rein structures, wooden structures of buildings, protection of buildings against increased humidity and diagnostics of buildings Building Structures 3C with the complex design of load-bearing structures of roofing, indoor and multi-storey buildings and the structural-static effect of the particular in the structural static effect.	se are defects and eliability; mechani (forced concrete),	d failures of cal, physical, prefabricated 3
In the lecture ser buildings, load effe chemical degradati 124PS3C The subject deals	les, students are introduced to issues related to the protection of (not only) historic and heritage-protected buildings. In particular, the cts and influences from the point of view of load history; non-force effects and influences, effects of forced deformation; durability and ron and corrosion processes; failures, reconstruction and rehabilitation of foundation structures, brick structures, concrete structures (reir structures, wooden structures of buildings, protection of buildings against increased humidity and diagnostics of buildings Building Structures 3C with the complex design of load-bearing structures of roofing, indoor and multi-storey buildings and the structural-static effect of the particular is focused on span structures of sloping roofs and hall buildings and on structural-static problems of multi-storey buildings. In the second	se are defects and eliability; mechani (forced concrete),	d failures of cal, physical, prefabricated 3
In the lecture ser buildings, load effe chemical degradati 124PS3C The subject deals	les, students are introduced to issues related to the protection of (not only) historic and heritage-protected buildings. In particular, the cts and influences from the point of view of load history; non-force effects and influences, effects of forced deformation; durability and ron and corrosion processes; failures, reconstruction and rehabilitation of foundation structures, brick structures, concrete structures (rein structures, wooden structures of buildings, protection of buildings against increased humidity and diagnostics of buildings Building Structures 3C with the complex design of load-bearing structures of roofing, indoor and multi-storey buildings and the structural-static effect of the particular in the structural static effect.	se are defects and eliability; mechani (forced concrete),	d failures of cal, physical, prefabricated 3
In the lecture ser buildings, load effe chemical degradati 124PS3C The subject deals part, the attention 124PSI1	les, students are introduced to issues related to the protection of (not only) historic and heritage-protected buildings. In particular, the cts and influences from the point of view of load history; non-force effects and influences, effects of forced deformation; durability and ron and corrosion processes; failures, reconstruction and rehabilitation of foundation structures, brick structures, concrete structures (rein structures, wooden structures of buildings, protection of buildings against increased humidity and diagnostics of buildings Building Structures 3C with the complex design of load-bearing structures of roofing, indoor and multi-storey buildings and the structural-static effect of the particular of the particular of sloping roofs and hall buildings and on structural-static problems of multi-storey buildings. In the seabout the design of prefabricated indoor and multi-storey structures.	se are defects and eliability; mechaninforced concrete), land a Z,ZK perimeter roof she cond part, studen	d failures of cal, physical, prefabricated 3 III. In the first ts will learn
In the lecture ser buildings, load effect chemical degradation of the subject deals part, the attention 124PSI1 The concept of destructural system,	les, students are introduced to issues related to the protection of (not only) historic and heritage-protected buildings. In particular, the cts and influences from the point of view of load history; non-force effects and influences, effects of forced deformation; durability and ron and corrosion processes; failures, reconstruction and rehabilitation of foundation structures, brick structures, concrete structures (rein structures, wooden structures of buildings, protection of buildings against increased humidity and diagnostics of buildings Building Structures 3C with the complex design of load-bearing structures of roofing, indoor and multi-storey buildings and the structural-static effect of the particular of the structures of sloping roofs and hall buildings and on structural-static problems of multi-storey buildings. In the seabout the design of prefabricated indoor and multi-storey structures. Building Structures 11 Sign of building structures with a comprehensive consideration of the functional requirements imposed on individual elements. Requirements interaction of elements, spatial effect of the structural system. Vertical load-bearing structures (functions, requirements, principles of	se are defects and eliability; mechaninforced concrete), Z,ZK perimeter roof she cond part, studen Z ements for buildin the structural des	d failures of cal, physical, prefabricated 3 III. In the first ts will learn 4 g structures, ign of walls,
In the lecture ser buildings, load effect chemical degradation of the subject deals part, the attention 124PSI1 The concept of destructural system, columns), floor structurals	les, students are introduced to issues related to the protection of (not only) historic and heritage-protected buildings. In particular, the cts and influences from the point of view of load history; non-force effects and influences, effects of forced deformation; durability and ron and corrosion processes; failures, reconstruction and rehabilitation of foundation structures, brick structures, concrete structures (rein structures, wooden structures of buildings, protection of buildings against increased humidity and diagnostics of buildings Building Structures 3C with the complex design of load-bearing structures of roofing, indoor and multi-storey buildings and the structural-static effect of the particular of the graph of the design of prefabricated indoor and multi-storey structures. Building Structures 11 Sign of building structures with a comprehensive consideration of the functional requirements imposed on individual elements. Requirements interaction of elements, spatial effect of the structural system. Vertical load-bearing structures (functions, requirements, principles of unctures (functions, requirements, principles of the structural design of vaults, wooden ceilings, reinforced concrete ceilings, ceramic concretes the contraction of the structural design of vaults, wooden ceilings, reinforced concrete ceilings, ceramic concretes the contraction of the structural design of vaults, wooden ceilings, reinforced concrete ceilings, ceramic contractions.	se are defects and eliability; mechaninforced concrete), land a Z,ZK perimeter roof she cond part, studen Z ements for buildin the structural despondered ceilings, st	d failures of cal, physical, prefabricated 3 III. In the first ts will learn 4 g structures, ign of walls, eel and steel
In the lecture ser buildings, load effechemical degradation of the subject deals part, the attention of the structural system, columns), floor structured structured system, concrete	les, students are introduced to issues related to the protection of (not only) historic and heritage-protected buildings. In particular, the cts and influences from the point of view of load history; non-force effects and influences, effects of forced deformation; durability and ron and corrosion processes; failures, reconstruction and rehabilitation of foundation structures, brick structures, concrete structures (rein structures, wooden structures of buildings, protection of buildings against increased humidity and diagnostics of buildings. Building Structures 3C with the complex design of load-bearing structures of roofing, indoor and multi-storey buildings and the structural-static effect of the particular of the design of prefabricated indoor and multi-storey structures. Building Structures 1I sign of building structures with a comprehensive consideration of the functional requirements imposed on individual elements. Requirements interaction of elements, spatial effect of the structural system. Vertical load-bearing structures (functions, requirements, principles of actures (functions, requirements, principles of the structural design of vaults, wooden ceilings, reinforced concrete ceilings, ceramic concrete (ellings). Expansion joints in load-bearing systems. Structural systems of single and multi-storey buildings, structural systems of load-bearing systems of load-bearing systems of load-bearing systems of single and multi-storey buildings, structural systems of load-bearing systems of single and multi-storey buildings.	se are defects and eliability; mechaninforced concrete), land a Z,ZK perimeter roof she cond part, studen Z ements for buildin the structural despincerete ceilings, stang-span structures	d failures of cal, physical, prefabricated 3 III. In the first ts will learn 4 g structures, ign of walls, eel and steel s.
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In the lecture ser buildings, load effechemical degradation of the subject deals part, the attention of the structural system, columns), floor structural structural system, columns), structural system, concrete structural system, columns), structural system, columns), structural system, columns), structural system, columns, columns, structural system, columns, structural system, columns, structural system, columns, column	les, students are introduced to issues related to the protection of (not only) historic and heritage-protected buildings. In particular, the cts and influences from the point of view of load history; non-force effects and influences, effects of forced deformation; durability and ron and corrosion processes; failures, reconstruction and rehabilitation of foundation structures, brick structures, concrete structures (rein structures, wooden structures of buildings, protection of buildings against increased humidity and diagnostics of buildings. Building Structures 3C	se are defects and eliability; mechaninforced concrete), land the serious of the cond part, student a structural desence ceilings, structures a sudding foundations.	d failures of cal, physical, prefabricated 3 III. In the first ts will learn 4 g structures, ign of walls, eel and steel s. 4 s - foundation
In the lecture ser buildings, load effechemical degradation of the subject deals part, the attention of the structural system, columns), floor structural system, columns), stoor estructural system, columns, stoor estructural system, concreted the structural system, columns), floor structural system, condumns), stoor estructural system, concreted the structural system, condumns, stoor estructural system, concreted the structural system, condumns, stoor estructural system of the structural sys	les, students are introduced to issues related to the protection of (not only) historic and heritage-protected buildings. In particular, the cts and influences from the point of view of load history; non-force effects and influences, effects of forced deformation; durability and ron and corrosion processes; failures , reconstruction and rehabilitation of foundation structures, brick structures, concrete structures (rein structures, wooden structures of buildings, protection of buildings against increased humidity and diagnostics of buildings. Building Structures 3C with the complex design of load-bearing structures of roofing, indoor and multi-storey buildings and the structural-static effect of the part is focused on span structures of sloping roofs and hall buildings and on structural-static problems of multi-storey buildings. In the sea about the design of prefabricated indoor and multi-storey structures. Building Structures 1I sign of building structures with a comprehensive consideration of the functional requirements imposed on individual elements. Require interaction of elements, spatial effect of the structural system. Vertical load-bearing structures (functions, requirements, principles of functions, requirements, principles of the structural design of vaults, wooden ceilings, reinforced concrete ceilings, ceramic context (functions, requirements, principles of the structural systems of single and multi-storey buildings, structural systems of load and principles of the structural and material solutions, basics of typology, design principles, construction details, railing. Building Structures, buildings - principles of joints design in bearing structures, thermal expansion, compensation of differences in sea and principles of joints design in bearing structures, thermal expansion, compensation of differences in sea and principles.	se are defects and eliability; mechaninforced concrete), land the serior of she cond part, student a superior of she cond part, student a superior of she cond part, student be structural destructural destructural destructurate ceilings, stang-span structures and span structures are span structures and span structures and span structures and span structures are span structures and span span structures and span structures are span structures and span span structures and span span structures are span structures and span span span structures are span structures and span span span structures are span span structures and span span span span span span span span	d failures of cal, physical, prefabricated 3 III. In the first ts will learn 4 g structures, ign of walls, eel and steel s. 4 s - foundation vaterproofing
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124YKSD	Complex Structural Detail	Z	2
	ourse is to extend the knowledge gained in previous courses - it is intended for students who have already reached advanced level of gs. The content of the course is focused on the complex solution of construction details, following all legislative requirements and tak	J	
problems in buildin	efficiency and durability of the chosen solution.	ing into account th	e maximum
124YLOP	Lightweight Building Envelope	Z	2
	uces the basics needed for the design of light outer skins, glazed roofs and skylights, it is focused on material characteristics and opti		
•	nd application. Students are introduced to the requirements for these constructions, the design principles and design principles of the		- 1
124YNAK	rample of a design solution and a suitable material base Students are shown the possibilities of using glass in architecture, including Numerical Analysis of Building Structures	realized constructi	ons.
	Numerical Arranysis of Building Structures sed on the practical modeling of various structural-static problems in particular. We will also focus on the problems of optimizing struc	tures. The goal is t	
	lem, convert it into a mathematical model, design a solution algorithm and write this algorithm in Excel or VBA. You'll learn how to use	_	
	ou can use years from now. You will also definitely learn something about numerical modeling. I have been using Excel for work for 25	•	
	e it effectively not only in building analysis models. Do not expect great science, but rather a practical approach to the problems you		
124YPFS	Precast concrete structures	Z	2
	ses made of precast conrete panels, of which approx. 82 thousand were built in the period 1960-1995 do not meet the required exten and in many cases require the implementation of regeneration and modernization interventions enabling their full use. The course is	•	
	ruction and modernization of precast houses, modernization of apartments in precast houses, on the issue of freeing parterres of precast		
offices, fitness cen	ters, etc. Renovation, modernization, or regenerations require the removal of functionally inadequate completion structures, technical	l equipment, instal	lations and,
	n demanding interventions in supporting structures. As part of the construction of communication networks, modernization of urban de	=	- 1
	arry out partial or complete demolition of a precast panel building. As part of the regeneration of precast panel housing estates, an e ast houses. The implementation of the mentioned plans requires a survey and diagnostics of supporting and peripheral structures, jo		
completion of proof	of the structural-technical condition and an assessment of the residual life of precast panel structures and buildings.	into or parto and ar	11 Ovaldation
124YRHS	Reconstruction of Historical Building Structures	Z	2
· · · · · · · · · · · · · · · · · · ·	he second half of the 19th century by 1960, more than 250 thousand of two- to five-story brick apartment (mainly rental) houses in tra		
	Czech Republic. Brick buildings from this period were built according to regulations, building codes and laws from the turn of the 19th a		
	ouses do not meet the current thermal, acoustic and other requirements, the requirements of a dynamically developing society to the neration and modernization interventions, including the replacement of non-compliant and out-of-date structures and equipment enabling.		
• •	irrent issue of renewal, reconstruction and modernization of brick multi-storey rental apartment buildings, on historical structures and ma	_	
and aging of struct	ures and materials of historic brick residential buildings, their residual life, failures and reconstruction of historical buildings and their particles and reconstruction of historical buildings and their particles are construction of historical buildings.	parts. Furthermore	, the course
is focused on the is	ssue of improving the well-being of the internal environment, the replacement of finishing structures, opening fillings, etc. as an integr	al part of the mode	ernization of
124YSPB	these buildings. Curtain Walls	Z	2
_	ן כינו נמודו עימוזא or the design of roof coverings for sloping and steep roofs. The design of roof coverings in terms of requirements: building physical, wa	. –	
	ogical, chemical, lifetime and recycling. Principles of design of additional elements and details of roof coverings of flat, sloping and ste	· - ·	
	requirements and given boundary conditions.		
125BAPC	Bachelor Thesis	Z	12
	the result of the Bachelor degree study programme. It should prove student's ability to work independently in the area of Building Ser aspects or to focus on practical application on an object within building services systems. Students consult the supervisor and specia	·=	
covor incoronour	The thesis is presented in front of the commission.		paramonto.
125P02C	Structural design project 2C	KZ	6
Independent	project in the field of building services systems. Students choose out of the topics on offer and work on the text, calculations and graph	phical form of the p	roject.
125TZ01	Building services systems 1	Z,ZK	5
40FT700	Basic course in building services systems - water supply, drainage, gas supply and heating systems.	Z,ZK	5
125TZ02	Building Services Systems 2 This subject includes an introduction to ventilation and air conditioning in buildings and solutions for electric instalations and artificial		5
125YNST	HVAC and services design	Z	2
	of the designing of sanitary systems, heating and ventilation. Design of the heat source, heat emitters, potable water demand, amour		
	air-handling unit and design of indoor systems.		
125YPMT	Building services systems CAD, modelling and simulation	Z	2
400DIM4	Introductory course in computer aided modelling and design of building services systems.	7	
126BIM1	BIM as on teaching basic knowledge in the field of Building Information Management (BIM) in theoretical and practical areas, applicable a	Cross different spe	1 cialisations
	ne construction industry. Students will be introduced to data formats, data standards, intellectual property issues, working with digitized	·	
graphics, open data	a sources in the Czech Republic, ICT and enterprise systems, information systems for the construction industry, but also the context of	BIM in the current of	construction
industry in relation	to the entire project life cycle and its specifics (delivery, expert focus, phases of construction projects, etc.) The theoretical knowledge	is complemented	by practical
106EKMNI	exercises aimed at mastering and understanding the basic principles of object-oriented parametric modelling.	7 71/	7
126EKMN The aim of the cou	Economics and Management urse is to provide students with an introduction to economics and management in the construction industry and to familiarize them wi	Z,ZK	terms and
	plications. Students will be prepared to solve basic construction-management problems in the construction industry. They will acquire		
method of pricing of	construction works and master the basic methods of managing a construction company. Emphasis is placed on understanding the pri	inciple of economic	c thinking in
4000TP 41	relation to the construction industry.	7 71	
126STMN Overview of selection	Construction Management ed concepts. Methods to support project management. Legal standards, SN and ISO standards. The essential aspects of Project M	Z,ZK	ruction as a
	bjectives, strategies, phases and surroundings of the construction project. Project manager role. Purchases and contracts in the project	_	
	Financial management and project evaluation. Feasibility study. Cost and resource management. Change procedures. The Act on Spa	-	
_	Act on the Awarding of Public Contracts, and the definition of terms. Business obligation relationships, the conclusion of contracts, the		- 1
business condition	ns. Business public competition, its influence on the obligations of participants. Securing the commitment - contractual penalty, guaral in construction - are contract for the conclusion of a future contract, purchase contract, contract for work, and content of the cor		ntract types
126YVSF	Small Business Management	Z	2
	Small business Management led into lectures 1 hour per week and exercises 1 hour per week. Lectures take place according to the course outline listed below. In:		
=	plan for a selected business activity according to the specified syllabus. They draw up a plan for a start-up business. Entrepreneursh		

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 pauditorium.	olan in power point in f	ront of the
132ANKC Analysis of Structures	Z,ZK	5
Analyses of statically determinate and statically/deformable indeterminate structures, concerning live loads solution, stresses in thin-wall beams, and		
formulation of deformation method, principles of FEM, models for a beam on elastic foundation and stability of structure		,
132BAPC Bachelor Thesis	Z	12
The assignment of the final thesis is always individual based on the agreement of the teacher and the student. The vast majority of assignments are		
research activities of the respective employee. The output of the solution may be a brief research study of the given problem, experimental activity, pr		
to the respective assignment.	0	Ĭ
132PRPE Strength of Materials	Z,ZK	6
Fundamentals of the theory of elasticity: stress and strain of straight beams subjected to bending and free torsion, ultimate plastic capacity of a mem	1 ' 1	-
buckling lengths of straight compression members. Basic assumptions, quantities, and equations describing the stress and strain state in 3D or	_	
132SM01 Structural Mechanics 1	Z,ZK	6
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 for		
structures. Trusses. Reaction forces applying the principle of virtual work.		
132SM02 Structural Mechanics 2	Z,ZK	6
Internal forces diagrams of simple statically determinate plane structures and compound two-dimensional structures. Multiaxially loaded cantilever.		
prepositions of its distribution in a cross section. Equivalence of internal forces. Geometry of mass and areas, centre of gravity and m		rooo ana
132SM3 Structural Mechanics 3	Z,ZK	5
Deformation and force method for the solution of reactions and internal forces on statically indeterminate beams, frames, and truss structures. Calcul	1 '	-
frames, and truss structures using the principle of virtual works.	ation of displacements	oi beains,
	Z	2
132YMMO Modern Methods of Optimization The course is aimed at an overview of numerical optimization methods applicable not only in the Civil Engineering area. The emphasis is put more on the		
	s introduction of driving	principles,
however, practical applications in MATLAB environment are also conducted during exercises.	7	
132YNMI Numerical Methods in Engineering Practice	Z	2
The course is focused on basic numerical methods for solving large sets of algebraic equations and boundary or initial value problems. In the context		s, the finite
difference and finite element methods are explained from the viewpoints of an engineering scientist and a mathematici		
132YPM1 Computer Analysis of Structures 1	Z	2
Static model of a structure. Computer codes RFEM-Dlubal, SCIA Engineer.		
132YPV1 Programming in C++ for Engineering Calculations 1	Z	2
Introduction to C++ programming, non-objective primer of the language, basic algorithms used in the engineering compu		
132YSHK Statics and Reconstruction of Historical Structures	Z	2
Short overview of historical vaults and roof trusses. Static behaviour and most frequent causes of failure. Methods of reconstruction, changes in four	dation conditions inclu	ded. Most
frequent causes of failure of panel buildings. Visit to the historical part of Prague Castle.		
133BAPC Bachelor Thesis	Z	12
A bachelor thesis is the qualification thesis of a bachelor's degree. It can take the form of processing the structural part of the building design project	-	he topic of
designing and application of a structural element with a variant comparative analysis or parametric study or performing and analysing	experiments, etc.	
133BK01 Concrete and Masonry Structures 1	Z,ZK	6
The subject is focused on the design of concrete elements and constructions of multi-storey buildings - it follows on from the subject Fundamentals of	of Structural Design. Th	ne content
of the course is the addition and generalization of procedures for verifying the load-bearing capacity of reinforced concrete structural elements for cases	-	
of biaxial bending and normal force, designing elements stressed by torsion, punching shear, assessment of slender compressed elements. Design	-	issed for
individual types of structures, including the choice of suitable calculation models and calculation methods and reinforcement		
133BK02 Concrete and Masonry Structures 2	Z,ZK	7
This course builds on the courses NNK and BK01 and widens the knowledge to the necessary minimum for the bachalor studium branches C and K.1.	3.Masonry structures	- subjected
to compression, bending, shear, reinforced masonry, strenghtening of masonry structures 4 6. Design of concrete structures to serviceability limit		
development and crack width limitation, deflections, application on waterproof structures 78.Introduction to pre-stressed concrete: design of pre-st	•	٠. ا
technology 912. Pre-cast concrete structures 13. Bridges: nomenclature in bridges, cross-section arrangement, loading, construction methods, Intro	duction to engineering	structures
133NNKB Fundamentals of Structural Design - Concrete	Z,ZK	4
The content of the subject are the basics of load-bearing concrete structures design and the design methodology according to valid standards, incl	uding the determinatio	n of load
effects. The properties of concrete, the production and testing of concrete, the properties of concrete reinforcement and its interaction with concre	te are discussed. Desi	gn and
reinforcement of concrete structures for basic types of loading (bending, shear, pressure) are the main part of this course. An introduction to service	-	
this course. The course follows the introductory subject of Civil Engineering program (Structural Mechanics, Elasticity and Strength, Building Ma	terials, Building Struct	ures).
133P02C Structural design project 2C	KZ	6
Elaboration of the structural part of the project documentation for the given structure (part of the structure). The design of the selected variant of the	ne structure with regard	d to the
requirements of other professions. Structural analysis and drawing documentation to the extent specified during consultations. The Department of A	rchitectural Engineerin	ıg (K124)
and Geotechnics (K135) collaborate in teaching in the course.		
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 model	ing of structures. Princ	iples for
choosing a suitable model. Practical procedures for the design and assessment of reinforced concrete structures using software tools. Principles an	d methods of interpret	ation and
verification of results. Practical examples.		
133YBSV Concretes with Special Properties	Z	2
High-strength concrete, fibre concrete, self-compacting concrete, shotcrete and fibreconcretes, lightweight concrete, heavyweight concrete; their properties.	erties and applications	in practice.
New findings in technology.		
133YMVB Concrete and Masonry Structures 1	Z	2
The content of the subject will be selected problems from the following areas: Reinforcement of discontinuities of reinforced concrete structures. Intro		
reinforced concrete structures. Preparation of input data for numerical models. Design of structures using MATLAB. Presentation of selected programmers are selected programmers.	ams for the design of c	oncrete
structures.		
133YPNB Fire desgn og concrete and mnsory structures	Z	2
The course is focused on fire resistance of concrete and masonry structures: concrete and concrete structures exposed to fire, design rules, thermal	-	principles,
design methods, material properties of concrete and steel reinforcement at high temperatures, fire design of masonry stru		

			_
	Failures and Rehabilitation of Concrete Structures	Z	2
	es on the description of failures of concrete structures, explanation of the causes of these failures and the design of remedial measur	es. Methods of stre	engthening
existing concrete	structures are also discussed. Surface repairs, strengthening of contactors, strengthening of structural elements to the effects of ben	ding moment and	shear, and
	foundation structures are discussed. The course appropriately combines theoretical approaches with common practice.		
133YTB	Technology of Concrete II	Z	2
Basic properties of	the concrete components and their influence on the concrete properties are presented. Furthermore, destructive and non-destructive	e testing methods i	for concrete
	crete elements are introduced. The last chapters of the lectures are devoted to the real applications of concrete structures. The theoret	_	
	by exercises, where the students have the unique opportunity to try out the acquired knowledge in laboratory, including special		
134BAPC	Bachelor Thesis	Z	12
		_	
	urse, student formulates a bachelor's thesis that is necessary to reach the bachelor's degree. This course is focused on steel or timb		
134DK01	Timber Structures 1	Z,ZK	5
Introduction and p	resentation of timber structures use in building industry. Wood and wood-based materials properties. Safety of timber structures desi	gn, ultimate limit st	tates, valid
standards. C	ross section design of simple members. Connections of timber structures. Glued joints. Basic structural systems. Fire design. Protect	ion of timber struct	ures.
134NNKO	Design of Supporting StructuresI - Steel	Z,ZK	3
	ning steel, steel-concrete and wooden load-bearing structures according to applicable standards, including the determination of load		erences due
J	to the specific properties of individual materials.	, 0	
134OK01	Steel Structures 1	Z.ZK	6
		' '	-
	ims to expand the knowledge acquired in the subject NNK and concerning design of basic steel structures. In the theoretical part are	-	-
,	es including classification from view of necessities of nonlinear analyses. Design of steel elements is widen for global analysis method	•	.
and concrete bear	ms/columns and cold-formed thin-walled elements. The main part of the subject deals with complex design of multi-storey steel buildi	ngs and steel indu	strial halls.
	Final lectures concern large-span structures, uniqueness in design of tall buildings, including effects of seismicity.		
134P02C	Structural design project 2C	KZ	6
Design of steel / tim	ber load bearing building structure according to external requirements in relation to interaction of load bearing and final completion s	tructural elements.	The project
	is assigned by the seminar leader.		
134YDUV	Timber and Sustainable Construction	Z	2
	stainable use of wood in construction with respect to previous courses. Theoretical methods of structural design and design of structu		
introduction to su		ires composed noi	ii dillerent
	materials. Principles of strengthening and repairing of timber structures.		
134YMOD	Numerical Modeling of Steel and Timber Structures	Z	2
Subject familiarize	students with the basis of modelling od steel and timber structures. Students manage basis of simulation during the creation of static	model of the struc	ture as well
	as the global analysis and check with respect to European design codes.		
134YNKS	Glass Structures	Z	2
The course is intend	ding to introduce the students the field of structural applications of glass and to give them some specific skills for calculation and detailli	ng of for basic glass	s structures:
	d fins, columns and walls, point-supported glass, as well as for glazing systems such as glass facades, canopies and roofs, stairs and	-	
-	s as structural material will be presented in comparison with other basic building materials, together with selected examples of glass.	•	
	ting technology, relevant technical regulations, specification and current methods applied in design will be described. Worked example		- 1
details and connect	for better understanding, and design project will help to fix specific knowledge.	23 Will accompany	lile lectures
40.4\/DDI/			
134YPDK	Additional Timber and Metal Structures	Z	2
Subject provides ba	asic information regarding to design and application of supporting, working and industrial scaffolding systems. It is focused especially	on design rules in	accordance
	with European codes and an modelling of atrustures		accordance
	with European codes and on modelling of structures.	g	accordance
134YPNK	Fire Resistance of Steel and Timber Structures	Z	2
134YPNK		Z	
'	Fire Resistance of Steel and Timber Structures The class gives introduction to fire safety and fire resistance of steel, steel-concrete composite and timber structural elements.	Z ts.	2
134YTSK	Fire Resistance of Steel and Timber Structures The class gives introduction to fire safety and fire resistance of steel, steel-concrete composite and timber structural elemen Thin-Walled and Composite Structures	z ts.	2
134YTSK The course include	Fire Resistance of Steel and Timber Structures The class gives introduction to fire safety and fire resistance of steel, steel-concrete composite and timber structural elemen Thin-Walled and Composite Structures as advanced analysis and structural design of slender sections and cold-formed sections. Advanced structural design of steel-concre	Z ts. Z te composite is als	2 o included.
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136DSUZ	Transport Structures and Urban Planning	Z,ZK	7
The course 136DS	UZ is composed of 3 issues, which build on each other and complement each other. These are the area of transport structures (roads	and rail transport -	scope 3+1)
and the area of urb	oan planning and spatial planning (scope 2+0). Unlike the road construction and railroad construction sections, the urban planning se	ction does not end	I with credit.
Transport Structure	es - Roads (R): Introduction to basic terminology in the part of roads, history. Road Act and related legislative and technical regulation	s, their impact on r	road design.
Design categories	of roads and motorways, design speed, directional and elevation design of routes, cross-sectional layout of roads and motorways, ea	rthwork - dimension	ons, shapes,
drainage. Urban	roads, division and marking, definition of MK space, differences in design, operation and equipment. Carriageway, division, design p	rinciples. Safety ed	quipment,
junctions and cross	sings. Transport Structures - Rail transport (RT): Introduction to basic terminology, Issues of railway crossings from the point of view of	security, design an	d operation.
Tram transport - his	story, principles of tram track construction, interaction with the environment. Metro as a system of urban rail transport. Basic principle	s and parameters,	metro lines.
Railway construction	ons - an introduction to the design and construction of a railway track in the conditions of the Czech Republic, the basic elements of the	railway superstruc	ture. Spatial
	Planning (SP): Teaching spatial planning and urban planning, spatial planning tools and procedures for their acquisition.		
141HYA	Hydraulics	Z,ZK	5
A course deals wit	n issues of hydrostatics and hydrodynamics with aiming at civil engineering applications. There are analysed tasks related to hydrost	atic and hydrodyna	mic loading
	of structures, pipeline flow, open channel flow and groundwater flow.		
142VIZP	Water and Environmental Engineering	Z,ZK	4
During the teachin	g semester, students are introduced to the fields of water engineering, water management and environmental engineering. In particu	lar, emphasis is pla	aced on the
practical aspects o	f water and environmental engineering in close relation to other branches of civil engineering. The course is taught in the form of lecti	ures and tutorials.	The lectures
are divided them	natically into 20 blocks according to the different branches of the discipline (13 times water engineering and 7 times environmental en	gineering). In the	exercises,
students work on	basic problems in the field of hydrology, water supply and water structures, especially dams, hydropower and flood issues. All 4 "wat	er" departments of	f K14x are
	involved in teaching the course.		
154SG01	Land Surveying in Civil Engineering	Z,ZK	6
The shape and si	ze of the Earth, substitutive surfaces, cartographic projections Horizontal and vertical control, coordinate calculations Quality control,	deviations and tol	erations in
build-up Angle an	d distance measurements Heighting measurements Other geodetic methods in build-up (GNSS, DPZ,) Photogrammetry and laser	scanning Themati	ic mapping
and present state	documentation Geodetic works in build-up State map series of CR and thematic maps for build-up Geographic information systems a	and spatial plannin	g Cadastre
	of real estates Laws and decrees for geodesy and build-up in Czech Republic		
TV1	Physical Education	Z	0
TV2	Physical Education	Z	0

For updated information see http://bilakniha.cvut.cz/en/FF.html Generated: day 2025-06-27, time 15:58.