Study plan

Name of study plan: Stavební inženýrství, specializace Pozemní stavby

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:

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

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

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 policy, political science and law - with an overview of the development of architecture. Within economics, students will become familiar with basic economic concepts, the essence of economic and social policy and the place of construction in the economic structure. The content of the lectures on law is an overview of the institutions of Roman law, an interpretation of the constitution, human rights and selected legal norms, especially the new construction law. The political science part outlines the development of political thought in antiquity and in the period from the Renaissance to the present. Lectures on the history of architecture and construction provide a comprehensive explanation of the history of architecture from antiquity to postmodernism and deconstruction. 123CHE Chemistry Z,ZK Δ Introduction to general chemistry - chemical bond, compounds, reactions, equilibrium. Chemistry of environment - water, atmosphere, pedosphere. Chemistry of building materials inorganic binders, glass, ceramic, metals, natural polymers, wood, synthetic polymers on C and Si basis. Introduction to degradation of building materials and to analytical chemistry.

132SM01	Structural Mechanics 1	Z,ZK	6		
Concurrent forces, force	systems acting on rigid bodies in space/plane, moment of a force about a point and line. Supports of a rigid body, reaction for	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	processes, both endogenous and exogenous, on the rock environment and how the geological situation affects the design of s	tructures and thei	r interaction with		
the rock environment. At the same time, attention is paid to the technical properties of rocks with regard to their practical applications. The course also includes a brief introduction to					
the regional geology of	the Czech Republic.				

Code of the group: BJ20190200

Name of the group: Stavební inženýrství, varianta J, 2. semestr Requirement credits in the group: In this group you have to gain at least 28 credits Requirement courses in the group: In this group you have to complete at least 6 courses Credits in the group: 28 Note on the group:

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

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

101MA02 Mathematics 2	Z,ZK	6					
https://mat.fsv.cvut.cz/vyuka/bakalari/eng/ls/MT02/							
102FYI Physics	Z,ZK	4					
This is a basic physics course for students of the study programmes Civil Engineering; Management and Economics in Construction. The course focuses on mechanics and basic							
thermodynamics. The following areas are covered in the course: Mechanics of material points (particles) and deformable bodies. Discrete and continu	ous model of ma	atter. Kinematics					
and dynamics of a material point (particle). Mechanical force fields. Gravitational field. Mechanical vibrations. Material deformation. Elastic waves. Aco	oustics. Hydrome	chanics.					
Fundamentals of thermodynamics. Heat transfer.							
123SH01 Building Materials	Z,ZK	5					
Building materials - basis course. Clasification of the materials. Structure of materials. Main properties of materials. Application of materials in building	constructions.	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 construction industry. Students will be introduced to data formats, data standards, intellectual property issues, working with digitiz	zed documents, r	aster and vector					
graphics, open data sources in the Czech Republic, ICT and enterprise systems, information systems for the construction industry, but also the context of	of BIM in the curr	ent construction					
industry in relation to the entire project life cycle and its specifics (delivery, expert focus, phases of construction projects, etc.) The theoretical knowled	dge is compleme	nted by practical					
exercises aimed at mastering and understanding the basic principles of object-oriented parametric modelling.							
132SM02 Structural Mechanics 2	Z,ZK	6					
Internal forces diagrams of simple statically determinate plane structures and compound two-dimensional structures. Multiaxially loaded cantilever. De	efinition of norma	al stress and					
prepositions of its distribution in a cross section. Equivalence of internal forces. Geometry of mass and areas, centre of gravity and moments of inertia.							
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							

Code of the group: BJ20190300 Name of the group: Stavební inženýrství, varianta J, 3. semestr Requirement credits in the group: In this group you have to gain at least 30 credits Requirement courses in the group: In this group you have to complete at least 6 courses Credits in the group: 30 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
101MA03	Mathematics 3 Iva Malechová, Jozef Bobok, Michal Beneš, Ond ej Zindulka, Petr Ku era, Zden k Skalák, Martin Hála, Martin Soukenka, Petr Mayer, Michal Beneš Michal Beneš (Gar.)	Z,ZK	6	3P+2C	Z,L	Z
124PSI1	Building Structures 1I Ctislav Fiala, Jan R ži ka, Petr Hájek, Jaroslav Vychytil, B la Stib rková Jan R ži ka Petr Hájek (Gar.)	Z	4	2P+1C	Z	Z
132PRPE	Strength of Materials Petr Kabele, Michal Šejnoha, Milan Jirásek, Jan Vorel, Eva Novotná, Martin Došká, Martin Horák, Martin Lebeda, Barbora Hálková, Milan Jirásek Petr Kabele (Gar.)	Z,ZK	6	3P+2C	Z,L	Z
135GM2I	Geomechanics 2I Jan Salák, Ji í Koš ál, Martin Vaní ek, Ivan Vaní ek Ivan Vaní ek Jan Salák (Gar.)	Z,ZK	5	2P+1C	Z	Z
141HYA	Hydraulics Michal Dohnal, Aleš Havlík, Tomáš Picek, Václav Matoušek, Petr Sklená, Martin Fencl, Anna Špa ková, Jakub Novotný, Vojt ch Bareš, Václav Matoušek Michal Dohnal (Gar.)	Z,ZK	5	2P+2C	Z,L	Z
142VIZP	Water and Environmental Engineering Aleš Havlík, Martin Fencl, Michal Sn hota, Petr Nowak, Tomáš Dostál, Martin Do kal, Martin Šanda, Pavel Fošumpaur, Bohumil 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/v	yuka/bakalari/eng/zs/				
124PSI1	Building Structures 1I	Z	4		
The concept of design of	f building structures with a comprehensive consideration of the functional requirements imposed on individual elements. Re	quirements for bui	lding structures,		
structural system, intera	action of elements, spatial effect of the structural system. Vertical load-bearing structures (functions, requirements, principles	of the structural d	esign of walls,		
	es (functions, requirements, principles of the structural design of vaults, wooden ceilings, reinforced concrete ceilings, cerami Insion joints in load-bearing systems. Structural systems of single and multi-storey buildings, structural systems of long-span	•	s, steel and steel		
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 men	nber in bending, c	ritical loads and		
buckling lengths of strai	ght compression members. Basic assumptions, quantities, and equations describing the stress and strain state in 3D continu	um, plates and w	alls.		
135GM2I	Geomechanics 2I	Z,ZK	5		
Formation of soils, basic	c properties of soils, water in soil, strength and deformation properties of soils and their determination, improvement of soil p	roperties, applicat	ion tasks		
141HYA	Hydraulics	Z,ZK	5		
A course deals with issu	es of hydrostatics and hydrodynamics with aiming at civil engineering applications. There are analysed tasks related to hydr	ostatic and hydrod	dynamic loading		
of structures, pipeline fle	ow, 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 par	ticular, emphasis i	s placed on the		
practical aspects of water and environmental engineering in close relation to other branches of civil engineering. The course is taught in the form of lectures and tutorials. The lectures					
are divided thematically	into 20 blocks according to the different branches of the discipline (13 times water engineering and 7 times environmental e	ngineering). In the	exercises,		
students work on basic problems in the field of hydrology, water supply and water structures, especially dams, hydropower and flood issues. All 4 "water" departments of K14x are					
involved in teaching the	course.				

Code of the group: BJ20190400

Name of the group: Stavební inženýrství, varianta J, 4. semestr Requirement credits in the group: In this group you have to gain at least 30 credits Requirement courses in the group: In this group you have to complete at least 6 courses Credits in the group: 30 Note on the group:

Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their Code Completion Credits Scope Semester Role members) Tutors, authors and guarantors (gar.) **Building Structures 2I** 124PSI2 2P+1C L Z,ZK 4 Ζ Ctislav Fiala, Petr Hájek, Malila Noori, Veronika Ka ma íková, Jaroslav Vychytil, Tereza Pavl , Ji í Pazderka, Ji í Nová ek **Ji í Pazderka** Ji í Pazderka (Gar.) **Economics and Management** 126EKMN Eduard Hromada, Martin ásenský, Božena Kade ábková, Petr Kal ev, Pavlína Píchová, Pavlína Píchová **Eduard Hromada** Eduard Hromada (Gar.) Z,ZK 7 4P+2C Ζ Structural Mechanics 3 Tomáš Koudelka, Petr Kabele, Michal Šejnoha, Milan Jirásek, Jan Vorel, Eva 132SM3 Z,ZK 5 2P+2C L,Z Ζ Novotná, Martin Horák, Michal Šmejkal, Tomáš Krej í, Aleš Jíra Petr Kabele (Gar.) Fundamentals of Structural Design - Concrete 133NNKB Z,ZK 4 2P+1C L,Z Ζ Martin Tipka, Radek Štefan, Jitka Vašková Martin Tipka Martin Tipka (Gar.)

134NNKO	Design of Supporting StructuresI - Steel František Wald, Michal Jandera, Martina Eliášová Martina Eliášová Martina Eliášová (Gar.)	Z,ZK	3	2P+1C	L	z	
136DSUZ	Transport Structures and Urban Planning Ludvík Vébr, František Pospíšil, Ond ej Bret František Pospíšil Ludvík Vébr (Gar.)	Z,ZK	7	5P+1C	L,Z	Z	
Characteristics of	the courses of this group of Study Plan: Code=BJ20190400 Name	=Stavební ir	nženýrstv	ví, variant	a J, 4. se	mestr	
124PSI2	Building Structures 2I			Z	,ZK	4	
	s, lift shafts - requirements, structural and material solutions, basics of typology, design prin	•		•	•		
	dations, requirements, building plinth area (construction details). Basement - solution of bas		•				
	nsion joints in buildings - principles of joints design in bearing structures, thermal expansic	on, compensation	of different	ces in settler	nent, constru	uction 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	n industry and to	familiarize	them with ba	sic economi	c terms and	
their practical application	ns. Students will be prepared to solve basic construction-management problems in the con-	struction industry	. They will a	cquire basic	information	about the	
method of pricing constr	uction works and master the basic methods of managing a construction company. Emphas	is is placed on u	nderstandin	g the princip	le of econor	nic thinking in	
relation to the construction	on industry.						
132SM3	Structural Mechanics 3			Z	,ZK	5	
Deformation and force m	nethod for the solution of reactions and internal forces on statically indeterminate beams, fra	ames, and truss	structures.	Calculation o	f displaceme	ents of beams,	
frames, and truss structu	ires using the principle of virtual works.						
133NNKB	Fundamentals of Structural Design - Concrete			Z	,ZK	4	
The content of the subje	ct are the basics of load-bearing concrete structures design and the design methodology a	according to valid	standards,	including the	determinat	ion of load	
effects. The properties o	f concrete, the production and testing of concrete, the properties of concrete reinforcement	and its interaction	on with cond	crete are disc	cussed. Desi	gn and	
reinforcement of concret	e structures for basic types of loading (bending, shear, pressure) are the main part of this of	course. An introd	uction to se	rviceability li	mit states is	in the end of	
this course. The course t	ollows the introductory subject of Civil Engineering program (Structural Mechanics, Elastic	ity and Strength,	Building Ma	aterials, Build	ding Structur	es).	
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	s, including the de	eterminatior	n of load effe	cts, design d	ifferences due	
to the specific properties	of individual materials.						
136DSUZ	Transport Structures and Urban Planning			Z	ZK	7	
	composed of 3 issues, which build on each other and complement each other. These are th	e area of transpo	ort structure	s (roads and	rail transpo	rt - scope 3+1)	
	anning and spatial planning (scope 2+0). Unlike the road construction and railroad constru			-			
Transport Structures - R	oads (R): Introduction to basic terminology in the part of roads, history. Road Act and relate	ed legislative and	technical re	egulations, th	eir impact o	n road design.	
Design categories of roa	ds and motorways, design speed, directional and elevation design of routes, cross-section	al layout of roads	s and motor	ways, earthv	vork - dimen	sions, shapes,	
drainage. Urban roads, o	livision and marking, definition of MK space, differences in design, operation and equipmen	nt. Carriageway, o	division, des	sign principle	s. Safety eq	uipment,	
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 - a	an introduction to the design and construction of a railway track in the conditions of the Czec	h Republic, the b	asic elemer	ts of the rail	way superstr	ucture. Spatial	
Planning (SP): Teaching	spatial planning and urban planning, spatial planning tools and procedures for their acquis	ition.					

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: BC202405

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 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
124STAO	Building Acoustics and Daylighting Jaroslav Vychytil, Ji í Nová ek Ji í Nová ek Ji í Nová ek (Gar.)	Z	3	2P+1C	Z	Р
124STTT	Hygrothermal Performance of Buildings Ji í Novák, Zdenko Malík, Zbyn k Svoboda, Jakub Diviš Ji í Novák Zbyn k Svoboda (Gar.)	ZK	3	1P+1C	Z	Р
132ANKC	Analysis of Structures Aleš Jíra, Dagmar Jandeková, Petr Konvalinka, Jan Zatloukal Petr Konvalinka Petr Konvalinka (Gar.)	Z,ZK	5	2P+2C	Z	Р
133BK01	Concrete and Masonry Structures 1 Martin Tipka, Jitka Vašková, Petr Bílý Petr Bílý Petr Bílý (Gar.)	Z,ZK	6	3P+2C	Z	Р
134OK01	Steel Structures 1 Michal Jandera Michal Jandera (Gar.)	Z,ZK	6	3P+2C	Z	Р
135ZS01	Foundations 1 Ji í Barták, Jan Masopust Jan Pruška Jan Kos (Gar.)	Z,ZK	7	3P+3C	Z	Р

Characteristics of the courses of this group of Study Plan: Code=BC202405 Name=Stavební inženýrství, specializace Pozemní stavby, 5.semestr

124STAO	Building Acoustics and Daylighting	Z	3		
Lighting technology dea	Is with two main parts, sun exposure and daylighting. In the first part, the listener will learn which objects are subject to requi	rements and wha	it are the options		
for verifying the time of insolation. This part also includes the connection of the results with possible boundary conditions. The second part deals with the assessment of daylight mainly					
in the interiors of building	gs with regard to the gradation of sky brightness, shading conditions and the characteristics of the room and the lighting open	ing. In building ac	oustics, students		
are first introduced to th	e concepts of sound and noise, sound perception, basic quantities, sound sources and corresponding limits. The next part of	f the course deals	s with sound		
propagation in free and	diffuse fields and sound propagation around barrier. Particular attention is paid to the sound insulation properties of partition	structures and so	ound absorbing		
structures.					
124STTT	Hygrothermal Performance of Buildings	ZK	3		
132ANKC	Analysis of Structures	Z,ZK	5		
Analyses of statically de	terminate and statically/deformable indeterminate structures, concerning live loads solution, stresses in thin-wall beams, and	alysis of walls and	d plates, matrix		
formulation of deformati	on 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 of	n the design of concrete elements and constructions of multi-storey buildings - it follows on from the subject Fundamentals of	of Structural Desig	gn. The content		
of the course is the addit	ion 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 n	ormal force, designing elements stressed by torsion, punching shear, assessment of slender compressed elements. Design	procedures are d	iscussed for		
individual types of struct	ures, including the choice of suitable calculation models and calculation methods and reinforcement principles.				
134OK01	Steel Structures 1	Z,ZK	6		
The course OK01 aims	o expand the knowledge acquired in the subject NNK and concerning design of basic steel structures. In the theoretical part a	are delivered poss	sibilities of global		
analysis of structures in	cluding 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/col	umns and cold-formed thin-walled elements. The main part of the subject deals with complex design of multi-storey steel bui	Idings and steel in	ndustrial halls.		
Final lectures concern la	rrge-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 foundations Limit states of flat					
foundations, calculation of bearing capacity and settlement of flat foundations Deep foundations - typology, pile foundations, drilled and driven pile technology Axial capacity of isolated					
piles, pile load tests Determination of bearing capacity of transversely loaded piles, pile group Micropiles, anchors, technology Conventional and jet grouting, underground walls					
Construction pits, technology of shoring of construction pits Principles for the design and assessment of shoring structures, earth pressure, water effect Calculation of shoring structures,					
pressure dependent me	thods 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 Ji í Pazderka 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 ty	pes 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	ation 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	Indations, design			
of structures on the built	ding envelope with respect to thermal protection of buildings, building physics, fire protection of buildings and protection agai	nst water and soi	l moisture.			
Elaboration of detailed	drawings including floor plans, sections and details.					
125TZ01	Building services systems 1	Z,ZK	5			
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 th	e courses NNK and BK01 and widens the knowledge to the necessary minimum for the bachalor studium branches C and K.1	-3.Masonry struc	tures - subjected			
to compression, bending, shear, reinforced masonry, strenghtening of masonry structures 4 6. Design of concrete structures to serviceability limit states: stress limitation, crack						
development and crack width limitation, deflections, application on waterproof structures 78.Introduction to pre-stressed concrete: design of pre-stressing, losses of pre-stressing,						
technology 912. Pre-cast concrete structures 13. Bridges: nomenclature in bridges, cross-section arrangement, loading, construction methods, Introduction to engineering 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					
	standards. Cross sectio	n design of simple members. Connections of timber structures. Glued joints. Basic structural systems. Fire design. Protection	of timber structur	es.	

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	Ρ
124PS3C	Building Structures 3C Hana Gattermayerová, Vladimír Ž ára Vladimír Ž ára Vladimír Ž ára (Gar.)	Z,ZK	3	2P+1C	Z	Ρ
1000DPR	Industrial Training (3 weeks) Jan R ži ka, Petr Hájek, Kate ina Sojková Michal Jandera Michal Jandera (Gar.)	Z	0	6C	Z,L	Ρ
125TZ02	Building Services Systems 2 Bohumír Garlík, 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

123MAI Materials Engineering Z,ZK 5 The course provides information on the building materials characterization and principles of designing and developing new types of materials having directed properties 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 or 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, phys						
building applications and structures. 124PDRC Failures, Deteriorations, Renovations 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 failures of the protection of (not only) historic and heritage-protected buildings.						
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 failures of the protection of (not only) historic and heritage-protected buildings. In particular, these are defects and failures of failures of the protection of (not only) historic and heritage-protected buildings. In particular, these are defects and failures of failures of the protection of (not only) historic and heritage-protected buildings.						
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, phys						
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 and corrosion processes; failures, reconstruction and rehabilitation of foundation structures, brick structures, concrete structures (reinforced concrete), prefabricated						
structures, wooden structures of buildings, protection of buildings against increased humidity and diagnostics of buildings.						
124PS3CBuilding Structures 3CZ,ZK3						
The subject deals with the complex design of load-bearing structures of roofing, indoor and multi-storey buildings and the structural-static effect of the perimeter roof shell. In the f						
part, the attention is focused on span structures of sloping roofs and hall buildings and on structural-static problems of multi-storey buildings. In the second part, students will learn						
about the design of prefabricated indoor and multi-storey structures.						
100ODPRIndustrial Training (3 weeks)Z0						
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 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 Martin Jiránek Martin Jiránek (Gar.)	Z,ZK	6	3P+2C	L	Р
126STMN	Construction Management Dana M š anová, Renáta Schneiderová Heralová, Václav Tatýrek, Jaroslava Tománková, Zita Prost jovská Martin ásenský Zita Prost jovská (Gar.)	Z,ZK	6	3P+2C	Z,L	Р

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

Fire Safety Analysis of fire - cr escape ways, distance separ (brickwork, concreting, plaste on the course fire; passive pr extinguishing devices, smoke aerosols, radionuclides, etc.)	Fire Safety Analysis of fire - course of fire, burning process, fire loading; legislation and European Standards; fire safety solutions - fire project, requirement for fire resistance of buildings, escape ways, distance separation, fire-fighting equipment; fire behaviour of the most used materials (wood, steel, concrete, plastics); protection of building materials against fire (brickwork, concreting, plasters and sprays, coatings, impregnates of wood, encasements, glued facings of mineral fibres); sandwiches from fire point of view; influence of claddings on the course fire; passive protection of building structures - fire walls, fire glazed structures, fire ceiling, draft stops and seals; repressive measures - electric fire signalling, stationary extinguishing devices, smoke extract, hydrant systems. Healthy Buildings Constituents of indoor microclimate, hazardous substances (VOCs, HFRs, heavy metals, moulds, microbes, aerosols, radionuclides, etc.), their sources and health effects. Influence of building structures and materials on quality of indoor microclimate.						
Overview of selected concep project product. Objectives, s management. Financial mana Regulations, the Act on the A business conditions. Busines	126STMN Construction Management Z,ZK 6 Overview of selected concepts. Methods to support project management. Legal standards, SN and ISO standards. The essential aspects of Project Management. Construction as a project product. Objectives, strategies, phases and surroundings of the construction project. Project manager role. Purchases and contracts in the project. Quality management, risk nanagement. Financial management and project evaluation. Feasibility study. Cost and resource management. Change procedures. The Act on Spatial Planning and Building Regulations, the Act on the Awarding of Public Contracts, and the definition of terms. Business obligation relationships, the conclusion of contracts, their form, and use of general pusiness conditions. Business public competition, its influence on the obligations of participants. Securing the commitment - contractual penalty, guarantee. The main contract types in construction - are contract for the conclusion of a future contract, purchase contract, contract for work, and content of the contract.						
	k: Compulsory elective courses of credits of the block: 8 ock: PV						
Code of the group: BC202407_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, Hana Kabrhelová, Karel Fazekas Jan R ži ka Jan R ži ka (Gar.)	Z	4	1P+3C	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 (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	
134YPNK	Fire Resistance of Steel and Timber Structures Zden k Sokol Zden k Sokol Zden k Sokol (Gar.)	Z	2	1P+1C	Z	PV	
102POV1	Fire and Explosion 1 Petr Semerák Petr Semerák (Gar.)	Z	2	1P+1C	Z	PV	
122YMKS	Construction Quality Controlling Rostislav Šulc, Pavel Svoboda, Tomáš Váchal, Linda Veselá Linda Veselá	Z	2	1P+1C	L	PV	

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

Characteristics of the courses of this group of Study Plan: Code=BC202407_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,	ہ log-normal distrib	ution. Statistical
methods, theory of estir	nation, hypotheses testing, simple linear regression.	-	
102YMES	Measurement in Civil Engineering	Z	2
As part of the course, st	udents will learn about modern measuring methods in the construction industry. In practical laboratory tasks, groups will try	to work with mode	rn measuring
devices and apparatus t	to determine elastic and deformation properties of building materials and structures, measurement and spectral analysis of s	ound, noise and v	ibrations,
measurement of optical	properties of materials, transmittance and reflectance of materials, determination of photometric and spectral characteristics	s of light sources, i	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 uses	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 o	during use of the f	inished building.
124YNAK	Numerical Analysis of Building Structures	Z	2
The subject is focused of	on the practical modeling of various structural-static problems in particular. We will also focus on the problems of optimizing s	tructures. The goa	I is to learn how
to define a problem, cor	nvert it into a mathematical model, design a solution algorithm and write this algorithm in Excel or VBA. You'll learn how to us	e Excel effectively	and write
applications that you ca	n use years from now. You will also definitely learn something about numerical modeling. I have been using Excel for work for	25 years and I wo	ould like to teach
you how to use it effective	vely not only in building analysis models. Do not expect great science, but rather a practical approach to the problems you wi	ill encounter in pra	ictice.
124YSPB	Curtain Walls	Z	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,	waterproofing, op	erational, static,
fire, acoustic, biological,	, chemical, lifetime and recycling. Principles of design of additional elements and details of roof coverings of flat, sloping and	steep roofs based	on the stated
requirements and given	boundary conditions.		
132YMMO	Modern Methods of Optimization	Z	2
The course is aimed at a	n overview of numerical optimization methods applicable not only in the Civil Engineering area. The emphasis is put more on the	e introduction of d	riving principles,
however, practical applie	cations 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	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
		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 measurements of the second structures are structured.	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	ictive testing meth	ods for concrete
and reinforced concrete elements are introduced. The last chapters of the lectures are devoted to the real applications of concrete structures. The the	oretical lectures a	are accompanied
by exercises, where the students have the unique opportunity to try out the acquired knowledge in laboratory, including special tests.		
134YMOD Numerical Modeling of Steel and Timber Structures	Z	2
	1	1
Subject familiarize students with the basis of modelling od steel and timber structures. Students manage basis of simulation during the creation of st	auc model of the	structure as well
as the global analysis and check with respect to European design codes.	<u> </u>	
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	ialy on design rule	es in accordance
with European codes and on modelling of structures.		
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.	I –	I –
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 a		
constructions. Pressure distribution field and shock waves, their origination and propagation. Dynamic effects of the shock waves. Tension and stress	s in building const	tructions 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 quali	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	ial parameters of	construction and
progress of works, management of changes during implementation. Construction quality assurance tools. Technical standards and regulations. Construction quality assurance tools.	struction quality co	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	7	2
This course is designed for students interested in the natural sciences, combining theoretical and practical skills in building chemistry, without chem	-	
touches on issues related to the composition, preparation, and use of basic building materials. It extends the knowledge acquired in Chemistry.		equations. It
123YNTP Numerical Analysis of Transport Processes	Z	2
Assessment of hygrothermal conditions in civil engineering problems. Basic description of porous space. Description of transport processes (heat a		
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 and	d boundary condi	itions principles,
significance and impact to analysis of transport problems.		
124YDRS Timber Buildings	Z	2
The aim is to present a complex overview on energy efficient timber structures. Basic theoretical and design principals are presented. The lectures are	focused on follow	, ing technologies
of timber structures: (i) heavy timber skeleton systems, (ii) light timber structures based on 2x4. (iii) CLT, (iv) log house. All technologies of timber str	uctures are prese	nted in structural
and building physics context of low energy and passive buildings.		
124YLOP Lightweight Building Envelope	Z	2
	1	
The subject introduces the basics needed for the design of light outer skins, glazed roofs and skylights, it is focused on material characteristics and	-	
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		1
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	nt of the current d	lynamically
developing society and in many cases require the implementation of regeneration and modernization interventions enabling their full use. The cours	e is focused on th	e current issues
of renewal, reconstruction and modernization of precast houses, modernization of apartments in precast houses, on the issue of freeing parterres of p	precast houses for	services, shops,
offices, fitness centers, etc. Renovation, modernization, or regenerations require the removal of functionally inadequate completion structures, techn	nical equipment, ir	nstallations and,
in some cases, even demanding interventions in supporting structures. As part of the construction of communication networks, modernization of urbar	n development, etc	c., it is necessary
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	in extension is als	o carried out, or
completion of precast houses. The implementation of the mentioned plans requires a survey and diagnostics of supporting and peripheral structures	s, joints of parts a	nd an evaluation
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 i	1	1
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 brick tenement houses do not meet the current thermal, acoustic and other requirements, the requirements of a dynamically developing society to the tenement houses do not meet the current thermal.		-
	-	-
cases require regeneration and modernization interventions, including the replacement of non-compliant and out-of-date structures and equipment en	-	
is focused on the current issue of renewal, reconstruction and modernization of brick multi-storey rental apartment buildings, on historical structures and		-
and aging of structures and materials of historic brick residential buildings, their residual life, failures and reconstruction of historical buildings and the	-	
is focused on the issue of improving the well-being of the internal environment, the replacement of finishing structures, opening fillings, etc. as an in	legral part of the r	nudernization 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, amount of the heat source is a source of the source of	unt of ventilation a	air, design of
air-handling unit and design of indoor systems.		
125YPMT Building services systems CAD, modelling and simulation	Z	2
Introductory course in computer aided modelling and design of building services systems.	1	I

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. Entreprene	•	
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	s plan in power poir	nt in front of the
auditorium.	-	
132YPM1 Computer Analysis of Structures 1	Z	2
Static model of a structure. Computer codes RFEM-Dlubal, SCIA Engineer.		
132YSHK Statics and Reconstruction of Historical Structures	Z	2
Short overview of historical vaults and roof trusses. Static behaviour and most frequent causes of failure. Methods of reconstruction, changes in for	undation 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 modeli	ing of structures. Pi	inciples for
choosing a suitable model. Practical procedures for the design and assessment of reinforced concrete structures using software tools. Principles a	•	·
verification of results. Practical examples.		
133YBSV Concretes with Special Properties	Z	2
High-strength concrete, fibre concrete, self-compacting concrete, shotcrete and fibreconcretes, lightweight concrete, heavyweight concrete; their pro-		
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. Init		_
reinforced concrete structures. Preparation of input data for numerical models. Design of structures using MATLAB. Presentation of selected progra		
structures.	and tor the design	
133YPNB Fire desgn og concrete and mnsory structures	7	2
The course is focused on fire resistance of concrete and masonry structures: concrete and concrete structures exposed to fire, design rules, therma	-	_
design methods, material properties of concrete and steel reinforcement at high temperatures, fire design of masonry structures.	ai alialysis, iuaus, u	lesign principles,
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 str materials. Principles of strengthening and repairing of timber structures.	uctures composed	from different
	7	0
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 d	•	•
panes beams and fins, columns and walls, point-supported glass, as well as for glazing systems such as glass facades, canopies and roofs, stairs		
properties of glass as structural material will be presented in comparison with other basic building materials, together with selected examples of glass as structural material will be presented in comparison with other basic building materials, together with selected examples of glass as structural material will be presented in comparison with other basic building materials, together with selected examples of glass as structural material will be presented in comparison with other basic building materials, together with selected examples of glass as structural material will be presented in comparison with other basic building materials, together with selected examples of glass as structural materials.	0 0 11	°
details and connecting technology, relevant technical regulations, specification and current methods applied in design will be described. Worked ex	amples will accomp	any the lectures
for better understanding, and design project will help to fix specific knowledge.		
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-co	ncrete composite is	
135YING Engineering geology	Z	2
Engineering geological survey methods. Geological and engineering geological maps and profiles. Foundation soils in terms of engineering geolog		
waters. Rock mass - areas of discontinuities, their evaluation. Deposits of natural building materials. Landslides and slope protection. Engineering g	geological survey fo	or 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	n rock mechanics a	and 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 geotechnica	al software both in t	he field of
conventional methods and in numerical modelling domain. Practical solutions of selected geotechnical problems.		
Name of the block. Device for the profession on entering furning		

Name of the block: Povinná t lesná výchova, sportovní kurzy Minimal number of credits of the block: 0 The role of the block: PT

Code of the group: BTV_POV

Name of the group: Povinná t lesná výchova

Requirement credits in the group:

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

Credits in the group: 0

Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
TV1	Physical Education	Z	0	0+2	Z	PT
TV2	Physical Education	Z	0	0+2	L	PT

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

TV1 Ph	nysical Education	Z	0
TV2 Ph	nysical Education	Z	0

Name of the block: Jazyky

Code of the group: BF20190201 J

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

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

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

Note on the aroup:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
104YCA1	English 1 Hana Horká, Petra Martincová, Petra Florianová, Sandra Giormani, Svatava Boboková Bartíková, V ra ermáková, Karolína Synková, Alexandra Steinerová, Elena Da eva, Svatava Boboková Bartíková Sandra Giormani (Gar.)	Z	1	2C	Z,L	J
104YCN1	German 1 Svatava Boboková Bartíková Svatava Boboková Bartíková Svatava Boboková Bartíková (Gar.)	Z	1	2C	Z,L	J

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

104YCA1	English 1	Z	1
English 1 Course cod	e: 104Y CA1 Scope: 0 + 2 (practical sessions) Number of credits: 1 Final assessment: credit The aim of the compulsory English c	ourse is to enhance	ce the knowledge
of lexis and grammar	within the scope of the chosen field of study and university studies in general (Academic English); the overall focus is on profe	ssional language	(i.e., ESP -
technical style) and c	ommunicative competence within the construction industry. The course also seeks to teach students to read technical literature a	and to be able to p	produce essential
written discourse and	to express themselves in writing on issues in their field of study. The end of course requirements are a credit. Literature: Horká H	ana, Giormani Sa	ndra, Martincová
Petra, Nivenová Rena	tta : Professional English for Civil Engineering (Units 1 - 5)		
104YCN1	German 1	Z	1
The compulsory cour	se - German Language for Civil Engineering is aimed at practising professional vocabulary within the scope of the construction in	dustry, understan	ding professional
texts, and learning th	e necessary presentation skills in order to present all relevant professional issues. The end-of-course requirement is a credit. L	iterature: A.Hanál	ková, J.Dressel:
Deutsch im Bauwese			

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 voliteIný jazyk, 3. semestr

104YC2A English 2

Z,ZK 2 English 2 Course code: 104YC2A Scope: 0 + 2 (practical sessions) Number of credits: 1 Final assessment: credit and exam The aim of the compulsory English course is to enhance the knowledge of lexis and grammar within the scope of the chosen field of study and university studies in general (Academic English); the overall focus is on professional language (i.e., ESP - technical style) and communicative competence within the construction industry. The course also seeks to teach students to read technical literature and to be able to produce essential written discourse and to express themselves in writing on issues in their field of study. The end of course requirements are a credit and an examination. Literature: Horká Hana, Giormani Sandra, Martincová Petra, Nivenová Renata : Professional English for Civil Engineering (Units 6 10) 7.7K

104YC2N German 2

The compulsory course - German Language for Civil Engineering is aimed at practising professional vocabulary within the scope of the construction industry, understanding professional texts, and learning the necessary presentation skills in order to present all relevant professional issues. The end-of-course requirement is a credit. Literature: A.Hanáková, J.Dressel: Deutsch im Bauwesen

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: BC202407_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
124P02C	Structural design project 2C Lenka Hanzalová, Ji í Pazderka, David Šulc, Tomáš ejka, Eva Burgetová Ji í Pazderka Ji í Pazderka (Gar.)	КZ	6	4C	z	S1
125P02C	Structural design project 2C Stanislav Frolík Stanislav Frolík (Gar.)	KZ	6	4C	Z	S1
133P02C	Structural design project 2C <i>Jitka Vašková</i>	KZ	6	4C	Z	S1
134P02C	Structural design project 2C Michal Jandera Michal Jandera (Gar.)	KZ	6	4C	Z	S1
135P02C	Structural design project 2C Jan Salák, Ji í Pazderka, Jan Kos, Jan Pruška Jan Pruška	KZ	6	4C	Z	S1

Characteristics of the courses of this group of Study Plan: Code=BC202407_1 Name=Stavební inženýrství, specializace Pozemní stavby, projekt

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-	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 analysis (calculation of load-bearing elements - slabs, columns, walls, etc), calculation of foundations, design of structures on the building envelope with respect to					
thermal protection of buildings, building physics, fire protection of buildings and protection against water and soil moisture. Elaboration of detailed drawings including floor plans, sections					
and details.					
125P02C	Structural design project 2C	KZ	6		
Independent project in t	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 struct	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	eering (K124)		
and Geotechnics (K135	c) collaborate in teaching in the course.				
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	nar leader.				
135P02C	Structural design project 2C	KZ	6		
Design, static calculatio	n and drawing documentation of the building substructure				

Code of the group: BC202408_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:

. .	Name of the equires / Name of the group of equires	1				
Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
102BAPC	Bachelor Thesis Václav Nežerka Ji í Novák	Z	12	10C	L,Z	S1
123BAPC	Bachelor Thesis Milena Pavlíková, Martina Záleská, Alena Vimmrová, Eva Vejmelková, Zbyšek Pavlík Jan Pruška Jan Pruška (Gar.)	Z	12	10C	L,Z	S1
124BAPC	Bachelor Thesis Jan R ži ka, Petr Hájek, Malila Noori, Lenka Hanzalová, Jaroslav Vychytil, B la Stib rková, Ji í Pazderka, Ji í Nová ek, Zbyn k Svoboda, 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
210BAPC	Bachelor Thesis Pavel Reiterman, Radoslav Sovják Ji í Litoš	Z	12	10C	L,Z	S1

Characteristics of the courses of this group of Study Plan: Code=BC202408_1 Name=Stavební inženýrství, specializace Pozemní stavby, bakalá ská práce

102BAPC	Bachelor Thesis	Z	12
in accordance with the	thesis proposal		
123BAPC	Bachelor Thesis	Z	12
In accordance with the	thesis proposal	·	
124BAPC	Bachelor Thesis	Z	12
The topics of bachelor's	s theses are based on the needs of practice or the scientific research activities of the department, scope and difficulty corresp	ond to the studer	nt's knowledge
acquired during bachel	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 I	esult of the Bachelor degree study programme. It should prove student`s ability to work independently in the area of Building	Services Systems	3. The thesis can
cover theoretical aspec	ts or to focus on practical application on an object within building services systems. Students consult the supervisor and spec	ialists from other	departments.
The thesis is presented	I in front of the commission.		
132BAPC	Bachelor Thesis	Z	12
The assignment of the	final thesis is always individual based on the agreement of the teacher and the student. The vast majority of assignments are	connected with th	e scientific and
research activities of th	e respective employee. The output of the solution may be a brief research study of the given problem, experimental activity, pr	ogramming and o	others according
to the respective assign	iment.		
133BAPC	Bachelor Thesis	Z	12
A bachelor thesis is the	qualification thesis of a bachelor's degree. It can take the form of processing the structural part of the building design project	or research study	y on the topic of
designing and applicati	on of a structural element with a variant comparative analysis or parametric study or performing and analysing experiments, e	tc.	
134BAPC	Bachelor Thesis	Z	12
In this course, student f	ormulates a bachelor's thesis that is necessary to reach the bachelor's degree. This course is focused on steel or timber struct	tural design.	
135BAPC	Bachelor Thesis	Z	12
The bachelor thesis cor	cludes the bachelor studies. The student demonstrates that he/she can apply the knowledge acquired during the study on a s	ecific project. The	bachelor thesis
is related to selected su	ubjects of the study plan. For students of C spec.		
210BAPC	Bachelor Thesis	Z	12
Students will get the op	portunity to organize complex process of experimental work from the beginning of production, experimental investigation to o	the data. Thesis	are designed to
fit scientific and researc	ch activity of the Experimental Centre.		

List of courses of this pass:

Code	Name of the course	Completion	Credits
1000DPR	Industrial Training (3 weeks)	Z	0
Professional practic	e is an important part of academic education in undergraduate degree programmes. The student will gain a basic understanding	of duties and prof	essional
responsibil	lities. The professional practice evaluates the sum of all knowledge acquired through previous theoretical studies and is a proof of	of their acquisition.	
101KG01	Constructive Geometry	Z,ZK	5
Projections and projections	ctive methods. Axonometry. Oblique projection. Orthogonal axonometry. Displaying prisms, cones, cylinders, pyramids, balls. Sin	nple problems in ax	conometry.
Basics of lighting of s	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		
101MA02	Mathematics 2	Z,ZK	6
	https://mat.fsv.cvut.cz/vyuka/bakalari/eng/ls/MT02/		
101MA03	Mathematics 3	Z,ZK	6
I	https://mat.fsv.cvut.cz/vyuka/bakalari/eng/zs/		1
101YAST	Applied Statistics	Z	2
Basic notions and term	inology, random variable, descriptive and inferential statistics. Discrete and continuous random variables, normal distribution, log	-normal distribution	n. Statistica
	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
This is a basic physic	es course for students of the study programmes Civil Engineering; Management and Economics in Construction. The course focu	ises on mechanics	and basic
thermodynamics. The fo	ollowing areas are covered in the course: Mechanics of material points (particles) and deformable bodies. Discrete and continuo	us model of matter.	. Kinematic
and dynamics of a r	material point (particle). Mechanical force fields. Gravitational field. Mechanical vibrations. Material deformation. Elastic waves. A	coustics. Hydrome	chanics.
	Fundamentals of thermodynamics. Heat transfer.		
102POV1	Fire and Explosion 1	Z	2
	fire, explosion and burning. Description, analysis and modeling of the forementioned processes. Temperature distribution field an		0
constructions. Pressu	Ire distribution field and shock waves, their origination and propagation. Dynamic effects of the shock waves. Tension and stress	in building construe	ctions and
	materials caused by pressure waves and high temperatures. Fire extinguishing.		

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		0
	paratus to determine elastic and deformation properties of building materials and structures, measurement and spectral analysis of s		
measurement of op	otical properties of materials, transmittance and reflectance of materials, determination of photometric and spectral characteristics of	light sources, mea	surement of
40.0000	thermophysical parameters of building materials		-
104YC2A	English 2	Z,ZK _	2
-	code: 104YC2A Scope: 0 + 2 (practical sessions) Number of credits: 1 Final assessment: credit and exam The aim of the compulsory	-	
-	lexis and grammar within the scope of the chosen field of study and university studies in general (Academic English); the overall focu nical style) and communicative competence within the construction industry. The course also seeks to teach students to read technica	-	
	written discourse and to express themselves in writing on issues in their field of study. The end of course requirements are a credit a		
	Horká Hana, Giormani Sandra, Martincová Petra, Nivenová Renata : Professional English for Civil Engineering (Units 6 10		. Literature.
104YC2N	German 2	Z,ZK	2
	urse - German Language for Civil Engineering is aimed at practising professional vocabulary within the scope of the construction indus		
	the necessary presentation skills in order to present all relevant professional issues. The end-of-course requirement is a credit. Liter		
	Deutsch im Bauwesen		,
104YCA1	English 1	7	1
	ode: 104Y CA1 Scope: 0 + 2 (practical sessions) Number of credits: 1 Final assessment: credit The aim of the compulsory English cours	se is to enhance the	knowledge
e e	nmar within the scope of the chosen field of study and university studies in general (Academic English); the overall focus is on profes		•
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 produ	ce essential
written discourse a	nd to express themselves in writing on issues in their field of study. The end of course requirements are a credit. Literature: Horká Hana	, Giormani Sandra,	Martincová
	Petra, Nivenová Renata : Professional English for Civil Engineering (Units 1 - 5)		
104YCN1	German 1	Z	1
The compulsory co	urse - German Language for Civil Engineering is aimed at practising professional vocabulary within the scope of the construction indus	try, understanding	orofessional
texts, and learning	the necessary presentation skills in order to present all relevant professional issues. The end-of-course requirement is a credit. Liter	ature: A.Hanáková	, J.Dressel:
	Deutsch im Bauwesen		
105SVAI	Social Sciences and Architecture	Z,ZK	5
The subject combine	nes the teaching of several social sciences - economics and economic policy, political science and law - with an overview of the deve	lopment of archited	cture. Within
economics, studen	ts will become familiar with basic economic concepts, the essence of economic and social policy and the place of construction in the e	conomic structure.	The content
	aw is an overview of the institutions of Roman law, an interpretation of the constitution, human rights and selected legal norms, espec	-	
The political scien	ce part outlines the development of political thought in antiquity and in the period from the Renaissance to the present. Lectures on t	-	ecture and
	construction provide a comprehensive explanation of the history of architecture from antiquity to postmodernism and deconstru		
122TSC	Construction Technology C	Z,ZK	6
122YBPP	Construction Safety Code	Z	2
	safety laws. Works in the trenches. Works at the height. Coordinator H&S when preparing and/or building constructions on a bu	-	-
122YMKS	Construction Quality Controlling	7	2
		. – .	
The course is divid	ed into two parts: quality control of the project documentation in terms of compliance with the implementing regulations and quality c	ontrol of the works	carried out.
The course is divid The scope of the su	ed into two parts: quality control of the project documentation in terms of compliance with the implementing regulations and quality c ubject is the quality control during the construction process with a focus on the quality of project documentation, monitoring of crucial p	ontrol of the works	carried out. truction and
The course is divid The scope of the su progress of works	ed into two parts: quality control of the project documentation in terms of compliance with the implementing regulations and quality c ubject is the quality control during the construction process with a focus on the quality of project documentation, monitoring of crucial p , management of changes during implementation. Construction quality assurance tools. Technical standards and regulations. Constru	ontrol of the works parameters of cons uction quality contro	carried out. truction and ol. Material
The course is divid The scope of the su progress of works and prod	ed into two parts: quality control of the project documentation in terms of compliance with the implementing regulations and quality c ubject is the quality control during the construction process with a focus on the quality of project documentation, monitoring of crucial p , management of changes during implementation. Construction quality assurance tools. Technical standards and regulations. Constru- uct quality assurance. Listing of the most common errors at the level of project documentation and during the implementation of the or	ontrol of the works parameters of cons uction quality contro construction deliver	carried out. truction and ol. Material y.
The course is divid The scope of the su progress of works	ed into two parts: quality control of the project documentation in terms of compliance with the implementing regulations and quality c ubject is the quality control during the construction process with a focus on the quality of project documentation, monitoring of crucial p , management of changes during implementation. Construction quality assurance tools. Technical standards and regulations. Construct uct quality assurance. Listing of the most common errors at the level of project documentation and during the implementation of the or Bachelor Thesis	ontrol of the works parameters of cons uction quality contro	carried out. truction and ol. Material
The course is divid The scope of the su progress of works and prod 123BAPC	ed into two parts: quality control of the project documentation in terms of compliance with the implementing regulations and quality c ubject is the quality control during the construction process with a focus on the quality of project documentation, monitoring of crucial p , management of changes during implementation. Construction quality assurance tools. Technical standards and regulations. Construct uct quality assurance. Listing of the most common errors at the level of project documentation and during the implementation of the or Bachelor Thesis In accordance with the thesis proposal	Dentrol of the works barameters of cons luction quality contro construction deliver	carried out. truction and ol. Material ^{-y.} 12
The course is divid The scope of the su progress of works and prod 123BAPC 123CHE	ed into two parts: quality control of the project documentation in terms of compliance with the implementing regulations and quality c ubject is the quality control during the construction process with a focus on the quality of project documentation, monitoring of crucial p , management of changes during implementation. Construction quality assurance tools. Technical standards and regulations. Construct uct quality assurance. Listing of the most common errors at the level of project documentation and during the implementation of the or Bachelor Thesis In accordance with the thesis proposal Chemistry	construction deliver z,ZK	carried out. truction and ol. Material <u>y.</u> 12 4
The course is divid The scope of the su progress of works and prod 123BAPC 123CHE Introduction to get	ed into two parts: quality control of the project documentation in terms of compliance with the implementing regulations and quality c ubject is the quality control during the construction process with a focus on the quality of project documentation, monitoring of crucial p , management of changes during implementation. Construction quality assurance tools. Technical standards and regulations. Constru uct quality assurance. Listing of the most common errors at the level of project documentation and during the implementation of the or Bachelor Thesis In accordance with the thesis proposal Chemistry neral chemistry - chemical bond, compounds, reactions, equilibrium. Chemistry of environment - water, atmosphere, pedosphere. Ch	construction deliver construction deliver Z,ZK emistry of building	carried out. truction and ol. Material -y. 12 4 materials -
The course is divid The scope of the su progress of works and prod 123BAPC 123CHE Introduction to gen inorganic binders,	ed into two parts: quality control of the project documentation in terms of compliance with the implementing regulations and quality c ubject is the quality control during the construction process with a focus on the quality of project documentation, monitoring of crucial p , management of changes during implementation. Construction quality assurance tools. Technical standards and regulations. Constru- uct quality assurance. Listing of the most common errors at the level of project documentation and during the implementation of the or Bachelor Thesis In accordance with the thesis proposal Chemistry neral chemistry - chemical bond, compounds, reactions, equilibrium. Chemistry of environment - water, atmosphere, pedosphere. Ch glass, ceramic, metals, natural polymers, wood, synthetic polymers on C and Si basis. Introduction to degradation of building material	control of the works barameters of consuction quality control construction deliver Z,ZK emistry of building als and to analytica	carried out. truction and ol. Material y. 12 4 materials - I chemistry.
The course is divid The scope of the su progress of works and prod 123BAPC 123CHE Introduction to gen inorganic binders, 123MAI	ed into two parts: quality control of the project documentation in terms of compliance with the implementing regulations and quality c ubject is the quality control during the construction process with a focus on the quality of project documentation, monitoring of crucial p , management of changes during implementation. Construction quality assurance tools. Technical standards and regulations. Constru- uct quality assurance. Listing of the most common errors at the level of project documentation and during the implementation of the or Bachelor Thesis In accordance with the thesis proposal Chemistry neral chemistry - chemical bond, compounds, reactions, equilibrium. Chemistry of environment - water, atmosphere, pedosphere. Ch glass, ceramic, metals, natural polymers, wood, synthetic polymers on C and Si basis. Introduction to degradation of building materia Materials Engineering	control of the works barameters of consuction quality control construction deliver Z,ZK emistry of building als and to analytica Z,ZK	carried out. truction and ol. Material y. 12 4 materials - I chemistry. 5
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structures. Design of variants of the load-bearing system, preliminary static analysis (calculation of load-bearing elements - slabs, columns, walls, etc), calculation of foundations, design

of structures on the building envelope with respect to thermal protection of buildings, building physics, fire protection of buildings and protection against water and soil moisture. Elaboration of detailed drawings including floor plans, sections and details. 124P02C Structural design project 2C K7 6 Converting an architectural study of medium-scale building into a detailed design of a building structure based on static analysis, interaction of load-bearing and non-load-bearing elements and building physics. Focus on complex approach to practical design, analysis and optimalization of a building structures. Design of variants of the load-bearing system, preliminary static analysis (calculation of load-bearing elements - slabs, columns, walls, etc), calculation of foundations, design of structures on the building envelope with respect to thermal protection of buildings, building physics, fire protection of buildings and protection against water and soil moisture. Elaboration of detailed drawings including floor plans, sections and details. 124PBZN Fire Protection and Healthy Buildings Z.ZK 6 Fire Safety Analysis of fire - course of fire, burning process, fire loading; legislation and European Standards; fire safety solutions - fire project, requirement for fire resistance of buildings, escape ways, distance separation, fire-fighting equipment; fire behaviour of the most used materials (wood, steel, concrete, plastics); protection of building materials against fire (brickwork, concreting, plasters and sprays, coatings, impregnates of wood, encasements, glued facings of mineral fibres); sandwiches from fire point of view; influence of claddings on the course fire; passive protection of building structures - fire walls, fire glazed structures, fire ceiling, draft stops and seals; repressive measures - electric fire signalling, stationary extinguishing devices, smoke extract, hydrant systems. Healthy Buildings Constituents of indoor microclimate, hazardous substances (VOCs, HFRs, heavy metals, moulds, microbes, aerosols, radionuclides, etc.), their sources and health effects. Influence of building structures and materials on quality of indoor microclimate. Design of buildings with respect to optimisation of indoor microclimate. 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 and corrosion processes; failures, reconstruction and rehabilitation of foundation structures, brick structures, concrete structures (reinforced concrete), prefabricated structures, wooden structures of buildings, protection of buildings against increased humidity and diagnostics of buildings 124PS3C **Building Structures 3C** Z.ZK 3 The subject deals with the complex design of load-bearing structures of roofing, indoor and multi-storey buildings and the structural-static effect of the perimeter roof shell. In the first part, the attention is focused on span structures of sloping roofs and hall buildings and on structural-static problems of multi-storey buildings. In the second part, students will learn about the design of prefabricated indoor and multi-storey structures. 124PSI1 **Building Structures 11** Ζ The concept of design of building structures with a comprehensive consideration of the functional requirements imposed on individual elements. Requirements for building structures, structural system, interaction of elements, spatial effect of the structural system. Vertical load-bearing structures (functions, requirements, principles of the structural design of walls, columns), floor structures (functions, requirements, principles of the structural design of vaults, wooden ceilings, reinforced concrete ceilings, ceramic concrete ceilings, steel and steel concrete ceilings). Expansion joints in load-bearing systems. Structural systems of single and multi-storey buildings, structural systems of long-span structures. 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. 124STAO **Building Acoustics and Daylighting** 7 3 Lighting technology deals with two main parts, sun exposure and daylighting. In the first part, the listener will learn which objects are subject to requirements and what are the options for verifying the time of insolation. This part also includes the connection of the results with possible boundary conditions. The second part deals with the assessment of daylight mainly in the interiors of buildings with regard to the gradation of sky brightness, shading conditions and the characteristics of the room and the lighting opening. In building acoustics, students are first introduced to the concepts of sound and noise, sound perception, basic quantities, sound sources and corresponding limits. The next part of the course deals with sound propagation in free and diffuse fields and sound propagation around barrier. Particular attention is paid to the sound insulation properties of partition structures and sound absorbing structures. 124STTT Hygrothermal Performance of Buildings 7K 3 124YBM1 Building Information Modeling (BIM) for Building Structures 1 Ζ 4 Building information model (BIM) - basic principles of creating a building information model in the field of civil engineering, specifics of BIM modeling. The subject uses the Autodesk Revit software base. Building information model in the life cycle of the building - information required during the design part, during construction and during use of the finished building. Timber Buildings 124YDRS 7 2 The aim is to present a complex overview on energy efficient timber structures. Basic theoretical and design principals are presented. The lectures are focused on following technologies of timber structures: (i) heavy timber skeleton systems, (ii) light timber structures based on 2x4. (iii) CLT, (iv) log house. All technologies of timber structures are presented in structural and building physics context of low energy and passive buildings. 124YLOP Lightweight Building Envelope 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 these constructions, including a concrete example of a design solution and a suitable material base Students are shown the possibilities of using glass in architecture, including realized constructions. 124YNAK Numerical Analysis of Building Structures The subject is focused on the practical modeling of various structural-static problems in particular. We will also focus on the problems of optimizing structures. The goal 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 use Excel effectively and write 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 25 years and I would like to teach 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 will encounter in practice. 124YPFS Precast concrete structures Ζ 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 extent of the current dynamically developing society and in many cases require the implementation of regeneration and modernization interventions enabling their full use. The course is focused on the current issues of renewal, reconstruction and modernization of precast houses, modernization of apartments in precast houses, on the issue of freeing parterres of precast houses for services, shops, offices, fitness centers, etc. Renovation, modernization, or regenerations require the removal of functionally inadequate completion structures, technical equipment, installations and, in some cases, even demanding interventions in supporting structures. As part of the construction of communication networks, modernization of urban development, etc., it is necessary 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, an extension is also carried out, or completion of precast houses. The implementation of the mentioned plans requires a survey and diagnostics of supporting and peripheral structures, joints of parts and an evaluation of the structural-technical condition and an assessment of the residual life of precast panel structures and buildings. 124YRHS Reconstruction of Historical Building Structures 7 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 traditional brick technology were constructed in the Czech Republic. Brick buildings from this period were built according to regulations, building codes and laws from the turn of the 19th and 20th centuries. Multi-storey brick tenement houses do not meet the current thermal, acoustic and other requirements, the requirements of a dynamically developing society to the required extent, and in many

cases require regeneration and modernization interventions, including the replacement of non-compliant and out-of-date structures and equipment enabling their further use. The course

s focused on the issue	those buildings			
124YSPB	these buildings. Curtain Walls Z		2	
-	e design of roof coverings for sloping and steep roofs. The design of roof coverings in terms of requirements: building physical, waterproofing,	operat	-	
	al, chemical, lifetime and recycling. Principles of design of additional elements and details of roof coverings of flat, sloping and steep roofs bas requirements and given boundary conditions.			
125BAPC	Bachelor Thesis Z		12	
	result of the Bachelor degree study programme. It should prove student's ability to work independently in the area of Building Services Syster	ms. Th	1	
cover theoretical aspe	ects or to focus on practical application on an object within building services systems. Students consult the supervisor and specialists from oth The thesis is presented in front of the commission.	her de	partments.	
125P02C Independent proje	Structural design project 2C KZ ect in the field of building services systems. Students choose out of the topics on offer and work on the text, calculations and graphical form o	of the p	6 roject.	
125TZ01	Building services systems 1 Z,ZK Basic course in building services systems - water supply, drainage, gas supply and heating systems. Z,ZK	<	5	
125TZ02	Building Services Systems 2 Z,ZK his subject includes an introduction to ventilation and air conditioning in buildings and solutions for electric instalations and artificial lighting.	<	5	
125YNST	HVAC and services design Z		2	
Basic principles of th	ne designing of sanitary systems, heating and ventilation. Design of the heat source, heat emitters, potable water demand, amount of ventilation air-handling unit and design of indoor systems.	on air,	design of	
125YPMT	Building services systems CAD, modelling and simulation Z		2	
126BIM1	Introductory course in computer aided modelling and design of building services systems. BIM Z		1	
The course focuses of	n teaching basic knowledge in the field of Building Information Management (BIM) in theoretical and practical areas, applicable across different	•	cialisations	
-	construction industry. Students will be introduced to data formats, data standards, intellectual property issues, working with digitized documents urces in the Czech Republic, ICT and enterprise systems, information systems for the construction industry, but also the context of BIM in the cu			
	he entire project life cycle and its specifics (delivery, expert focus, phases of construction projects, etc.) The theoretical knowledge is complem			
	exercises aimed at mastering and understanding the basic principles of object-oriented parametric modelling.			
126EKMN	Economics and Management Z,ZK		7	
	e is to provide students with an introduction to economics and management in the construction industry and to familiarize them with basic eco			
	ations. Students will be prepared to solve basic construction-management problems in the construction industry. They will acquire basic inform struction works and master the basic methods of managing a construction company. Emphasis is placed on understanding the principle of ecc			
		Unormo		
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132YPM1			
	Computer Analysis of Structures 1 Static model of a structure. Computer codes RFEM-Dlubal, SCIA Engineer.	Z	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 computin	Z	2
132YSHK	Statics and Reconstruction of Historical Structures	Z	2
		I	-
Short overview of I	historical vaults and roof trusses. Static behaviour and most frequent causes of failure. Methods of reconstruction, changes in founda	mon conditions incl	iuded. Most
	frequent causes of failure of panel buildings. Visit to the historical part of Prague Castle.	_	1
133BAPC	Bachelor Thesis	Z	12
	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		the topic of
133BK01	Concrete and Masonry Structures 1	Z,ZK	6
	sed on the design of concrete elements and constructions of multi-storey buildings - it follows on from the subject Fundamentals of S	-	
of the course is the	addition and generalization of procedures for verifying the load-bearing capacity of reinforced concrete structural elements for cases of	bending, shear, a	combination
of biaxial bending	g and normal force, designing elements stressed by torsion, punching shear, assessment of slender compressed elements. Design p	rocedures are disc	cussed for
	individual types of structures, including the choice of suitable calculation models and calculation methods and reinforcement prir	nciples.	
133BK02	Concrete and Masonry Structures 2	Z,ZK	7
	on the courses NNK and BK01 and widens the knowledge to the necessary minimum for the bachalor studium branches C and K. 13.		
	bending, shear, reinforced masonry, strenghtening of masonry structures 4 6. Design of concrete structures to serviceability limit st	-	-
	crack width limitation, deflections, application on waterproof structures 78.Introduction to pre-stressed concrete: design of pre-stress		
	Pre-cast concrete structures 13. Bridges: nomenclature in bridges, cross-section arrangement, loading, construction methods, Introdu	ction to engineerin	-
133NNKB	Fundamentals of Structural Design - Concrete	Z,ZK	4
The content of th	e subject are the basics of load-bearing concrete structures design and the design methodology according to valid standards, includi	ing the determinati	on of load
effects. The pro	perties of concrete, the production and testing of concrete, the properties of concrete reinforcement and its interaction with concrete	are discussed. Des	sign and
reinforcement of c	oncrete structures for basic types of loading (bending, shear, pressure) are the main part of this course. An introduction to serviceabi	ility limit states is ir	n the end of
this course. Th	ne course follows the introductory subject of Civil Engineering program (Structural Mechanics, Elasticity and Strength, Building Mater	ials. Building Struc	ctures).
133P02C	Structural design project 2C	KZ	6
		1	1
	he structural part of the project documentation for the given structure (part of the structure). The design of the selected variant of the	-	
requirements of o	ther professions. Structural analysis and drawing documentation to the extent specified during consultations. The Department of Arch	nitectural Engineer	ing (K124)
	and Geotechnics (K135) collaborate in teaching in the course.		
133YBKC	Concrete and Masonry Structures 1	Z	2
Introduction to s	elected computer programs for structural modeling. Fundamentals of the finite element method. Basic types of elements for modeling	of structures. Prin	ciples for
choosing a suitab	le model. Practical procedures for the design and assessment of reinforced concrete structures using software tools. Principles and r	methods of interpre	etation and
Ū	verification of results. Practical examples.		
133YBSV	Concretes with Special Properties	Z	2
High-strength conc	rete, fibre concrete, self-compacting concrete, shotcrete and fibreconcretes, lightweight concrete, heavyweight concrete; their propertie	es and applications	s in practice.
	New findings in technology.	_	1
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. Introdu		1
		iction to nonlinear i	modeling of
	subject will be selected problems from the following areas: Reinforcement of discontinuities of reinforced concrete structures. Introdu	iction to nonlinear i	modeling of
reinforced concr	subject will be selected problems from the following areas: Reinforcement of discontinuities of reinforced concrete structures. Introdu ete structures. Preparation of input data for numerical models. Design of structures using MATLAB. Presentation of selected program structures.	iction to nonlinear i	modeling of
reinforced concr 133YPNB	subject will be selected problems from the following areas: Reinforcement of discontinuities of reinforced concrete structures. Introdu ete structures. Preparation of input data for numerical models. Design of structures using MATLAB. Presentation of selected program structures. Fire desgn og concrete and mnsory structures	iction to nonlinear i is for the design of Z	concrete
reinforced concr 133YPNB	subject will be selected problems from the following areas: Reinforcement of discontinuities of reinforced concrete structures. Introdu ete structures. Preparation of input data for numerical models. Design of structures using MATLAB. Presentation of selected program structures. Fire desgn og concrete and mnsory structures sed on fire resistance of concrete and masonry structures: concrete and concrete structures exposed to fire, design rules, thermal and	iction to nonlinear i ns for the design of Z alysis, loads, design	concrete
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134YMOD	Numerical Modeling of Steel and Timber Structures	Z	2
Subject familiarize	students with the basis of modelling od steel and timber structures. Students manage basis of simulation during the creation of static	model of the struc	ture as well
	as the global analysis and check with respect to European design codes.		-
134YNKS	Glass Structures		2
	ding to introduce the students the field of structural applications of glass and to give them some specific skills for calculation and detailir d fins, columns and walls, point-supported glass, as well as for glazing systems such as glass facades, canopies and roofs, stairs and		
	is as structural material will be presented in comparison with other basic building materials, together with selected examples of glass.	-	-
	ting technology, relevant technical regulations, specification and current methods applied in design will be described. Worked example		-
	for better understanding, and design project will help to fix specific knowledge.		
134YPDK	Additional Timber and Metal Structures	Z	2
Subject provides ba	asic information regarding to design and application of supporting, working and industrial scaffolding systems. It is focused especialy	on design rules in	accordance
	with European codes and on modelling of structures.		
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 elemen	,	0
134YTSK	Thin-Walled and Composite Structures		2 a included
135BAPC	es advanced analysis and structural design of slender sections and cold-formed sections. Advanced structural design of steel-concre		12
	Bachelor Thesis s concludes the bachelor studies. The student demonstrates that he/she can apply the knowledge acquired during the study on a speci	∠ ific proiect. The bac	
	is related to selected subjects of the study plan. For students of C spec.	ne project. The bac	
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	I – I	-
influence of geologi	ical processes, both endogenous and exogenous, on the rock environment and how the geological situation affects the design of struct	tures and their inte	eraction with
the rock environme	ent. At the same time, attention is paid to the technical properties of rocks with regard to their practical applications. The course also i	ncludes a brief intr	oduction to
	the regional geology of the Czech Republic.		
135GM2I	Geomechanics 2I	Z,ZK	5
	ils, basic properties of soils, water in soil, strength and deformation properties of soils and their determination, improvement of soil p	· · · · ·	1
135P02C	Structural design project 2C	KZ	6
405//10/0	Design, static calculation and drawing documentation of the building substructure	7	0
135YING	Engineering geology ogical survey methods. Geological and engineering geological maps and profiles. Foundation soils in terms of engineering geology a		2
	- areas of discontinuities, their evaluation. Deposits of natural building materials. Landslides and slope protection. Engineering geological safety and promes.		
	of civil engineering structures. Challenges of urban geology. Engineering geology in environmental design and protection.		iononii (jpoo
135YPZU	Underground structures in urban areas	Z	2
	tigation, basic conceptions of rock classification and properties evaluation, laboratory and field testing, elements of calculations in roc	k mechanics and u	nderground
	construction, technology of underground constructions		
135YVZK	Computer analysis in foundation engineering	Z	2
Numerical meth	ods in CAD/CAM in geomechanics. Basic types of constitutive models of soil and rock mass behavior. Summary of PC geotechnical	software both in the	e field of
4057004	conventional methods and in numerical modelling domain. Practical solutions of selected geotechnical problems.	7 71/	-
135ZS01	Foundations 1 he subject, literature, design principles, geotechnical categories Strength and deformation characteristics of foundation soils, slab fou	Z,ZK	7 7
	ation of bearing capacity and settlement of flat foundations Deep foundations - typology, pile foundations, drilled and driven pile technic		
	ests Determination of bearing capacity of transversely loaded piles, pile group Micropiles, anchors, technology Conventional and jet g		
	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	vironments	
136DSUZ	Transport Structures and Urban Planning	Z,ZK	7
	UZ is composed of 3 issues, which build on each other and complement each other. These are the area of transport structures (roads		
	an planning and spatial planning (scope 2+0). Unlike the road construction and railroad construction sections, the urban planning se		
	is - Roads (R): Introduction to basic terminology in the part of roads, history. Road Act and related legislative and technical regulation of roads and motorways, design speed, directional and elevation design of routes, cross-sectional layout of roads and motorways, ea		-
	roads and motorways, design speed, directional and elevation design of rodes, closs-sectional layout of roads and motorways, ea roads, division and marking, definition of MK space, differences in design, operation and equipment. Carriageway, division, design p		
	ings. Transport Structures - Rail transport (RT): Introduction to basic terminology, Issues of railway crossings from the point of view of		
	story, principles of tram track construction, interaction with the environment. Metro as a system of urban rail transport. Basic principles		
Railway constructio	ons - an introduction to the design and construction of a railway track in the conditions of the Czech Republic, the basic elements of the	railway superstruct	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 hydrostation of structures, pipeline flow, open channel flow and groundwater flow.	atic and hydrodyna	mic loading
142VIZP	Water and Environmental Engineering	Z,ZK	4
	g semester, students are introduced to the fields of water engineering, water management and environmental engineering. In particu	I ' I	
-	f water and environmental engineering in close relation to other branches of civil engineering. The course is taught in the form of lectu		
	atically into 20 blocks according to the different branches of the discipline (13 times water engineering and 7 times environmental en		
students work on	basic problems in the field of hydrology, water supply and water structures, especially dams, hydropower and flood issues. All 4 "water structures, especially dams, hydropower and flood issues. All 4 "water structures, especially dams, hydropower and flood issues. All 4 "water structures, especially dams, hydropower and flood issues. All 4 "water structures, especially dams, hydropower and flood issues. All 4 "water structures, especially dams, hydropower and flood issues. All 4 "water structures, especially dams, hydropower and flood issues. All 4 "water structures, especially dams, hydropower and flood issues. All 4 "water structures, especially dams, hydropower and flood issues. All 4 "water structures, especially dams, hydropower and flood issues. All 4 "water structures, especially dams, hydropower and flood issues. All 4 "water structures, especially dams, hydropower and flood issues. All 4 "water structures, especially dams, hydropower and flood issues. All 4 "water structures, especially dams, hydropower and flood issues. All 4 "water structures, especially dams, hydropower and flood issues. All 4 "water structures, especially dams, hydropower and flood issues. All 4 "water structures, especially dams, hydropower and flood issues. All 4 "water structures, especially dams, hydropower and flood issues. All 4 "water structures, especially dams, hydropower and flood issues. All 4 "water structures, especially dams, hydropower and flood issues. All 4 "water structures, especially dams, hydropower and flood issues. All 4 "water structures, especially dams, hydropower and flood issues. All 4 "water structures, especially dams, hydropower and flood issues. All 4 "water structures, especially dams, hydropower and flood issues. All 4 "water structures, especially dams, hydropower and flood issues. All 4 "water structures, especial dams, hydropower and flood issues. All 4 "water structures, especial dams, hydropower and flood issues. All 4 "water structures, especial dams, hydropower and flood dams, hydropower str	er" departments of	K14x are
	involved in teaching the course.	¹	-
_154SG01	Land Surveying in Civil Engineering	Z,ZK	6
	ze of the Earth, substitutive surfaces, cartographic projections Horizontal and vertical control, coordinate calculations Quality control,		
	d distance measurements Heighting measurements Other geodetic methods in build-up (GNSS, DPZ,) Photogrammetry and laser documentation Geodetic works in build-up State map series of CR and thematic maps for build-up Geographic information systems a	-	
	of real estates Laws and decrees for geodesy and build-up in Czech Republic		9 0000000
210BAPC	Bachelor Thesis	Z	12
	e opportunity to organize complex process of experimental work from the beginning of production, experimental investigation to of th	I I	
	fit scientific and research activity of the Experimental Centre.		
TV1	Physical Education	Z	0

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For updated information see <u>http://bilakniha.cvut.cz/en/FF.html</u> Generated: day 2025-07-27, time 15:26.