#### 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:

	9.000					
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 <b>Jana ápová</b> 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

101KG01 **Constructive Geometry** Z,ZK Projections and projective methods. Axonometry. Oblique projection. Orthogonal axonometry. Displaying prisms, cones, cylinders, pyramids, balls. Simple problems in axonometry. Basics of lighting of solids and groupes of solids. Perspective projection. Curves, parametrisation. Frenet's trihedron, torsion and curvature. Helical surfaces. Quadrics. Surfaces in building industry. 101MA01 Mathematics 1 Z,ZK 6 https://mat.fsv.cvut.cz/bubenik/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	Z,ZK	4			
Introduction to general	bemistry - chemical bond, compounds, reactions, equilibrium. Chemistry of environment - water, atmosphere, pedosphere.	Chemistry of build	ing materials -			
inorganic binders, glass	s, ceramic, metals, natural polymers, wood, synthetic polymers on C and Si basis. Introduction to degradation of building mat	erials and to analy	/tical chemistry.			
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 fo	orces. Compound	two-dimensional			
structures. Trusses. Rea	action forces applying the principle of virtual work.					
135GM01	Geomechanics 1	Z	3			
The course focuses on	he understanding of basic geological laws and principles in relation to architecture, civil engineering and urban planning. Em	phasis is placed o	on explaining the			
influence of geological p	fluence 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. A	t the same time, attention is paid to the technical properties of rocks with regard to their practical applications. The course al	so includes a brie	f 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 <b>Pavel Novák</b> Pavel Novák (Gar.)	Z,ZK	4	3P+1C	L	Z
123SH01	<b>Building Materials</b> Alena Vimmrová, Eva Vejmelková, Miloš Jerman <b>Alena Vimmrová</b> Alena Vimmrová (Gar.)	Z,ZK	5	2P+2C	Z,L	Z
126BIM1	BIM Petr Mat jka, Josef Žák 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
	yuka/bakalari/eng/ls/MT02/	2,211	0
· ·			
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 foc	uses on mechani	cs and basic
thermodynamics. The fe	ollowing areas are covered in the course: Mechanics of material points (particles) and deformable bodies. Discrete and contin	uous model of m	atter. Kinematics
and dynamics of a mate	erial point (particle). Mechanical force fields. Gravitational field. Mechanical vibrations. Material deformation. Elastic waves. Ac	oustics. Hydrome	chanics.
Fundamentals of therm	odynamics. Heat transfer.		
123SH01	Building Materials	Z,ZK	5
Building materials - bas	is course. Clasification of the materials. Structure of materials. Main properties of materials. Application of materials in buildin	g constructions. I	ntroduction to
material testing.			
126BIM1	BIM	Z	1
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 co	onstruction industry. Students will be introduced to data formats, data standards, intellectual property issues, working with digit	ized documents,	raster and vector
graphics, open data sou	irces in the Czech Republic, ICT and enterprise systems, information systems for the construction industry, but also the context	t of BIM in the cur	rent construction
industry in relation to th	e entire project life cycle and its specifics (delivery, expert focus, phases of construction projects, etc.) The theoretical knowle	dge is compleme	nted by practical
exercises aimed at mas	stering and understanding the basic principles of object-oriented parametric modelling.		
132SM02	Structural Mechanics 2	Z,ZK	6
Internal forces diagram	s of simple statically determinate plane structures and compound two-dimensional structures. Multiaxially loaded cantilever.	Definition of norma	al stress and
prepositions of its distri	bution in a cross section. Equivalence of internal forces. Geometry of mass and areas, centre of gravity and moments of inert	ia.	
154SG01	Land Surveying in Civil Engineering	Z,ZK	6
The shape and size of	he Earth, substitutive surfaces, cartographic projections Horizontal and vertical control, coordinate calculations Quality contro	ol, deviations and	tolerations in
build-up Angle and dist	ance measurements Heighting measurements Other geodetic methods in build-up (GNSS, DPZ,) Photogrammetry and las	er scanning Ther	natic mapping
and present state docu	mentation Geodetic works in build-up State map series of CR and thematic maps for build-up Geographic information system	s and spatial plar	nning Cadastre
of real estates Laws an	d decrees for geodesy and build-up in Czech Republic		
L			

#### 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 grou	ιμ.					
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 21 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 Šastný, Martin Horský Ladislav Satrapa (Gar.)	Z,ZK	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/vy	/uka/bakalari/eng/zs/				
124PSI1	Building Structures 1I	Z	4		
The concept of design c	f building structures with a comprehensive consideration of the functional requirements imposed on individual elements. Req	uirements for buil	ding structures,		
structural system, intera	ction of elements, spatial effect of the structural system. Vertical load-bearing structures (functions, requirements, principles of	of the structural d	esign of walls,		
columns), floor structure	plumns), floor structures (functions, requirements, principles of the structural design of vaults, wooden ceilings, reinforced concrete ceilings, ceramic concrete ceilings, steel and steel				
concrete ceilings). Expa	nsion 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 the	eory of elasticity: stress and strain of straight beams subjected to bending and free torsion, ultimate plastic capacity of a mem	ber in bending, c	ritical loads and		
buckling lengths of straig	ght compression members. Basic assumptions, quantities, and equations describing the stress and strain state in 3D continuu	um, plates and wa	alls.		
135GM2I	Geomechanics 2I	Z,ZK	5		
Formation of soils, basic	properties of soils, water in soil, strength and deformation properties of soils and their determination, improvement of soil pro-	operties, applicat	ion tasks		
141HYA	Hydraulics	Z,ZK	5		
A course deals with issu	ies of hydrostatics and hydrodynamics with aiming at civil engineering applications. There are analysed tasks related to hydro	static and hydrod	lynamic loading		
of structures, pipeline flo	w, open channel flow and groundwater flow.				
142VIZP	Water and Environmental Engineering	Z,ZK	4		
During the teaching sen	nester, students are introduced to the fields of water engineering, water management and environmental engineering. In parti	cular, emphasis i	s placed on the		
practical aspects of wate	er and environmental engineering in close relation to other branches of civil engineering. The course is taught in the form of le	ectures and tutoria	als. The lectures		
are divided thematically	e 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 "wa	ter" 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 2I Ctislav Fiala, Petr Hájek, Malila Noori, Veronika Ka ma íková, Jaroslav Vychytil, Tereza Pavl , Ji í Pazderka, Ji í Nová ek <b>Ji í Pazderka</b> 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

134NNKO       Design of Supporting Structures! - Steel František Wald, Michal Jandera, Martina Eliášová Martina Eliášová Martina       Z,ZK       3       2P+1C       L       Z         136DSUZ       Transport Structures and Urban Planning Ludvík Vébr, František Pospíšil, Ond ej Bret František Pospíšil Ludvík Vébr       Z,ZK       7       5P+1C       L,Z       Z         136DSUZ       Transport Structures and Urban Planning Ludvík Vébr, František Pospíšil, Ond ej Bret František Pospíšil Ludvík Vébr       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       Z,ZK       4         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.         Roof truss systems.       Iconomics and Management       Z,ZK       7         The aim of the course is to provide students with an introduction to economics and management problems in the construction industry. They will acquire basic information about the methed of pricing construction works and master the basic construction-management problems in the construction industry. They will acquire basic information about the
136DSUZ       Ludvík Vébr, František Pospíšil, Ond ej Bret František Pospíšil Ludvík Vébr       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       Z,ZK       4         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       7         The aim of the course is to provide students with an introduction to economics and management problems in the construction industry. They will acquire basic information about the
124PSI2       Building Structures 2I       Z,ZK       4         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.       Iconomics and Management       Z,ZK       7         The aim of the course is to provide students with an introduction to economics and management problems 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
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       7         The aim of the course is to provide students with an introduction to economics and management problems 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
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       7         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
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       7         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
Roof truss systems.         126EKMN       Economics and Management         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
126EKMN       Economics and Management       Z,ZK       7         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
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
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
meaned of phone ground and manded of managing a conciliation company. Emphasic lo placed on and order definition of the basic meaned of managing in the phone and managing in the basic meaned of the basic meaned of managing in the phone and managing in the basic meaned of the basic mean
relation to the construction industry.
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. Calculation of displacements of beams,
frames, and truss structures using the principle of virtual works.
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, 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 3
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 Z,ZK 7
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

#### 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 <b>Ji í Nová ek</b> 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	Ρ
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 <b>Jan Pruška</b> 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 tran	nsfer 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 c	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 t	he course will
be presented as well as methods for their solution. A short information on selected diagnostic used for assessment of thermal performance of building	ngs methods will b	e 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 requ	irements and wha	t 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 o	f 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 operation of sky brightness.	ening. 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	e regarding soun	d 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, an	alysis of walls and	l 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 Desig	gn. The content
of the course is the addition and generalization of procedures for verifying the load-bearing capacity of reinforced concrete structural elements for case	s of bending, shea	ar, a combination
of biaxial bending and normal force, designing elements stressed by torsion, punching shear, assessment of slender compressed elements. Design	procedures are di	scussed for
individual types of structures, including the choice of suitable calculation models and calculation methods and reinforcement principles.		
134OK01 Steel Structures 1	Z,ZK	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 a	are delivered poss	ibilities of global
analysis of structures including classification from view of necessities of nonlinear analyses. Design of steel elements is widen for global analysis me	ethods, 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 bu	ildings and steel ir	ndustrial halls.
Final lectures concern large-span structures, uniqueness in design of tall buildings, including effects of seismicity.		
135ZS01 Foundations 1	Z,ZK	7
Introduction to the subject, literature, design principles, geotechnical categories Strength and deformation characteristics of foundation soils, slab for	undations Limit sta	ates of flat
foundations, calculation of bearing capacity and settlement of flat foundations Deep foundations - typology, pile foundations, drilled and driven pile ter	chnology Axial cap	pacity of isolated
piles, pile load tests Determination of bearing capacity of transversely loaded piles, pile group Micropiles, anchors, technology Conventional and jet	grouting, undergro	ound walls
Construction pits, technology of shoring of construction pits Principles for the design and assessment of shoring structures, earth pressure, water effect	t Calculation of sh	oring 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:

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	Ρ
124P01C	Structural design project 1 Malila Noori, Lenka Hanzalová, Ji í Pazderka, Ji í Novák, Kate ina Mertenová, Martin Jiránek <b>Ji í Pazderka</b> Ji í Pazderka (Gar.)	KZ	6	4C	L	Ρ
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 Marek Foglar (Gar.)	Z,ZK	7	4P+2C	L	Ρ
134DK01	Timber Structures 1 Lukáš Velebil, Petr Kuklík, Anna Kuklíková Anna Kuklíková Jakub Dolejš (Gar.)	Z,ZK	5	3P+1C	L	Ρ

## 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 sub	ect deals with the complex design of indoor and high-rise buildings, especially the influence of marginal conditions on the ch	oice of material a	nd 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.							
124P01C	Structural design project 1	KZ	6				
Converting an architect	ural study of a smaller or medium-sized building for housing, administration, education, culture or sports into a detailed desig	n of a building str	ucture based on				
static analysis, interaction	on of load-bearing and non-load-bearing elements and building physics. Focus on complex approach to practical design, analy	sis and optimaliza	tion of a building				
structures. Design of va	riants of the load-bearing system, preliminary static analysis (calculation of load-bearing elements - slabs, columns, walls, etc),	calculation of fou	ndations, design				
of structures on the buil	ding envelope with respect to thermal protection of buildings, building physics, fire protection of buildings and protection agai	nst water and soil	l moisture.				
Elaboration of detailed drawings including floor plans, sections and details.							
125TZ01	Building services systems 1	Z,ZK	5				
Basic course in building	Basic course in building services systems - water supply, drainage, gas supply and heating systems.						

		,			
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. 13. Masonry structures - subjected					
to compression, bend	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 crac	k width limitation, deflections, application on waterproof structures 78. Introduction to pre-stressed concrete: design of pre-str	ressing, losses of	pre-stressing,		
technology 912. Pre	cast concrete structures 13. Bridges: nomenclature in bridges, cross-section arrangement, loading, construction methods, Intr	oduction to engine	eering structures		
134DK01	Timber Structures 1	Z,ZK	5		
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 sed	ion design of simple members. Connections of timber structures. Glued joints, Basic structural systems. Fire design, Protection	of timber structu	100		

#### 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	Ρ
123MAI	Materials Engineering Milena Pavlíková, Zbyšek Pavlík Milena Pavlíková Zbyšek Pavlík (Gar.)	Z,ZK	5	2P+2C	Z	Ρ
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 (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 Daniel Adamovský (Gar.)	Z,ZK	5	2P+2C	Z	Ρ

## 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 inf	ormation on the building materials characterization and principles of designing and developing new types of materials having	directed properti	ies 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, these 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 and reliability; mechanical, physical,							
chemical degradation ar	ad corrosion processes; failures, reconstruction and rehabilitation of foundation structures, brick structures, concrete structures (	reinforced concre	te), prefabricated				
structures, wooden stru	ctures of buildings, protection of buildings against increased humidity and diagnostics of buildings.						
124PS3C	Building Structures 3C	Z,ZK	3				
The subject deals with t	he complex design of load-bearing structures of roofing, indoor and multi-storey buildings and the structural-static effect of th	ne perimeter roof	shell. In the first				
part, the attention is foc	used 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 pret	abricated 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 professional							
responsibilities. The professional practice evaluates the sum of all knowledge acquired through previous theoretical studies and is a proof of their acquisition.							
125TZ02	Building Services Systems 2	Z,ZK	5				
This subject includes ar	his 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:

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 <b>Martin Jiránek</b> Martin Jiránek (Gar.)	Z,ZK	6	3P+2C	L	Ρ

126STMN	Construction Management Dana M š anová, Renáta Schneiderová Heralová, Václav Tatýrek, Jaroslava Tománková, Zita Prost jovská Martin ásenský Zita Prost jovská (Gar.)	Z,ZK	6	3P+2C	Z,L	Р
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124PBZN	Fire Protection and Healthy Buildings	Z,ZK	6
escape ways, distance (brickwork, concreting on the course fire; pas	fire - course of fire, burning process, fire loading; legislation and European Standards; fire safety solutions - fire project, requirer e separation, fire-fighting equipment; fire behaviour of the most used materials (wood, steel, concrete, plastics); protection of b , plasters and sprays, coatings, impregnates of wood, encasements, glued facings of mineral fibres); sandwiches from fire poi sive protection of building structures - fire walls, fire glazed structures, fire ceiling, draft stops and seals; repressive measures	ouilding materials a nt of view; influenc - electric fire signa	against fire ce of claddings alling, stationar
aerosols, radionuclide	smoke extract, hydrant systems. Healthy Buildings Constituents of indoor microclimate, hazardous substances (VOCs, HFRs s, etc.), their sources and health effects. Influence of building structures and materials on quality of indoor microclimate. Desig microclimate.	· · ·	
aerosols, radionuclide optimisation of indoor	s, etc.), their sources and health effects. Influence of building structures and materials on quality of indoor microclimate. Desig	· · ·	
aerosols, radionuclide optimisation of indoor 126STMN	s, etc.), their sources and health effects. Influence of building structures and materials on quality of indoor microclimate. Desig microclimate.	n of buildings with	n respect to
aerosols, radionuclide optimisation of indoor 126STMN Overview of selected project product. Object	s, etc.), their sources and health effects. Influence of building structures and materials on quality of indoor microclimate. Desig microclimate. Construction Management concepts. Methods to support project management. Legal standards, SN and ISO standards. The essential aspects of Project tives, strategies, phases and surroundings of the construction project. Project manager role. Purchases and contracts in the p	n of buildings with Z,ZK ct Management. C roject. Quality mar	n respect to 6 onstruction as nagement, risk
aerosols, radionuclide optimisation of indoor 126STMN Overview of selected project product. Object management. Financi	s, etc.), their sources and health effects. Influence of building structures and materials on quality of indoor microclimate. Desig microclimate. Construction Management concepts. Methods to support project management. Legal standards, SN and ISO standards. The essential aspects of Project tives, strategies, phases and surroundings of the construction project. Project manager role. Purchases and contracts in the p al management and project evaluation. Feasibility study. Cost and resource management. Change procedures. The Act on Spa	n of buildings with Z,ZK Ct Management. C roject. Quality mar atial Planning and	n respect to 6 onstruction as nagement, risk Building
aerosols, radionuclide optimisation of indoor 126STMN Overview of selected project product. Object management. Financi Regulations, the Act of	s, etc.), their sources and health effects. Influence of building structures and materials on quality of indoor microclimate. Desig microclimate. Construction Management concepts. Methods to support project management. Legal standards, SN and ISO standards. The essential aspects of Project tives, strategies, phases and surroundings of the construction project. Project manager role. Purchases and contracts in the p al management and project evaluation. Feasibility study. Cost and resource management. Change procedures. The Act on Spa n the Awarding of Public Contracts, and the definition of terms. Business obligation relationships, the conclusion of contracts,	n of buildings with Z,ZK t Management. C roject. Quality mar atial Planning and their form, and use	n respect to 6 onstruction a nagement, ris Building e of general
aerosols, radionuclide optimisation of indoor 126STMN Overview of selected project product. Object management. Financi Regulations, the Act of business conditions.	s, etc.), their sources and health effects. Influence of building structures and materials on quality of indoor microclimate. Desig microclimate. Construction Management concepts. Methods to support project management. Legal standards, SN and ISO standards. The essential aspects of Project tives, strategies, phases and surroundings of the construction project. Project manager role. Purchases and contracts in the p al management and project evaluation. Feasibility study. Cost and resource management. Change procedures. The Act on Spa	n of buildings with Z,ZK t Management. C roject. Quality mar atial Planning and their form, and use	n respect to 6 onstruction as nagement, risi Building e of general

#### 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 <b>Ji í Pazderka</b> 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 Tomáš Koudelka Anna Ku erová (Gar.)	Z	2	1P+1C	Z	PV
133YPRK	Failures and Rehabilitation of Concrete Structures Jakub Žák, Petr Štemberk 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 Karel Mikeš (Gar.)	Z	2	1P+1C	Z	PV

134YPDK	Additional Timber and Metal Structures Jakub Dolejš Jakub Dolejš Jakub Dolejš (Gar.)	Z	2	1P+1C	Z	PV
34YPNK	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
22YMKS	Construction Quality Controlling Rostislav Šulc, Pavel Svoboda, Tomáš Váchal, Linda Veselá Linda Veselá	Z	2	1P+1C	L	PV
23YCHS	Chemistry in Civil Engineering Milena Pavlíková, Martina Záleská Milena Pavlíková Milena Pavlíková (Gar.)	Z	2	1P+1C	L	PV
23YNTP	Numerical Analysis of Transport Processes Ji í Mad ra, Václav Ko í <b>Ji í Mad ra</b> Ji í Mad ra (Gar.)	Z	2	1P+1C	Z	PV
24YDRS	<b>Timber Buildings</b> Jan R ži ka, Jaroslav Vychytil, Kamil Stan k, Lukáš Velebil, Milan Peukert, Marek Pokorný <b>Jaroslav Vychytil</b> Jan R ži ka (Gar.)	Z	2	1P+1C	L	PV
24YLOP	Lightweight Building Envelope Lenka Hanzalová, Šárka Šilarová Šárka Šilarová Šárka Šilarová (Gar.)	Z	2	1P+1C	L	PV
24YPFS	Precast concrete structures Radek Zigler, Ji í Witzany Radek Zigler Radek Zigler (Gar.)	Z	2	1P+1C	L	PV
24YRHS	<b>Reconstruction of Historical Building Structures</b> Radek Zigler, Tomáš ejka, Ji í Witzany <b>Ji í Witzany</b> Ji í Witzany (Gar.)	Z	2	1P+1C	L	PV
25YNST	HVAC and services design Hana Kabrhelová Hana Kabrhelová Hana Kabrhelová (Gar.)	Z	2	1P+1C	Z,L	PV
25YPMT	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
I32YPM1	Computer Analysis of Structures 1 Petr Faiman Petr Faiman Petr Faiman (Gar.)	Z	2	1P+1C	L	PV
132YSHK	Statics and Reconstruction of Historical Structures Petr Fajman Petr Fajman Petr Fajman (Gar.)	Z	2	1P+1C	L	PV
I33YBKC	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 Michal Števula (Gar.)	Z	2	1P+1C	L	PV
I33YMVB	Concrete and Masonry Structures 1 Tomáš Trtík, Petr Bilý, Josef Novák Petr Bílý Petr Bílý (Gar.)	Z	2	1P+1C	L	PV
I33YPNB	Fire desgn og concrete and mnsory structures Radek Štefan, Martin Benýšek <b>Radek Štefan</b> Radek Štefan (Gar.)	Z	2	1P+1C	L	PV
I34YDUV	Timber and Sustainable Construction Anna Kuklíková Anna Kuklíková Anna Kuklíková (Gar.)	Z	2	1P+1C	L	PV
I34YNKS	Glass Structures Martina Eliášová Martina Eliášová Martina Eliášová (Gar.)	Z	2	1P+1C	L	PV
I34YTSK	Thin-Walled and Composite Structures Michal Jandera Michal Jandera Michal Jandera (Gar.)	Z	2	1P+1C	L	PV
I35YING	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 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 <b>Daniel Jirásko</b> Daniel Jirásko (Gar.)	Z	2	1P+1C	Z	PV

# Characteristics of the courses of this group of Study Plan: Code=BC202007\_2 Name=Stavební inženýrství, specializace Pozemní stavby, povinn volitelné p edm ty

101YAST	Applied Statistics	Z	2				
Basic notions and termi	nology, random variable, descriptive and inferential statistics. Discrete and continuous random variables, normal distribution,	log-normal distrib	oution. Statistical				
methods, theory of estin	nation, hypotheses testing, simple linear regression.						
102YMES	Measurement in Civil Engineering	Z	2				
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 t	to determine elastic and deformation properties of building materials and structures, measurement and spectral analysis of s	sound, noise and v	vibrations,				
measurement of optical	properties of materials, transmittance and reflectance of materials, determination of photometric and spectral characteristics	s of light sources,	measurement of				
thermophysical paramet	ters of building materials						
122YBPP	Construction Safety Code	Z	2				
Healh and safety laws.	. Norks 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. But	ilding information model in the life cycle of the building - information required during the design part, during construction and	during use of the f	finished building.				
124YKSD	Complex Structural Detail	Z	2				
The aim of the course is	The aim of the course is to extend the knowledge gained in previous courses - it is intended for students who have already reached advanced level of knowledge about structural						
problems in buildings. T	problems in buildings. The content of the course is focused on the complex solution of construction details, following all legislative requirements and taking into account the maximum						
officiency and durability of the chosen solution.							

124YNAK Numerical Analysis of Building Structures	Z	2
The subject is focused on the practical modeling of various structural-static problems in particular. We will also focus on the problems of optimizing s	tructures. The goa	al is to learn how
to define a problem, convert it into a mathematical model, design a solution algorithm and write this algorithm in Excel or VBA. You'll learn how to us		
applications that you can use years from now. You will also definitely learn something about numerical modeling. I have been using Excel for work for		
you how to use it effectively not only in building analysis models. Do not expect great science, but rather a practical approach to the problems you w		
124YSPB Curtain Walls		2
Design principles for the design of roof coverings for sloping and steep roofs. The design of roof coverings in terms of requirements: building physical fire, acoustic, biological, chemical, lifetime and recycling. Principles of design of additional elements and details of roof coverings of flat, sloping and		
requirements and given boundary conditions.	steep roots base	u on the stated
132YMMO Modern Methods of Optimization	Z	2
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		_
however, practical applications in MATLAB environment are also conducted during exercises.		
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 contex	1	
difference and finite element methods are explained from the viewpoints of an engineering scientist and a mathematician.		
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 computing.		
133YPRK Failures and Rehabilitation of Concrete Structures	Z	2
The course focuses on the description of failures of concrete structures, explanation of the causes of these failures and the design of remedial measures are concreted at the design of remedial measures are concreted at the design of the de	sures. Methods of	strengthening
existing concrete structures are also discussed. Surface repairs, strengthening of contactors, strengthening of structural elements to the effects of b	ending moment a	nd 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-destru	•	
and reinforced concrete elements are introduced. The last chapters of the lectures are devoted to the real applications of concrete structures. The the	eoretical lectures a	ire accompanied
by exercises, where the students have the unique opportunity to try out the acquired knowledge in laboratory, including special tests.	7	0
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 s as the global analysis and check with respect to European design codes.		structure as well
134YPDK Additional Timber and Metal Structures	Z	2
Subject provides basic information regarding to design and application of supporting, working and industrial scaffolding systems. It is focused espec	1	
with European codes and on modelling of structures.	ally off doolgit full	
134YPNK Fire Resistance of Steel and Timber Structures	Z	2
The class gives introduction to fire safety and fire resistance of steel, steel-concrete composite and timber structural elements.		-
102POV1 Fire and Explosion 1	Z	2
Basic definitions of a fire, explosion and burning. Description, analysis and modeling of the forementioned processes. Temperature distribution field	-	
constructions. Pressure distribution field and shock waves, their origination and propagation. Dynamic effects of the shock waves. Tension and stres	s in building const	ructions and
materials caused by pressure waves and high temperatures. Fire extinguishing.		
122YMKS Construction Quality Controlling	Z	2
The course is divided into two parts: quality control of the project documentation in terms of compliance with the implementing regulations and quality	ty control of the w	orks carried out.
The scope of the subject is the quality control during the construction process with a focus on the quality of project documentation, monitoring of cruc		
progress of works, management of changes during implementation. Construction quality assurance tools. Technical standards and regulations. Construction quality assurance tools.		ontrol. Material
and product quality assurance. Listing of the most common errors at the level of project documentation and during the implementation of the constru-	uction delivery.	
123YCHS Chemistry in Civil Engineering	Z	2
This course is designed for students interested in the natural sciences, combining theoretical and practical skills in building chemistry, without chem	ical formulas and	equations. It
touches on issues related to the composition, preparation, and use of basic building materials. It extends the knowledge acquired in Chemistry.	7	0
123YNTP Numerical Analysis of Transport Processes Assessment of hygrothermal conditions in civil engineering problems. Basic description of porous space. Description of transport processes (heat a	Z	2
Classification of mathematical models (diffusion-, convection- and mixed type). Computational models for solution of transport problems in porous space	, ,	
Introduction to structure and composition of computer codes WUFI and HEMOT, solution of simple transport problems (heat and moisture). Initial ar		
significance and impact to analysis of transport problems.		liene principiee,
124YDRS Timber Buildings	Z	2
The aim is to present a complex overview on energy efficient timber structures. Basic theoretical and design principals are presented. The lectures are	1	
of timber structures: (i) heavy timber skeleton systems, (ii) light timber structures based on 2x4. (iii) CLT, (iv) log house. All technologies of timber str		
and building physics context of low energy and passive buildings.		
124YLOP Lightweight Building Envelope	Z	2
The subject introduces the basics needed for the design of light outer skins, glazed roofs and skylights, it is focused on material characteristics and	optimal selection	of glazing units,
their production and application. Students are introduced to the requirements for these constructions, the design principles and design principles of		-
concrete example of a design solution and a suitable material base Students are shown the possibilities of using glass in architecture, including real		
124YPFS Precast concrete structures	Z	2
Residential houses made of precast conrete panels, of which approx. 82 thousand were built in the period 1960-1995 do not meet the required exte		
developing society and in many cases require the implementation of regeneration and modernization interventions enabling their full use. The cours		
of renewal, reconstruction and modernization of precast houses, modernization of apartments in precast houses, on the issue of freeing parterres of p offices, fitness centers, etc. Renovation, modernization, or regenerations require the removal of functionally inadequate completion structures, techn		
in some cases, even demanding interventions in supporting structures. As part of the construction of communication networks, modernization of urban		
in some cases to carry out partial or complete demolition of a precast panel building. As part of the regeneration of precast panel housing estates, a	-	-
completion of precast houses. The implementation of the mentioned plans requires a survey and diagnostics of supporting and peripheral structures		
of the structural-technical condition and an assessment of the residual life of precast panel structures and buildings.		

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) houses in	n 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 19	th and 20th centur	ies. Multi-storey
brick tenement houses do not meet the current thermal, acoustic and other requirements, the requirements of a dynamically developing society to the	ne required extent,	and in many
cases require regeneration and modernization interventions, including the replacement of non-compliant and out-of-date structures and equipment en	abling 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 structures 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 th	eir parts. Furtherm	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 an int	egral 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, amou	int of ventilation ai	r, design of
air-handling unit and design of indoor systems.		
125YPMT Building services systems CAD, modelling and simulation	Z	2
Introductory course in computer aided modelling and design of building services systems.	1 1	
126YVSF Small Business Management	Z	2
The subject is divided into lectures 1 hour per week and exercises 1 hour per week. Lectures take place according to the course outline listed below		
their own business plan for a selected business activity according to the specified syllabus. They draw up a plan for a start-up business. Entrepreneu		
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	-	
auditorium.	plan in ponor poni	
132YPM1 Computer Analysis of Structures 1	Z	2
Static model of a structure. Computer codes RFEM-Dlubal, SCIA Engineer.		2
	7	2
132YSHK Statics and Reconstruction of Historical Structures	Z	_
Short overview of historical vaults and roof trusses. Static behaviour and most frequent causes of failure. Methods of reconstruction, changes in four	idation conditions	included. Most
frequent causes of failure of panel buildings. Visit to the historical part of Prague Castle.		
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 modelin	-	
choosing a suitable model. Practical procedures for the design and assessment of reinforced concrete structures using software tools. Principles and	d 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 fibre concretes, lightweight concrete, heavyweight concrete; their prop	erties and applicat	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 structures. Intro	oduction to nonline	ear modeling of
reinforced concrete structures. Preparation of input data for numerical models. Design of structures using MATLAB. Presentation of selected program	ns for the design c	f concrete
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	analysis, loads, de	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 stru		
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 de		
panes beams and fins, columns and walls, point-supported glass, as well as for glazing systems such as glass facades, canopies and roofs, stairs a		
properties of glass as structural material will be presented in comparison with other basic building materials, together with selected examples of glass	-	
details and connecting technology, relevant technical regulations, specification and current methods applied in design will be described. Worked examples of glass	0 0 11	•
for better understanding, and design project will help to fix specific knowledge.	npies will accomp	any the lectures
	7	0
134YTSK   Thin-Walled and Composite Structures	Z	2
The course includes advanced analysis and structural design of slender sections and cold-formed sections. Advanced structural design of steel-con-		
135YING Engineering geology	Z	2
Engineering geological survey methods. Geological and engineering geological maps and profiles. Foundation soils in terms of engineering geology		
waters. Rock mass - areas of discontinuities, their evaluation. Deposits of natural building materials. Landslides and slope protection. Engineering ge	ological survey for	r different types
of civil engineering structures. Challenges of urban geology. Engineering geology in environmental design and protection.		
135YPZU Underground structures in urban areas	Z	2
Geotechnical investigation, basic conceptions of rock classification and properties evaluation, laboratory and field testing, elements of calculations in	rock mechanics a	nd underground
construction, technology of underground constructions		
135YVZK Computer analysis in foundation engineering	Z	2
Numerical methods in CAD/CAM in geomechanics. Basic types of constitutive models of soil and rock mass behavior. Summary of PC geotechnical	software both in th	ne field of
conventional methods and in numerical modelling domain. Practical solutions of selected geotechnical problems.		
Name of the block: Povinná t. Josná výchova, sportovní kurzy		

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	•

#### 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

Credits

0

0

Ζ

Ζ

Scope

0+2

0+2

Semester

Ζ

L

Role

PT

PT

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

**Physical Education** 

**Physical Education** 

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:

TV1

TV2

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	<b>German 1</b> Svatava Boboková Bartíková <b>Svatava Boboková Bartíková</b> 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

# 104YCA1English 1Z1English 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<br/>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 -<br/>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<br/>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<br/>Petra, Nivenová Renata : Professional English for Civil Engineering (Units 1 - 5)Z1104YCN1German 1Z1

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	Z,ZK	2
English 2 Course code:	104YC2A Scope: 0 + 2 (practical sessions) Number of credits: 1 Final assessment: credit and exam The aim of the compulse	ory English course	e is to enhance
the knowledge of lexis a	nd grammar within the scope of the chosen field of study and university studies in general (Academic English); the overall fo	cus is on professi	onal language
(i.e., ESP - technical sty	le) and communicative competence within the construction industry. The course also seeks to teach students to read technic	al literature and to	o be able to
produce essential writte	n discourse and to express themselves in writing on issues in their field of study. The end of course requirements are a credi	t and an examinat	tion. Literature:
Horká Hana, Giormani S	Sandra, Martincová Petra, Nivenová Renata : Professional English for Civil Engineering (Units 6 10)		
104YC2N	German 2	Z.ZK	2

		_,	
The compulsory course	- German Language for Civil Engineering is aimed at practising professional vocabulary within the scope of the construction inc	lustry, understan	ding professional
exts, and learning the n	necessary presentation skills in order to present all relevant professional issues. The end-of-course requirement is a credit. Li	erature: A.Hanál	ková, J.Dressel:
Deutsch im Bauwesen			

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, Martin Mildner, 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 <b>Jan Pruška</b>	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

otarioj, projette			
123P02C	Structural design project 2C	KZ	6
In accordance with the	project proposal.		
124P02C	Structural design project 2C	KZ	6
Converting an architect	ural study of medium-scale building into a detailed design of a building structure based on static analysis, interaction of load-	bearing and non-l	oad-bearing
elements and building p	physics. Focus on complex approach to practical design, analysis and optimalization of a building structures. Design of varian	ts of the load-bea	ring system,
preliminary static analy	sis (calculation of load-bearing elements - slabs, columns, walls, etc), calculation of foundations, design of structures on the l	ouilding envelope	with respect to
thermal protection of bu	ildings, building physics, fire protection of buildings and protection against water and soil moisture. Elaboration of detailed draw	ings including floc	r plans, sections
and details.			
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	ical form of the pr	oject.
133P02C	Structural design project 2C	KZ	6
Elaboration of the struc	tural part of the project documentation for the given structure (part of the structure). The design of the selected variant of the	structure with reg	ard to the
requirements of other p	rofessions. Structural analysis and drawing documentation to the extent specified during consultations. The Department of A	rchitectural Engine	ering (K124)
and Geotechnics (K135	<li>collaborate in teaching in the course.</li>		
134P02C	Structural design project 2C	KZ	6
Design of steel / timber	load bearing building structure according to external requirements in relation to interaction of load bearing and final completion	on structural elem	ents. The project
is assigned by the semi	inar leader.		
135P02C	Structural design project 2C	KZ	6
Design, static calculation	n and drawing documentation of the building substructure	· ·	

#### 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 <b>Jan Pruška</b> 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

102BAPC	Bachelor Thesis	Z	12
in accordance with the	hesis proposal		
123BAPC	Bachelor Thesis	Z	12
In accordance with the	hesis 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	pond to the stude	nt's knowledge
acquired during bacheld	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 r	esult 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 aspect	ts or to focus on practical application on an object within building services systems. Students consult the supervisor and spec	cialists from other	departments.
The thesis is presented	in front of the commission.		
132BAPC	Bachelor Thesis	Z	12
The assignment of the f	inal thesis is always individual based on the agreement of the teacher and the student. The vast majority of assignments are	connected with th	ne 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, p	rogramming and	others according
to the respective assign	ment.		
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 projec	t or research stud	y on the topic of
designing and application	on of a structural element with a variant comparative analysis or parametric study or performing and analysing experiments,	etc.	
134BAPC	Bachelor Thesis	Z	12
In this course, student f	ormulates a bachelor's thesis that is necessary to reach the bachelor's degree. This course is focused on steel or timber stru	ctural design.	
135BAPC	Bachelor Thesis	Z	12
The bachelor thesis con	, cludes the bachelor studies. The student demonstrates that he/she can apply the knowledge acquired during the study on a s	, pecific project. The	e bachelor thesis
is related to selected su	bjects of the study plan. For students of C spec.		
L			

#### List of courses of this pass:

Code	Name of the course	Completion	Credits
1000DPR	Industrial Training (3 weeks)	Z	0
Professional pr	actice is an important part of academic education in undergraduate degree programmes. The student will gain a basic understanding	of duties and prof	essional
respor	nsibilities. The professional practice evaluates the sum of all knowledge acquired through previous theoretical studies and is a proof c	of their acquisition.	
101KG01	Constructive Geometry	Z,ZK	5
Projections and p	rojective methods. Axonometry. Oblique projection. Orthogonal axonometry. Displaying prisms, cones, cylinders, pyramids, balls. Sin	ple problems in ax	onometry.
Basics of lighting	of solids and groupes of solids. Perspective projection. Curves, parametrisation. Frenet's trihedron, torsion and curvature. Helical su	rfaces. Quadrics. S	urfaces in
	building industry.		
101MA01	Mathematics 1	Z,ZK	6
	https://mat.fsv.cvut.cz/bubenik/mat1detail.htm		I
101MA02	Mathematics 2	Z,ZK	6
	https://mat.fsv.cvut.cz/vyuka/bakalari/eng/ls/MT02/	1 ,	I
101MA03	Mathematics 3	Z,ZK	6
	, https://mat.fsv.cvut.cz/vyuka/bakalari/eng/zs/		i.

101VACT	Applied Statistics	7	1 2
101YAST Basic notions and t	Applied Statistics terminology, random variable, descriptive and inferential statistics. Discrete and continuous random variables, normal distribution, log-	—	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
	methods, theory of estimation, hypotheses testing, simple linear regression.		
102BAPC	Bachelor Thesis	Z	12
'	in accordance with the thesis proposal		•
102FYI	Physics	Z,ZK	4
	visics 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 continuous of a material point (particle). Mechanical force fields. Gravitational field. Mechanical vibrations. Material deformation. Elastic waves. Ac Fundamentals of thermodynamics. Heat transfer.		
102POV1	Fire and Explosion 1	Z	2
Basic definitions of	f a fire, explosion and burning. Description, analysis and modeling of the forementioned processes. Temperature distribution field and essure distribution field and shock waves, their origination and propagation. Dynamic effects of the shock waves. Tension and stress ir materials caused by pressure waves and high temperatures. Fire extinguishing.	t its influence on	the building
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 v		
	paratus to determine elastic and deformation properties of building materials and structures, measurement and spectral analysis of sc otical properties of materials, transmittance and reflectance of materials, determination of photometric and spectral characteristics of li thermophysical parameters of building materials		
104YC2A	English 2	Z,ZK	2
1	code: 104YC2A Scope: 0 + 2 (practical sessions) Number of credits: 1 Final assessment: credit and exam The aim of the compulsory	•	1
-	exis and grammar within the scope of the chosen field of study and university studies in general (Academic English); the overall focus	-	
	ical style) and communicative competence within the construction industry. The course also seeks to teach students to read technical		
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 an		n. Literature
404/001	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 industi the necessary presentation skills in order to present all relevant professional issues. The end-of-course requirement is a credit. Litera		-
ionio, and rearring	Deutsch im Bauwesen		, u.u.cooti
104YCA1	English 1	Z	1
	bde: 104Y CA1 Scope: 0 + 2 (practical sessions) Number of credits: 1 Final assessment: credit The aim of the compulsory English course		e knowledg
-	nmar within the scope of the chosen field of study and university studies in general (Academic English); the overall focus is on profess		-
technical style) and	communicative competence within the construction industry. The course also seeks to teach students to read technical literature and technical literature and technical literature and technical literature and technical section are also seeks to teach students to read technical literature and technical section are also seeks to teach students to read technical section are also seeks to teach students to read technical section are also seeks to teach students to read technical section are also seeks to teach students to read technical section are also seeks to teach students to read technical section are also seeks to teach students to read technical section are also seeks to teach students to read technical section are also seeks to teach students to read technical section are also seeks to teach students to read technical section are also seeks to teach students to read technical section are also seeks to teach students to read technical section are also seeks to teach students to read technical section are also seeks to teach students to read technical section are also seeks to teach students to read technical section are also seeks to teach students to teach section are also seeks to teach students to teach section are also section are also seeks to teach section are also secti	o be able to prod	uce essentia
written discourse ar	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	a, Martincov
	Petra, Nivenová Renata : Professional English for Civil Engineering (Units 1 - 5)		
104YCN1	Petra, Nivenová Renata : Professional English for Civil Engineering (Units 1 - 5) German 1	Z	1
104YCN1	Petra, Nivenová Renata : Professional English for Civil Engineering (Units 1 - 5)	Z ry, understanding	1 profession
104YCN1 The compulsory contexts, and learning 105SVAI	Petra, Nivenová Renata : Professional English for Civil Engineering (Units 1 - 5) German 1 urse - German Language for Civil Engineering is aimed at practising professional vocabulary within the scope of the construction industr the necessary presentation skills in order to present all relevant professional issues. The end-of-course requirement is a credit. Litera Deutsch im Bauwesen Social Sciences and Architecture	Z ry, understanding ature: A.Hanákova Z,ZK	1 professiona á, J.Dressel 5
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104YCN1 The compulsory coutexts, and learning 105SVAI The subject combines of architecture. In the Roman law and its the Civil Code and systems, democra 122TSC 122YBPP Healh and 122YMKS The course is divide The scope of the sup progress of works, and produ 123BAPC 123CHE Introduction to ger inorganic binders, 123MAI The course provid 123P02C 123SH01 Building materials	Petra, Nivenová Renata : Professional English for Civil Engineering (Units 1 - 5) German 1 urse - Germa Language for Civil Engineering is aimed at practising professional vocabulary within the scope of the construction industr the necessary presentation skills in order to present all relevant professional issues. The end-of-course requirement is a credit. Litera Deutsch im Bauwesen Social Sciences and Architecture ines the teaching of several social science: 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 conceg oreretical interpretation is effectively combined with practical examples from economic reality. In the lectures devoted to law, a brief ove is institutions is supplemented by a well-founded interpretation of the construction, human rights and the labor code. Great attention is g 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 architecture from antiquity to postmodernism and deconstruction. Construction Safety Code safety laws. Works in the trenches. Works at the height. Coordinator H&,S when preparing and/or building constructions on a buil Construction Quality Controlling ed into two parts: quality control of the project documentation in terms of compliance with the implementing regulations and quality co- ubject is the quality control of the most common errors at the level of project documentation, monitoring of crucial pr management of changes during implementation. Construction quality assurance tools. Technical standards and regulations. Construction genes with a focus on the quality of project documentation of the construction genes with the thesis proposal In accordance with the thesis proposal In accorda	Z ry, understanding ature: A.Hanákova Z,ZK overview of the dev paid to selected p e theory of the sta atterpretation of the Z,ZK Z lding site. Fire sa Z ontrol of the works arameters of con ction quality cont onstruction delive Z Z,ZK emistry of building Is and to analytic Z,ZK rected properties KZ Z,ZK constructions. Intu	1         professiona         á, J.Dressel         5         evelopment of         provisions o         ate, political         e history of         6         2         fety.         2         scarried ou         struction an         on. Materials         al chemistry         12         4         g materials         al chemistry         5         for specific         6         5         roduction to         2

-	Numerical Analysis of Transport Processes	Z	2	
Classification of ma	grothermal conditions in civil engineering problems. Basic description of porous space. Description of transport processes (heat and r			
Classification of mathematical models (diffusion-, convection- and mixed type). Computational models for solution of transport problems in porous space basic description and application. Introduction to structure and composition of computer codes WUFI and HEMOT, solution of simple transport problems (heat and moisture). Initial and boundary conditions principles,				
	significance and impact to analysis of transport problems.		F	
123YTVM	Production technology of building materials	Z	2	
E	Basic building materials, different types of the production technology, energy consumption of the production, storage and transport, sa	fety at work.		
124BAPC	Bachelor Thesis	Z	12	
The topics of back	helor's theses are based on the needs of practice or the scientific research activities of the department, scope and difficulty correspondence of the department of the depart		knowledge	
4041/1/04	acquired during bachelor's studies. The supervisor of the bachelor's thesis can designate additional consultants to the stude		7	
124KK01	Non-Load Bearing Construction he subject deals with the complex design of indoor and high-rise buildings, especially the influence of marginal conditions on the choi	Z,ZK	7 structural	
	in emphasis on envelope structures. In the second, more extensive part, the principles of solutions for roofs, perimeter walls, opening f			
	structures for various types of buildings are clearly discussed.	0		
124P01C	Structural design project 1	KZ	6	
-	itectural study of a smaller or medium-sized building for housing, administration, education, culture or sports into a detailed design of	-		
-	raction of load-bearing and non-load-bearing elements and building physics. Focus on complex approach to practical design, analysis a	-	- 1	
-	of variants of the load-bearing system, preliminary static analysis (calculation of load-bearing elements - slabs, columns, walls, etc), cal the building envelope with respect to thermal protection of buildings, building physics, fire protection of buildings and protection agair		- 1	
	Elaboration of detailed drawings including floor plans, sections and details.		ioistaro.	
124P02C	Structural design project 2C	KZ	6	
Converting an ar	chitectural study of medium-scale building into a detailed design of a building structure based on static analysis, interaction of load-be	earing and non-loa	d-bearing	
	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 buil of buildings, building physics, fire protection of buildings and protection against water and soil moisture. Elaboration of detailed drawings			
inerna protection	and details.	s including noor plat	is, sections	
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, requirement	· · ·		
	istance separation, fire-fighting equipment; fire behaviour of the most used materials (wood, steel, concrete, plastics); protection of bu			
	eting, plasters and sprays, coatings, impregnates of wood, encasements, glued facings of mineral fibres); sandwiches from fire point c		- 1	
	passive protection of building structures - fire walls, fire glazed structures, fire ceiling, draft stops and seals; repressive measures - ele ces, smoke extract, hydrant systems. Healthy Buildings Constituents of indoor microclimate, hazardous substances (VOCs, HFRs, hea			
	uclides, etc.), their sources and health effects. Influence of building structures and materials on quality of indoor microclimate. Design	-		
	optimisation of indoor microclimate.	C C		
124PDRC	Failures, Deteriorations, Renovations	Z,ZK	3	
	ies, students are introduced to issues related to the protection of (not only) historic and heritage-protected buildings. In particular, these			
<b>3</b> ·	cts and influences from the point of view of load history; non-force effects and influences, effects of forced deformation; durability and re-			
chemical degradation	on and corrosion processes; failures, reconstruction and rehabilitation of foundation structures, brick structures, concrete structures (rein	norceu concrete), pr		
	structures, wooden structures of buildings, protection of buildings against increased humidity and diagnostics of buildings.			
124PS3C	structures, wooden structures of buildings, protection of buildings against increased humidity and diagnostics of buildings. Building Structures 3C		3	
124PS3C The subject deals	Building Structures 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 p	Z,ZK	3	
The subject deals	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 p in is focused on span structures of sloping roofs and hall buildings and on structural-static problems of multi-storey buildings. In the sec	Z,ZK	3 . In the first	
The subject deals part, the attentior	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 p n is focused on span structures of sloping roofs and hall buildings and on structural-static problems of multi-storey buildings. In the sec about the design of prefabricated indoor and multi-storey structures.	Z,ZK	3 . In the first s will learn	
The subject deals part, the attention 124PSI1	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 p is focused on span structures of sloping roofs and hall buildings and on structural-static problems of multi-storey buildings. In the sec about the design of prefabricated indoor and multi-storey structures. Building Structures 11	Z,ZK perimeter roof shell cond part, students Z	3 . In the first s will learn 4	
The subject deals part, the attention 124PSI1 The concept of des	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 p           n is focused on span structures of sloping roofs and hall buildings and on structural-static problems of multi-storey buildings. In the second building 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. Required	Z,ZK perimeter roof shell cond part, students Z ements for building	3 . In the first s will learn 4 structures,	
The subject deals part, the attention 124PSI1 The concept of des structural system,	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 p is focused on span structures of sloping roofs and hall buildings and on structural-static problems of multi-storey buildings. In the sec about the design of prefabricated indoor and multi-storey structures. Building Structures 11	Z,ZK perimeter roof shell cond part, students Z ements for building the structural desig	3 . In the first s will learn 4 structures, gn of walls,	
The subject deals part, the attention 124PSI1 The concept of des structural system, columns), floor stru	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 p           n is focused on span structures of sloping roofs and hall buildings and on structural-static problems of multi-storey buildings. In the second about 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. Require, interaction of elements, spatial effect of the structural system. Vertical load-bearing structures (functions, requirements, principles of structures)	Z,ZK perimeter roof shell cond part, students Z ements for building the structural desig nocrete ceilings, ste	3 . In the first s will learn 4 structures, gn of walls,	
The subject deals part, the attention 124PSI1 The concept of des structural system, columns), floor stru concret 124PSI2	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 p           n is focused on span structures of sloping roofs and hall buildings and on structural-static problems of multi-storey buildings. In the second about 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. Require, interaction of elements, spatial effect of the structural system. Vertical load-bearing structures (functions, requirements, principles of the structural design of vaults, wooden ceilings, reinforced concrete ceilings, ceramic conte ceilings). Expansion joints in load-bearing systems. Structures of single and multi-storey buildings, structural systems of lor           Building Structures 21	Z,ZK perimeter roof shell cond part, students Z ements for building the structural desig procrete ceilings, ste ng-span structures. Z,ZK	3 . In the first s will learn 4 structures, gn of walls, el and steel 4	
The subject deals part, the attention 124PSI1 The concept of des structural system, columns), floor stru concret 124PSI2 Staircases, sloping	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 p           n is focused on span structures of sloping roofs and hall buildings and on structural-static problems of multi-storey buildings. In the sec           about 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. Require, interaction of elements, spatial effect of the structural system. Vertical load-bearing structures (functions, requirements, principles of the structural design of vaults, wooden ceilings, reinforced concrete ceilings, ceramic co           te ceilings). Expansion joints in load-bearing systems. Structural systems of single and multi-storey buildings, structural systems of lor           Building Structures 21           gramps, lift shafts - requirements, structural and material solutions, basics of typology, design principles, construction details, railing. Bu	Z,ZK perimeter roof shell cond part, students Z ements for building the structural desig oncrete ceilings, ste ng-span structures. Z,ZK uilding foundations	3 . In the first s will learn 4 structures, gn of walls, el and steel 4 . foundation	
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The subject deals part, the attention 124PSI1 The concept of des structural system, columns), floor stru concret 124PSI2 Staircases, sloping conditions, types of	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 p           n is focused on span structures of sloping roofs and hall buildings and on structural-static problems of multi-storey buildings. In the sec           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 the structural design of vaults, wooden ceilings, reinforced concrete ceilings, ceramic co           te ceilings). Expansion joints in load-bearing systems. Structural systems of single and multi-storey buildings, structural systems of lor           Building Structures 2I           g ramps, lift shafts - requirements, structural and material solutions, basics of typology, design principles, construction details, railing. Bu           a expansion joints in building plinth area (construction details). Basement - solution of basement walls, requirements, protection al expansion joints in buildings - principles of joints design in bearing structures, thermal expansion, compensation of differences in see	Z,ZK perimeter roof shell cond part, students ements for building the structural desig oncrete ceilings, ste ng-span structures. Z,ZK uilding foundations - on against water, wa	3 . In the first s will learn 4 structures, gn of walls, el and steel 4 foundation aterproofing	
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124YKSD	Complex Structural Detail	Z	2
	course is to extend the knowledge gained in previous courses - it is intended for students who have already reached advanced level of	e	
problems in buildir	ngs. The content of the course is focused on the complex solution of construction details, following all legislative requirements and tak efficiency and durability of the chosen solution.	ing into account the	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 opt	imal selection of gla	
	and application. Students are introduced to the requirements for these constructions, the design principles and design principles of the		
	xample of a design solution and a suitable material base Students are shown the possibilities of using glass in architecture, including		
124YNAK	Numerical Analysis of Building Structures	Z	2
	used on the practical modeling of various structural-static problems in particular. We will also focus on the problems of optimizing structural static problems in particular. We will also focus on the problems of optimizing structural structural static problems in particular.	0	
	slem, 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	-	
	se 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
_	ises made of precast conrete panels, of which approx. 82 thousand were built in the period 1960-1995 do not meet the required exter	it of the current dyr	
developing society	and in many cases require the implementation of regeneration and modernization interventions enabling their full use. The course is	focused on the cur	rrent issues
	truction and modernization of precast houses, modernization of apartments in precast houses, on the issue of freeing parterres of preci		-
	nters, etc. Renovation, modernization, or regenerations require the removal of functionally inadequate completion structures, technica		
	en demanding interventions in supporting structures. As part of the construction of communication networks, modernization of urban de carry out partial or complete demolition of a precast panel building. As part of the regeneration of precast panel housing estates, an e		-
	carry out partial of complete demonstron of a precase panel building. As part of the regeneration of precase panel housing estates, an e cast houses. The implementation of the mentioned plans requires a survey and diagnostics of supporting and peripheral structures, jo		
	of the structural-technical condition and an assessment of the residual life of precast panel structures and buildings.	into of parts and ar	revaluation
124YRHS	Reconstruction of Historical Building Structures	Z	2
_	the second half of the 19th century by 1960, more than 250 thousand of two- to five-story brick apartment (mainly rental) houses in tra	I – I	_
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 a	and 20th centuries.	Multi-storey
brick tenement he	ouses do not meet the current thermal, acoustic and other requirements, the requirements of a dynamically developing society to the	required extent, an	nd in many
	neration and modernization interventions, including the replacement of non-compliant and out-of-date structures and equipment enabli	•	
	urrent issue of renewal, reconstruction and modernization of brick multi-storey rental apartment buildings, on historical structures and ma		0
	tures and materials of historic brick residential buildings, their residual life, failures and reconstruction of historical buildings and their   ssue of improving the well-being of the internal environment, the replacement of finishing structures, opening fillings, etc. as an integr		
	these buildings.	ai part or the mode	
124YSPB	Curtain Walls	Z	2
	or the design of roof coverings for sloping and steep roofs. The design of roof coverings in terms of requirements: building physical, wa	I – I	
fire, acoustic, biol	ogical, chemical, lifetime and recycling. Principles of design of additional elements and details of roof coverings of flat, sloping and ste	eep roofs based on	the stated
	requirements and given boundary conditions.		
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 Ser	vices Systems. The	e thesis can
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 Ser aspects or to focus on practical application on an object within building services systems. Students consult the supervisor and specia	vices Systems. The	e thesis can
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self-employed person and a legal entity, e.g. Ltd. The financial plan is prepared in Excel, and the credit condition is the presentation of the business plan in power point in front of the

132ANKC			
	Analysis of Structures	Z,ZK	5
Analyses of statica	ally determinate and statically/deformable indeterminate structures, concerning live loads solution, stresses in thin-wall beams, analy: formulation of deformation method, principles of FEM, models for a beam on elastic foundation and stability of structures.	sis of walls and p	ates, matrix
132BAPC	Bachelor Thesis	Z	12
	the final thesis is always individual based on the agreement of the teacher and the student. The vast majority of assignments are cor	_	1
•	of the respective employee. The output of the solution may be a brief research study of the given problem, experimental activity, progr to the respective assignment.		
132PRPE	Strength of Materials	Z,ZK	6
	e theory of elasticity: stress and strain of straight beams subjected to bending and free torsion, ultimate plastic capacity of a member of the of straight compression members. Basic assumptions, quantities, and equations describing the stress and strain state in 3D conti		
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 force structures. Trusses. Reaction forces applying the principle of virtual work.	s. Compound two	-dimensiona
132SM02	Structural Mechanics 2	Z,ZK	6
	agrams of simple statically determinate plane structures and compound two-dimensional structures. Multiaxially loaded cantilever. De		stress and
	positions of its distribution in a cross section. Equivalence of internal forces. Geometry of mass and areas, centre of gravity and mom		
132SM3	Structural Mechanics 3 proce method for the solution of reactions and internal forces on statically indeterminate beams, frames, and truss structures. Calculation	Z,ZK	5
Delormation and to	frames, and truss structures using the principle of virtual works.	on or displacement	Its of beams
132YMMO	Modern Methods of Optimization	Z	2
	d at an overview of numerical optimization methods applicable not only in the Civil Engineering area. The emphasis is put more on the in	_	
	however, practical applications in MATLAB environment are also conducted during exercises.		01 1
132YNMI	Numerical Methods in Engineering Practice	Z	2
The course is focus	sed on basic numerical methods for solving large sets of algebraic equations and boundary or initial value problems. In the context of	differential equation	ons, the finit
	difference and finite element methods are explained from the viewpoints of an engineering scientist and a mathematician.		
132YPM1	Computer Analysis of Structures 1	Z	2
122/0//4	Static model of a structure. Computer codes RFEM-Dlubal, SCIA Engineer.	7	2
132YPV1	Programming in C++ for Engineering Calculations 1 Introduction to C++ programming, non-objective primer of the language, basic algorithms used in the engineering computing	Z	2
132YSHK	Statics and Reconstruction of Historical Structures	<sup>g.</sup> Z	2
	historical vaults and roof trusses. Static behaviour and most frequent causes of failure. Methods of reconstruction, changes in foundation of the static behaviour and most frequent causes of failure.		
	frequent causes of failure of panel buildings. Visit to the historical part of Prague Castle.		
133BAPC	Bachelor Thesis	_	1
100DAI O	Dachelor Thesis	Z	12
A bachelor thesis is	s the 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 or	1
A bachelor thesis is des	s the qualification thesis of a bachelor's degree. It can take the form of processing the structural part of the building design project or igning and application of a structural element with a variant comparative analysis or parametric study or performing and analysing ex	research study or periments, etc.	the topic o
A bachelor thesis is des	s the qualification thesis of a bachelor's degree. It can take the form of processing the structural part of the building design project or igning and application of a structural element with a variant comparative analysis or parametric study or performing and analysing ex Concrete and Masonry Structures 1	research study or periments, etc. Z,ZK	the topic o
A bachelor thesis is des 133BK01 The subject is focu	s the qualification thesis of a bachelor's degree. It can take the form of processing the structural part of the building design project or igning and application of a structural element with a variant comparative analysis or parametric study or performing and analysing ex Concrete and Masonry Structures 1 used on the design of concrete elements and constructions of multi-storey buildings - it follows on from the subject Fundamentals of S	research study or periments, etc. Z,ZK Structural Design.	the topic o
A bachelor thesis is des 133BK01 The subject is focu of the course is the	s the qualification thesis of a bachelor's degree. It can take the form of processing the structural part of the building design project or igning and application of a structural element with a variant comparative analysis or parametric study or performing and analysing ex Concrete and Masonry Structures 1 used on the design of concrete elements and constructions of multi-storey buildings - it follows on from the subject Fundamentals of S addition and generalization of procedures for verifying the load-bearing capacity of reinforced concrete structural elements for cases of	research study or periments, etc. Z,ZK Structural Design. bending, shear, a	the topic c
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133YPRK	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		0 0	
existing concrete structures are also discussed. Surface repairs, strengthening of contactors, strengthening of structural elements to the effects of bending moment and shear, and				
foundation structures are discussed. The course appropriately combines theoretical approaches with common practice.				
133YTB	Technology of Concrete II	Z	2	
	the concrete components and their influence on the concrete properties are presented. Furthermore, destructive and non-destructive crete elements are introduced. The last chapters of the lectures are devoted to the real applications of concrete structures. The theore	•		
	by exercises, where the students have the unique opportunity to try out the acquired knowledge in laboratory, including special		oompanioa	
134BAPC	Bachelor Thesis	Z	12	
In this co	burse, student formulates a bachelor's thesis that is necessary to reach the bachelor's degree. This course is focused on steel or timb	er structural desigr	ı.	
134DK01	Timber Structures 1	Z,ZK	5	
	presentation of timber structures use in building industry. Wood and wood-based materials properties. Safety of timber structures desi			
	cross section design of simple members. Connections of timber structures. Glued joints. Basic structural systems. Fire design. Protect	1		
134NNKO	Design of Supporting StructuresI - Steel	Z,ZK	3	
The basics of desig	gning steel, steel-concrete and wooden load-bearing structures according to applicable standards, including the determination of load	effects, design diffe	rences due	
134OK01	to the specific properties of individual materials. Steel Structures 1	Z.ZK	6	
	aims to expand the knowledge acquired in the subject NNK and concerning design of basic steel structures. In the theoretical part are	I ' I	-	
	res including classification from view of necessities of nonlinear analyses. Design of steel elements is widen for global analysis method	-	- 1	
	ms/columns and cold-formed thin-walled elements. The main part of the subject deals with complex design of multi-storey steel buildi			
	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 / tir	nber 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	
Introduction to su	stainable use of wood in construction with respect to previous courses. Theoretical methods of structural design and design of structure	ures composed fror	n different	
4247/1400	materials. Principles of strengthening and repairing of timber structures.	7		
134YMOD	Numerical Modeling of Steel and Timber Structures students with the basis of modelling od steel and timber structures. Students manage basis of simulation during the creation of static		2	
	as the global analysis and check with respect to European design codes.		luie as well	
134YNKS	Glass Structures	Z	2	
	ding to introduce the students the field of structural applications of glass and to give them some specific skills for calculation and detailin	–		
	d fins, columns and walls, point-supported glass, as well as for glazing systems such as glass facades, canopies and roofs, stairs an			
properties of glas	as as structural material will be presented in comparison with other basic building materials, together with selected examples of glass	/glazing application	is. Design	
details and connec	ting technology, relevant technical regulations, specification and current methods applied in design will be described. Worked example	es will accompany	the lectures	
	for better understanding, and design project will help to fix specific knowledge.		_	
134YPDK	Additional Timber and Metal Structures	Z	2	
Subject provides b	asic information regarding to design and application of supporting, working and industrial scaffolding systems. It is focused especialy with European codes and on modelling of structures.	on design rules in a	accordance	
134YPNK	Fire Resistance of Steel and Timber Structures	Z	2	
13417101	The class gives introduction to fire safety and fire resistance of steel, steel-concrete composite and timber structural elemen	I – I	2	
134YTSK	Thin-Walled and Composite Structures	Z	2	
	es advanced analysis and structural design of slender sections and cold-formed sections. Advanced structural design of steel-concre			
135BAPC	Bachelor Thesis	Z	12	
The bachelor thesi	s concludes the bachelor studies. The student demonstrates that he/she can apply the knowledge acquired during the study on a speci	ific project. The bac	helor thesis	
	is related to selected subjects of the study plan. For students of C spec.			
135GM01	Geomechanics 1	Z	3	
	s on the understanding of basic geological laws and principles in relation to architecture, civil engineering and urban planning. Empha	-		
	ical processes, both endogenous and exogenous, on the rock environment and how the geological situation affects the design of structure that the second structure of a situation of the second structure of a situation of the second structure of a situation of the second structure of the second s			
the rock environm	ent. At the same time, attention is paid to the technical properties of rocks with regard to their practical applications. The course also i the regional geology of the Czech Republic.	includes a brief intr	oduction to	
135GM2I	Geomechanics 2I	Z,ZK	5	
	jils, basic properties of soils, water in soil, strength and deformation properties of soils and their determination, improvement of soil p			
135P02C	Structural design project 2C	KZ	6	
	Design, static calculation and drawing documentation of the building substructure		Ŭ	
135YING	Engineering geology	Z	2	
Engineering geol	ogical survey methods. Geological and engineering geological maps and profiles. Foundation soils in terms of engineering geology a	nd hydrogeology. A	ggressive	
waters. Rock mass	s - areas of discontinuities, their evaluation. Deposits of natural building materials. Landslides and slope protection. Engineering geolo	• •	erent types	
	of civil engineering structures. Challenges of urban geology. Engineering geology in environmental design and protection.		_	
135YPZU	Underground structures in urban areas	Z	2	
Geotechnical inves	tigation, basic conceptions of rock classification and properties evaluation, laboratory and field testing, elements of calculations in roc construction, technology of underground constructions	K mechanics and u	naerground	
135YVZK	Computer analysis in foundation engineering	Z	2	
	nods in CAD/CAM in geomechanics. Basic types of constitutive models of soil and rock mass behavior. Summary of PC geotechnical			
	conventional methods and in numerical modelling domain. Practical solutions of selected geotechnical problems.			
135ZS01	Foundations 1	Z,ZK	7	
	he subject, literature, design principles, geotechnical categories Strength and deformation characteristics of foundation soils, slab fou			
	ation of bearing capacity and settlement of flat foundations Deep foundations - typology, pile foundations, drilled and driven pile technology			
	ests Determination of bearing capacity of transversely loaded piles, pile group Micropiles, anchors, technology Conventional and jet g			
Construction pits, t	echnology of shoring of construction pits Principles for the design and assessment of shoring structures, earth pressure, water effect Ca pressure dependent methods Dewatering of construction pits Protection of foundation structures against the effects of aggressive en	-	structures,	
	The same development of the water of the source of the sou	WO CHINE HIS		

136DSUZ	Transport Structures and Urban Planning	Z,ZK	7		
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 urb	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 Structure	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, ea	rthwork - dimensic	ons, shapes,		
U U	roads, division and marking, definition of MK space, differences in design, operation and equipment. Carriageway, division, design pu				
junctions and cross	ings. Transport Structures - Rail transport (RT): Introduction to basic terminology, Issues of railway crossings from the point of view of s	security, design an	d operation.		
	tory, principles of tram track construction, interaction with the environment. Metro as a system of urban rail transport. Basic principles	•			
Railway constructio	ns - 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 with	n issues of hydrostatics and hydrodynamics with aiming at civil engineering applications. There are analysed tasks related to hydrosta	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 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 lectu	ires 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.					
154SG01	Land Surveying in Civil Engineering	Z,ZK	6		
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					
TV1	Physical Education	Z	0		
TV2	Physical Education	Z	0		

For updated information see <u>http://bilakniha.cvut.cz/en/FF.html</u> Generated: day 2025-07-13, time 11:27.