### Study plan

### Name of study plan: Stavební inženýrství, specializace Inženýrství životního prost edí

Faculty/Institute/Others:
Department:
Branch of study guaranteed by the department: Welcome page
Garantor of the study branch:
Program of study: Civil Engineering
Type of study: Bachelor full-time
Required credits: 240
Elective courses credits: 0
Sum of credits in the plan: 240
Note on the plan: tento studijní plán platí od akademického roku 2020/21

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:

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Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
101KG01	Constructive Geometry Iva K ivková, Iva Malechová, Michal Zdražil, Iva Slámová, Hana Lakomá, Petra Vacková, Jana ápová, Jozef Bobok <b>Jana ápová</b> Iva K ivková (Gar.)	Z,ZK	5	2P+2C	Z,L	Z
101MA01	Mathematics 1 Iva Malechová, Iva Slámová, Petra Vacková, Jana ápová, Jozef Bobok, Michal Beneš, Ivana Pultarová, Ond ej Zindulka, Jan Chleboun, Aleš Nekvinda Aleš Nekvinda (Gar.)	Z,ZK	6	2P+3C	Z,L	Z
105SVAI	Social Sciences and Architecture Josef Záruba Pfeffermann, Bo ivoj Marek, Rudolf Pošva, Dana ímanová, Jana Hrbková Josef Záruba Pfeffermann Josef Záruba Pfeffermann (Gar.)	Z,ZK	5	4P+1C	L	Z
123CHE	<b>Chemistry</b> Jana Náb Iková, Martin Keppert, Milena Pavlíková <b>Milena Pavlíková</b> 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 forces. 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	influence of geological processes, both endogenous and exogenous, on the rock environment and how the geological situation affects the design of structures and their interaction with						
the rock environment. A	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	he regional geology of the Czech Republic.						

#### Code of the group: BJ20190200

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

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
101MA02	Mathematics 2 Iva Malechová, Iva Slámová, Hana Lakomá, Petra Vacková, Jana ápová, Jozef Bobok, Michal Beneš, Ivana Pultarová, Ond ej Zindulka, Ivana Pultarová Ivana Pultarová (Gar.)	Z,ZK	6	2P+3C	L,Z	Z
102FYI	Physics Pavel Novák, Tomáš Zbíral, Ji í Konfršt, Petr Pokorný, Jan Trejbal, Pavel Demo, Ji í Novák <b>Pavel Novák</b> Pavel Novák (Gar.)	Z,ZK	4	3P+1C	L	Z
123SH01	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	a.							
154SG01 Land Surveying in Civil Engineering	Z,ZK	6						
he shape and size of the Earth, substitutive surfaces, cartographic projections Horizontal and vertical control, coordinate calculations Quality control, deviations and tolerations in								
puild-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 plan	ning 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	of building structures with a comprehensive consideration of the functional requirements imposed on individual elements. Rec	quirements for bui	Iding 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,
columns), floor structure	es (functions, requirements, principles of the structural design of vaults, wooden ceilings, reinforced concrete ceilings, ceramic	c concrete ceilings	s, steel and steel
concrete ceilings). Expa	ansion joints in load-bearing systems. Structural systems of single and multi-storey buildings, structural systems of long-span	structures.	
132PRPE	Strength of Materials	Z,ZK	6
	eory of elasticity: stress and strain of straight beams subjected to bending and free torsion, ultimate plastic capacity of a mem		
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, basi	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 iss	ues of hydrostatics and hydrodynamics with aiming at civil engineering applications. There are analysed tasks related to hydro	ostatic and hydrod	dynamic loading
of structures, pipeline fl	ow, open channel flow and groundwater flow.		
142VIZP	Water and Environmental Engineering	Z,ZK	4
During the teaching ser	nester, students are introduced to the fields of water engineering, water management and environmental engineering. In part	icular, emphasis i	s placed on the
practical aspects of wat	er and environmental engineering in close relation to other branches of civil engineering. The course is taught in the form of l	ectures and tutori	als. The lectures
are divided thematically	into 20 blocks according to the different branches of the discipline (13 times water engineering and 7 times environmental en	ngineering). In the	exercises,
	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, 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 structures, especial dam	ater" 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 th	e courses of this group of Study Plan: Code=BJ20190400 Name	=Stavební in	ženýrstv	ví, variant	a J, 4. se	mestr
124PSI2 B	uilding Structures 2I			Z	,ZK	4
Staircases, sloping ramps, l	ift shafts - requirements, structural and material solutions, basics of typology, design prin	ciples, construction	on details, ra	ailing. Buildir	ng foundation	is - foundation
	ions, requirements, building plinth area (construction details). Basement - solution of bas					
	ion joints in buildings - principles of joints design in bearing structures, thermal expansic	on, compensation	of difference	es in settler	nent, constru	ction details.
Roof truss systems.						
126EKMN E	conomics and Management			Z	I,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 t	hem with ba	sic economi	c terms and
their practical applications.	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 construct	ion works and master the basic methods of managing a construction company. Emphas	sis is placed on ur	nderstandin	g the princip	le of econon	nic thinking in
relation to the construction	industry.					
132SM3 St	ructural Mechanics 3			Z	,ZK	5
Deformation and force meth	nod for the solution of reactions and internal forces on statically indeterminate beams, fr	ames, and truss	structures. C	alculation o	f displaceme	nts of beams,
frames, and truss structures	s using the principle of virtual works.					
133NNKB Fu	undamentals of Structural Design - Concrete			Z	,ZK	4
The content of the subject a	are the basics of load-bearing concrete structures design and the design methodology a	according to valid	standards,	including the	determinati	on of load
effects. The properties of co	procrete, the production and testing of concrete, the properties of concrete reinforcement	t and its interactio	n with conc	rete are disc	cussed. Desi	gn and
reinforcement of concrete s	tructures for basic types of loading (bending, shear, pressure) are the main part of this	course. An introdu	uction to se	rviceability li	mit states is	in the end of
this course. The course follo	ows the introductory subject of Civil Engineering program (Structural Mechanics, Elastic	ity and Strength,	Building Ma	aterials, Build	ding Structur	es).
134NNKO D	esign of Supporting StructuresI - Steel			Z	,ZK	3
	el, steel-concrete and wooden load-bearing structures according to applicable standards	s, including the de	termination	of load effe	cts, design d	fferences due
to the specific properties of	individual materials.					
136DSUZ Tr	ansport Structures and Urban Planning			Z	ZK	7
	mposed of 3 issues, which build on each other and complement each other. These are the	ne area of transpo	ort structure	s (roads and	rail transpor	t - scope 3+1)
	ning and spatial planning (scope 2+0). Unlike the road construction and railroad constru			-	-	
Transport Structures - Road	ds (R): Introduction to basic terminology in the part of roads, history. Road Act and relate	ed legislative and	technical re	gulations, th	eir impact o	n road design.
Design categories of roads	and motorways, design speed, directional and elevation design of routes, cross-section	al layout of roads	and motory	- vays, earthv	vork - dimen	sions, shapes,
drainage. Urban roads, divi	sion and marking, definition of MK space, differences in design, operation and equipme	nt. Carriageway, c	division, des	ign principle	s. Safety eq	uipment,
junctions and crossings. Tra	insport Structures - Rail transport (RT): Introduction to basic terminology, Issues of railwa	ay crossings from	the point of	view of secu	urity, design a	and operation.
Tram transport - history, pri	nciples of tram track construction, interaction with the environment. Metro as a system of	of urban rail transp	oort. Basic p	principles an	d parameter	s, metro lines.
Railway constructions - an i	ntroduction to the design and construction of a railway track in the conditions of the Czec	h Republic, the ba	asic elemen	ts of the rail	way superstr	ucture. Spatial
Planning (SP): Teaching sp	atial planning and urban planning, spatial planning tools and procedures for their acquis	sition.				

#### Name of the block: Compulsory courses in the program Minimal number of credits of the block: 92 The role of the block: P

#### Code of the group: BZ202005

Name of the group: Stavební inženýrství, specializace Inženýrství životního prost edí, 5. semestr Requirement credits in the group: In this group you have to gain at least 30 credits Requirement courses in the group: In this group you have to complete at least 5 courses Credits in the group: 30

Note on the 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
127VEIS	Public Infrastructure Václav Jetel, Marek Janatka Václav Jetel Václav Jetel (Gar.)	Z,ZK	7	3P+2C	Z	Р
133BZKZ	Concrete and Masonry Structures Petr Bílý, Michaela Frantová Michaela Frantová (Gar.)	Z,ZK	5	2P+2C	Z	Р
135ZSH	Foundations and Hydrogeology Ond ej Nol, Jana Tourková, Jan Kos, Jan Schröfel, Jakub Nedv d Kate ina Ková ová Daniel Jirásko (Gar.)	Z,ZK	7	4P+2C	Z	Ρ
141KMH	Climatology, Meteorology, Hydrology Michal Dohnal, Jana Votrubová, Tomáš Vogel, Jaromír Dušek Michal Dohnal Tomáš Vogel (Gar.)	Z,ZK	6	3P+2C	Z	Ρ
143PED	Soil Science Michal Sn hota Michal Sn hota (Gar.)	Z,ZK	5	2P+2C	Z	Р

# Characteristics of the courses of this group of Study Plan: Code=BZ202005 Name=Stavební inženýrství, specializace Inženýrství životního prost edí, 5. semestr

127VEIS	Public Infrastructure	Z,ZK	7	
The aim of the course i	s to introduce students to the work of urban planners and spatial planners when designing public infrastructure concepts.			

133BZKZ	Concrete and Masonry Structures	Z,ZK	5					
The course lectures is f	The course lectures is focused on the design of one-way and two-way slabs, staircases, reinforcing walls, foundations, precast structures, halls and prestressed concrete. The course							
also covers masonry co	also covers masonry construction and an introduction to the design of civil engineering structures and bridges. The content of the practicum is the application of the knowledge and							
skills on the real structu	res.							
135ZSH	Foundations and Hydrogeology	Z,ZK	7					
Principles of design of f	oundation structures according to Eurocode principles. Types of foundation structures. Building pits. Basic information on the	hydrogeological (	environment and					
groundwater chemistry.	Aggressive waters. Groundwater tapping.							
141KMH	Climatology, Meteorology, Hydrology	Z,ZK	6					
The course focuses on	he following thematic areas: General circulation of the atmosphere, climate factors and climate zones. Composition and stru	cture of the atmo	sphere, water in					
the atmosphere. Air ma	sses and fronts. Cloud development and precipitation. Hydrologic cycle and hydrologic balance. Interception, infiltration, evap	oration. Runoff g	eneration,					
rainfall-runoff relationsh	ips, flood routing, discharge measurement. Frequency analysis of extreme events. Hydrologic design.							
143PED	Soil Science	Z,ZK	5					
Soil and the environme	nt. Soil genesis, pedogenetic factors. Soil structure and texture. Physical and physiochemical soil properties. Physical, chemic	al and biological	processes in					
soils. Soil classification.	soils. Soil classification. Soil survey and mapping. Soils of the world. Clay minerals, soil chemistry. Hydrostatic and hydrodynamic behaviour of soil water, capillarity. Determination of							
soil moisture. Flow of w	ater in variably saturated porous media.							

#### Code of the group: BZ202006

Name of the group: Stavební inženýrství, specializace Inženýrství životního prost edí, 6. semestr Requirement credits in the group: In this group you have to gain at least 25 credits Requirement courses in the group: In this group you have to complete at least 5 courses Credits in the group: 25

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
1340DKV	Steel and Timber Structures Michal Netušil, Anna Kuklíková Michal Netušil Michal Netušil (Gar.)	Z,ZK	5	2P+2C	Z,L	Р
141VTO	Water Courses Petr Sklená Petr Sklená (Gar.)	Z,ZK	5	3P+1C	L	Р
143GIPU	GIS and Land Consolidation Josef Krása, Petr Kavka, Miroslav Bauer Miroslav Bauer Josef Krása (Gar.)	Z,ZK	7	4P+3C	L	Р
144VHOB	Urban water management Jana Náb Iková, Jaroslav Pollert Jana Náb Iková Jaroslav Pollert (Gar.)	Z,ZK	6	4P+2C	L	Ρ
141VYV1	Fieldwork Training (1 week) Michal Dohnal, Tomáš Picek, Michal Sn hota, Martin Šanda Michal Dohnal Michal Dohnal (Gar.)	Z	2	2C	L	Р

# Characteristics of the courses of this group of Study Plan: Code=BZ202006 Name=Stavební inženýrství, specializace Inženýrství životního prost edí, 6. semestr

134ODKV	Steel and Timber Structures	Z,ZK	5				
Steel structures - pros a	Steel structures - pros and contras, material properties, fabrication, connections, industrial steel buildings, cables, high strength steel, buildings in terms of water engineering - load,						
protection, utilization. Ti	protection, utilization. Timber - loadings, material propertie, limit states methodology, design, connections, bracings, protection of structural timber, timber bridges.						
141VTO	Water Courses	Z,ZK	5				
Students meet geomor	bic fluvial processes taking place in river channels, expand their knowlege in the field of river hydraulics and river training te	chnology and gair	n an idea of				
administration, mainten	ance and management of rivers in the Czech Republic. In practical part students are requested to prepare a report on asses	ment of river reac	h of own choice				
with aim to identify prob	lems to be solved.						
143GIPU	GIS and Land Consolidation	Z,ZK	7				
Two parallel blocks of in	struction - Land consolidation and basics of geomatics (GIS applied for KPÚ). Basics of land consolidation - history, course a	and phases of the	KPÚ process,				
principles of designing	common facilities, legislation. Introduction to GIS and main components of common systems. Data structure and basics of im	age information p	processing from				
	I data. Basics of databases and work with vector and raster formats of geographic data. GIS in engineering practice and land	scape engineerin	g. Preparation of				
a digital terrain model, l	and use maps and other inputs and available databases in the Czech Republic. Processing of remote sensing data.						
144VHOB	Urban water management	Z,ZK	6				
Hydrochemistry: Chemi	cal composition of water. Dissolved and particular matters. Metals, halogens. Nitrogen, sulphur and phosphorous compounds	. Non-electrolytes	. Organic matter.				
	hication. Hydrobiology: Types of natural waters. Ecology of aquatic organisms. Hydrobiology of surface, drinking and waste w						
	s of water purification. Water distribution system Sewer system: Wastewater. Shapes and sizes of the sewers. Types of sewer	•	• •				
Combined sewer overflows. Environmental protection Waste water treatment plant: domestic wastewater treatment plant. Wastewater treatment plant. mechanical cleaning. Biological							
treatment. Removal of r	itrogen and phosphorus. Sludge						
141VYV1	Fieldwork Training (1 week)	Z	2				
Not applicable.							

Code of the group: BZ202007

Name of the group: Stavební inženýrství, specializace Inženýrství životního prost edí, 7. semestr Requirement credits in the group: In this group you have to gain at least 19 credits Requirement courses in the group: In this group you have to complete at least 4 courses Credits in the group: 19 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
136DSZP	Transport Structures and Environment Lenka Lomoz, Jan Hradil Jan Hradil Jan Hradil (Gar.)	Z,ZK	6	3P+2C	Z	Р
1430DKO	Waste Management and Contamination Michal Sn hota, Martin Do kal, Martin Šanda Martin Šanda Martin Do kal (Gar.)	Z,ZK	6	3P+2C	Z	Р
143TOKT	Landscape Design and Protection Petr Kavka Martin Neumann Petr Kavka (Gar.)	Z,ZK	7	2P+2C	Z	Р
100ODPR	Industrial Training (3 weeks) Jan R ži ka, Petr Hájek, Kate ina Sojková Michal Jandera Michal Jandera (Gar.)	Z	0	6C	Z,L	Р

#### Characteristics of the courses of this group of Study Plan: Code=BZ202007 Name=Stavební inženýrství, specializace Inženýrství životního prost edí, 7. semestr

136DSZP	Transport Structures and Environment	Z,ZK	6			
The course is designed as an introduction to the problems of the relationship between road and rail transport and the environment. In more detail, it is aimed at the issue of noise and						
anti-noise measures fro	m the point of view of a civil engineer in the field of rail transport. In the field of road transport, the subject is focused on traffic	calming and con	trol, solutions for			
urban and pedestrian z	ones, solutions for non-motorized traffic, including material, technological and design solutions.					
1430DK0	Waste Management and Contamination	Z,ZK	6			
Principles of linear and	circular economy with a focus on construction and municipal waste. Waste collection, utilization and disposal systems (municipal waste)	cipal, construction	waste). Landfill			
security, landfill gas, lar	ndfill technology and post-closure reclamation. Measurement of waste production, biowaste management-composting and an	aerobic digestion	. Radioactive			
waste in the Czech Rep	public. Remediation of pollution - remediation methods to decontaminate the territory.					
143TOKT	Landscape Design and Protection	Z,ZK	7			
100ODPR	Industrial Training (3 weeks)	Z	0			
Professional practice is an important part of academic education in undergraduate degree programmes. The student will gain a basic understanding of duties and professional						
responsibilities. The professional practice evaluates the sum of all knowledge acquired through previous theoretical studies and is a proof of their acquisition.						

#### Code of the group: BZ202008

Name of the group: Stavební inženýrství, specializace Inženýrství životního prost edí, 8. semestr Requirement credits in the group: In this group you have to gain at least 18 credits Requirement courses in the group: In this group you have to complete at least 3 courses Credits in the group: 18

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
122TSVZ	<b>Technology of Construction Z</b> Jaroslav Synek, Rostislav Šulc, Mária Párová <b>Rostislav Šulc</b> Rostislav Šulc (Gar.)	Z,ZK	6	4P+2C	L	Ρ
126STMN	<b>Construction Management</b> Dana M š anová, Renáta Schneiderová Heralová, Václav Tatýrek, Jaroslava Tománková, Zita Prost jovská <b>Martin ásenský</b> Zita Prost jovská (Gar.)	Z,ZK	6	3P+2C	Z,L	Ρ
143DEOK	<b>Dendrology and Landscape Protection</b> Martin Do kal, Barbora Jáchymová, Jan Halík <b>Martin Do kal</b> Martin Do kal (Gar.)	Z,ZK	6	3P+3C	L	Ρ

#### Characteristics of the courses of this group of Study Plan: Code=BZ202008 Name=Stavební inženýrství, specializace Inženýrství životního prost edí, 8. semestr

122TSVZ	Technology of Construction Z	Z,ZK	6			
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						
project product. Objectiv	ves, strategies, phases and surroundings of the construction project. Project manager role. Purchases and contracts in the p	roject. Quality ma	nagement, risk			
management. Financial	management and project evaluation. Feasibility study. Cost and resource management. Change procedures. The Act on Spa	atial 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 us	e of general			
business conditions. Bu	siness public competition, its influence on the obligations of participants. Securing the commitment - contractual penalty, gua	rantee. The main	contract types			
in construction - are cor	ntract for the conclusion of a future contract, purchase contract, contract for work, and content of the contract.					
143DEOK	Dendrology and Landscape Protection	Z,ZK	6			
The subject represents a synthesis of topics related to applied ecology and at the same time dendrology, focused on practical use in the creation and protection of the landscape as						
well as within urbanized units.						

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

Code of the group: BTV\_POV Name of the group: Povinná t lesná výchova

#### Requirement credits in the group:

Requirement courses in the group: In this group you have to complete at least 2 courses Credits in the group: 0

#### Note on the group:

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

#### Characteristics of the courses of this group of Study Plan: Code=BTV\_POV Name=Povinná t lesná výchova

TV1 Physical Education	Ζ	0
TV2 Physical Education	Z	0

Name of the block: Compulsory elective courses Minimal number of credits of the block: 6 The role of the block: S

#### Code of the group: BZ202007\_2

Name of the group: Stavební inženýrství, specializace Inženýrství životního prost edí, povinn volitelné p edm ty

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
141YHMM	Hydroecological monitoring and modeling Michal Dohnal, Jana Votrubová, Tomáš Vogel, Jaromír Dušek Michal Dohnal Michal Dohnal (Gar.)	Z,ZK	6	3P+2C	Z	S
143YPEO	Erosion Protection Tomáš Dostál Tomáš Dostál (Gar.)	Z,ZK	6	3P+2C	Z	S
127YPSK	Town and Regional Planning of Settlements and Landscape Václav Jetel, Ji í Kupka, Daniel Stojan <b>Ji í Kupka</b> Ji í Kupka (Gar.)	Z,ZK	6	3P+2C	Z	S

## Characteristics of the courses of this group of Study Plan: Code=BZ202007\_2 Name=Stavební inženýrství, specializace Inženýrství životního prost edí, povinn volitelné p edm ty

141YHMM	Hydroecological monitoring and modeling	Z,ZK	6			
General principles of meteorological measurement, data resources, and measurement design. Meteorological and climatic measurements. Hydrological measurements. Tracers in						
experimental hydrology.	Remote sensing for hydrology and meteorology. Evapotranspiration measurements. Data analysis. Modeling in hydrology. M	odeling in ecology	y and biology.			
Inverse modeling.						
143YPEO	Erosion Protection	Z,ZK	6			
Basic problems of soil e	rosion process, its risks and negative effects. Basic principles of catchment management. Negative effects of soil erosion on	individual parts of	of landscape and			
society. Methods of soil	loss and sediment transport determination, design of soil erosion control measures. State tools and policies in soil conserval	tion.				
127YPSK	Town and Regional Planning of Settlements and Landscape	Z,ZK	6			
The course taught in the field of Environmental Engineering is an introduction to urbanism, urban design, spatial and regional planning as a basis for the preparation of a bachelor's						
thesis at the Dep. of Urban Design, Town and Regional Planning. It complements the semester projects with theory and a broader professional context and is a preparation for the part						
of the state bachelor's e	of the state bachelor's exam organized by the Dep. of Urban Design, Town and Regional Planning.					

### Name of the block: Jazyky

Minimal number of credits of the block: 3 The role of the block: J

Code of the group: BF20190201\_J Name of the group: Povinn volitelný jazyk, 2. semestr Requirement credits in the group: In this group you have to gain at least 1 credit Requirement courses in the group: In this group you have to complete at least 1 course Credits in the group: 1 Note on the group:

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

#### Characteristics of the courses of this group of Study Plan: Code=BF20190201\_J Name=Povinn volitelný jazyk, 2. semestr

#### 104YCA1 English 1

English 1 Course code: 104Y CA1 Scope: 0 + 2 (practical sessions) Number of credits: 1 Final assessment: credit The aim of the compulsory English course is to enhance the knowledge of lexis and grammar within the scope of the chosen field of study and university studies in general (Academic English); the overall focus is on professional language (i.e., ESP technical style) and communicative competence within the construction industry. The course also seeks to teach students to read technical literature and to be able to produce essential written discourse and to express themselves in writing on issues in their field of study. The end of course requirements are a credit. Literature: Horká Hana, Giormani Sandra, Martincová Petra, Nivenová Renata : Professional English for Civil Engineering (Units 1 - 5) Ζ

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#### 104YCN1 German 1

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

#### Code of the group: BF20190302\_J

Name of the group: Povinn volitelný jazyk, 3. semestr Requirement credits in the group: In this group you have to gain at least 2 credits Requirement courses in the group: In this group you have to complete at least 1 course Credits in the group: 2

#### Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
104YC2A	English 2 Hana Horká, Petra Martincová, Petra Florianová, Sandra Giormani, Svatava Boboková Bartíková, V ra ermáková, Karolína Synková, Alexandra Steinerová, Elena Da eva, Svatava Boboková Bartíková Sandra Giormani (Gar.)	Z,ZK	2	2C		J
104YC2N	German 2 Svatava Boboková Bartíková Sandra Giormani Svatava Boboková Bartíková (Gar.)	Z,ZK	2	2C		J

#### Characteristics of the courses of this group of Study Plan: Code-BE20190302 J Name-Poving volitelný jazyk 3 semestr

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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 sty	rle) and communicative competence within the construction industry. The course also seeks to teach students to read technic	cal literature and t	o be able to				
produce essential writte	en discourse and to express themselves in writing on issues in their field of study. The end of course requirements are a credi	t and an examina	tion. Literature:				
Horká Hana, Giormani	Sandra, Martincová Petra, Nivenová Renata : Professional English for Civil Engineering (Units 6 10)						
104YC2N	German 2	Z,ZK	2				
The compulsory course - German Language for Civil Engineering is aimed at practising professional vocabulary within the scope of the construction 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: 22 The role of the block: S1

Code of the group: BZ202006\_1

Name of the group: Stavební inženýrství, specializace Inženýrství životního prost edí, projekt, 6. semestr Requirement credits in the group: In this group you have to gain at least 5 credits Requirement courses in the group: In this group you have to complete at least 1 course Credits in the group: 5 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
127PZ01	Project Design 1 Marek Janatka Marek Janatka (Gar.)	KZ	5	4C	L	S1
141PZ01	Project Design 1 Michal Dohnal, Petr Sklená Michal Dohnal Petr Sklená (Gar.)	KZ	5	4C	L	S1
142PZ01	Project Design 1 Martin Králík Martin Králík Martin Králík (Gar.)	KZ	5	4C	L	S1
143PZ01	<b>Project Design 1</b> Václav David, Petr Koudelka <b>Václav David</b> Petr Koudelka (Gar.)	KZ	5	4C	L	S1

# Characteristics of the courses of this group of Study Plan: Code=BZ202006\_1 Name=Stavební inženýrství, specializace Inženýrství životního prost edí, projekt, 6. semestr

127PZ01	Project Design 1	KZ	5
The project is tough	t in cooperation with other departments. Preparation for bachelor thesis, collecting the information, preparation o	f data, state of art.	•
141PZ01	Project Design 1	KZ	5
The Project Design	1 at the Department of Hydraulics and Hydrology is focused on the modeling of the water component of the envi	ronment or the hydrological anal	sis of a selected
catchment.			
142PZ01	Project Design 1	KZ	5
The project is tough	t in cooperation with other departments. Preparation for bachelor thesis, collecting the information, preparation o	f data, state of art.	
143PZ01	Project Design 1	KZ	5
Students will work o	on a study of the construction of a small water reservoir and on the revitalization of a small water courses under t	he reservoir. The study will incluc	e a textual,
computational and c	drawing part.		

#### Code of the group: BZ202007\_1

Name of the group: Stavební inženýrství, specializace Inženýrství životního prost edí, projekt, 7. semestr Requirement credits in the group: In this group you have to gain at least 5 credits Requirement courses in the group: In this group you have to complete at least 1 course Credits in the group: 5 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)	Completion	Credits	Scope	Semester	Role
101PZ02	Tutors, authors and guarantors (gar.)         Project Design 2         Jozef Bobok Jozef Bobok Jozef Bobok (Gar.)	KZ	5	4C	Z	S1
125PZ02	Project Design 2 Ilona Koubková Ilona Koubková (Gar.)	KZ	5	4C	Z	S1
127PZ02	Project Design 2 František Pospíšil, Václav Jetel, Simona Vondrá ková František Pospíšil Václav Jetel (Gar.)	KZ	5	4C	Z	S1
133PZ02	Project Design 2 Jitka Vašková	KZ	5	4C	Z	S1
135PZ02	Project Design 2	KZ	5	4C	Z	S1
136PZ02	Project Design 2	KZ	5	4C	Z	S1
137PZ02	Project Design 2 Lenka Lomoz Lenka Lomoz Lenka Lomoz (Gar.)	KZ	5	4C	Z	S1
141PZ02	Project Design 2 Michal Dohnal, Petr Sklená Michal Dohnal Michal Dohnal (Gar.)	KZ	5	4C	Z	S1
142PZ02	Project Design 2 Martin Králík Martin Králík Martin Králík (Gar.)	KZ	5	4C	Z	S1
143PZ02	Project Design 2 Michal Sn hota, Tomáš Dostál, Martin Do kal, Martin Šanda, Josef Krása, Petr Kavka, Miroslav Bauer, Václav David, Milena Císlerová, Miroslav Bauer Martin Do kal (Gar.)	KZ	5	4C	Z	S1
144PZ02	Project Design 2 Karel K iž Karel K iž Karel K iž (Gar.)	KZ	5	4C	Z	S1
154PZ02	Project Design 2 Martin Štroner Martin Štroner (Gar.)	KZ	5	4C	Z	S1
155PZ02	Project Design 2	KZ	5	4C	Z	S1
220PZ02	Project Design 2 Ji í Svoboda, Radek Vaší ek Radek Vaší ek Radek Vaší ek (Gar.)	KZ	5	4C	Z	S1

# Characteristics of the courses of this group of Study Plan: Code=BZ202007\_1 Name=Stavební inženýrství, specializace Inženýrství životního prost edí, projekt, 7. semestr

101PZ02	Project Design 2	KZ	5
	rantor of this subject.	1	

Independent project in the field of building services systems. Students choose out of the topics on offer and work on the text, calculations and graphical form of the project. Students trom environment program.          127PD20       Project Design 2       KZ       5         133P202       Project Design 2       KZ       5         135P202       Project Design 2       KZ       5         137P202       Project Design 2       KZ       5         Development of a complete noise study of the selected area, containing a significant share of rail traffic. Elaboration of a study including an assessment of the noise study and the fraiterature.       KZ       5         141P202       Project Design 2       KZ       5         141P202       Project Design 2       KZ       5         141P202       Project Design 2       KZ       5         141P202	125PZ02	Project Design 2	KZ	5
from environment program.       KZ       5         127P202       Project Design 2       KZ       5         133P202       Project Design 2       KZ       5         The subject to course, which is taught in the form of individual consultations. Teaching is provided by Ing. arch. František Pospišil, Ph.D. and Ing. arch. Daniel Stojan.       133P202       Project Design 2       KZ       5         The subject is focused on concrete and masorny structures and materials in relation with the impact on the environment, aspects of sustainable construction, energy consumption, renewable sources, etc. The content of the work can be the elaboration of a research study comprising the processing of discoveries from the literature, the execution and analysis of experiments, etc.         135P202       Project Design 2       KZ       5         136P202       Project Design 2       KZ       5         137P202       Project Design 2       KZ       5         134P202       Project Design 2       KZ       5         141P202				<b>U</b>
It is a project course, which is taught in the form of individual consultations, Teaching is provided by Ing, arch. František Pospišil, Ph.D. and Ing, arch. Daniel Stojan.          133P202       Project Design 2       KZ       5         The subject is focused on concrete and masonry structures and materials in relation with the impact on the environment, aspects of sustainable construction, energy consumption, renewable sources, etc. The content of the work can be the elaboration of a research study comprising the processing of discoveries from the literature, the execution and analysis of experiments, etc.         135P202       Project Design 2       KZ       5         136P202       Project Design 2       KZ       5         Development of a complete noise study of the selected area, containing a significant share of rail traffic. Elaboration of a study including an assessment of the noise situation of the area and a possible propocal for a solution to the given situation. Application of knowledge of the relevant legislation, methodological guidelines for the calculation of traffic noise levels and prediction software intended for determining the noise load.         141P202       Project Design 2       KZ       5         The project serves to intensity the cooperation between the student and the department. During the project sudents use the acquired knowledge from hydraulics, hydrology and other related technical and natural disciplines. It is supervised by the staff of the department, tyrelerably directly by the supervisor of the bachelor thesis. In the case of the Department of Hydraulics and Hydrology, work is offered in the areas of waterourse revitalization, river hydraulics, small catchment hydrology, subsufface hydrology,				.,
133P202       Project Design 2       KZ       5         The subject is focused on concrete and masonry structures and materials in relation with the impact on the environment, aspects of sustainable construction, energy consumption, renewable sources, etc. The content of the work can be the elaboration of a research study comprising the processing of discoveries from the literature, the execution and analysis of experiments, etc.         135P202       Project Design 2       KZ       5         136P202       Project Design 2       KZ       5         137P202       Project Design 2       KZ       5         137P202       Project Design 2       KZ       5         Development of a complete noise study of the selected area, containing a significant share of rail traffic. Elaboration of a study including an assessment of the noise situation of the area and a possible proposal to a solution to the given situation. Application of knowledge of the relevant legislation, methodological guidelines for the calculation of traffic noise levels and prediction software intended for determining the noise load.         141P202       Project Design 2       KZ       5         The course is designed as a project below by the staff of the department, preferably directly by the supervisor of the bachelor thesis. In the case of the Department of Hydraluic transport.       KZ       5         142P202       Project Design 2       KZ       5         The course is designed as a project belore the thesis. Students will work with their thesis advisors on th	127PZ02	Project Design 2	KZ	5
The subject is focused on concrete and masonry structures and materials in reliation with the impact on the environment, aspects of sustainable construction, energy consumption, renewable sources, etc. The content of the work can be the elaboration of a research study comprising the processing of discoveries from the literature, the execution and analysis of experiments, etc.          135PZ02       Project Design 2       KZ       5         137PZ02       Project Design 2       KZ       5         137PZ02       Project Design 2       KZ       5         137PZ02       Project Design 2       KZ       5         Development of a complete noise study of the selected area, containing a significant share of rail traffic. Elaboration of a study including an assessment of the noise situation of the given situation. Application of knowledge of the relevant legislation, methodological guidelines for the calculation of traffic noise levels and prediction software intended for determining the noise load.         141PZ02       Project Design 2       KZ       5         The project serves to intensity the cooperation between the student and the department. During the project students use the acquired knowledge from hydraulics, hydrology and other related technica and hydrology, work is offered in the areas of watercourse revitalization, river hydraulics, small catchment hydrology, subsurface hydrology, urbanized catchment hydrology and ther allow for a broader scope (variant solutions) for subsequent elaboration in the bachelor thesis. Depending on their thesis to improve the level of the bachelor thesis and to allow for a broader scope (variant solutions) for subsequent elaboration in the bachelor thesis.	It is a project course, w	hich is taught in the form of individual consultations. Teaching is provided by Ing. arch. František Pospíšil, Ph.D. and Ing. arch.	Daniel Stojan.	1
renewable sources, etc. The content of the work can be the elaboration of a research study comprising the processing of discoveries from the literature, the execution and analysis of experiments, etc.           13SPZ02       Project Design 2       KZ       5         136PZ02       Project Design 2       KZ       5         137PZ02       Project Design 2       KZ       5         Development of a complete noise study of the selected area, containing a significant share of rail traffic. Elaboration of a study including an assessment of the noise situation of the area and a possible proposal for a solution to the given situation. Application of knowledge of the relevant legislation, methodological guidelines for the calculation of thraffic noise levels and prediction software intended for determining the noise load.         141PZ02       Project Design 2       KZ       5         The project Serves to intensify the cooperation between the student and the department. During the project students use the acquired knowledge from hydraulics, hydrology and other related technical and natural disciplines. It is supervised by the staff of the department, preferably directly by the supervisor of the bachelor thesis. In the case of the Department of Hydraulics and Hydrology, work is offered in the areas of watercourse revitalization, rive hydraulics, small catchment hydrology, subsurface hydrology, and other related technical and natural disciplines. It is subervised by the sist of water course is designed as a project before the thesis. Students will work with their thesis advisors on their thesis topic. The aim is to improve the level of the bachelor thesis.         142PZ02       Project Design 2       KZ       5	133PZ02	Project Design 2	KZ	5
experiments, etc.       135PZ02       Project Design 2       KZ       5         136PZ02       Project Design 2       KZ       5         137PZ02       Project Design 2       KZ       5         Development of a complete noise study of the selected area, containing a significant share of rail traffic. Elaboration of a study including an assessment of the noise situation of the area and a possible proposal for a solution to the given situation. Application of knowledge of the relevant legislation, methodological guidelines for the calculation of traffic noise levels and prediction software intended for determining the noise load.         141PZ02       Project Design 2       KZ       5         The project serves to intensify the cooperation between the student and the department. During the project students use the acquired knowledge from hydraulics, hydrology and other related technical and natural disciplines. It is supervised by the staff of the department, preferably directly by the supervisor of the bachelor thesis. In the case of the Department of Hydraulics and Hydrology, work is offered in the areas of watercourse revitalization, river hydraulics, small catchment hydrology, subsurface hydrology, urbanized catchment hydrology and hydraulic transport.         142PZ02       Project Design 2       KZ       5         The course is designed as a project before the thesis. Students will work with their thesis advisors on their thesis topic. The aim is to improve the level of the bachelor thesis.       143PZ02         142PZ02       Project Design 2       KZ       5         143PZ0	The subject is focused	on concrete and masonry structures and materials in relation with the impact on the environment, aspects of sustainable con	struction, energy	consumption,
135P202       Project Design 2       KZ       5         136PZ02       Project Design 2       KZ       5         137PZ02       Project Design 2       KZ       5         Development of a complete noise study of the selected area, containing a significant share of rail traffic. Elaboration of a study including an assessment of the noise situation of the area and a possible proposal for a solution to the given situation. Application of knowledge of the relevant legislation, methodological guidelines for the calculation of traffic noise levels and prediction software intended for determining the noise load.       KZ       5         141PZ02       Project Design 2       KZ       5         The project serves to intensify the cooperation between the student and the department. During the project students use the acquired knowledge from hydraulics, hydrology and other related technical and natural disciplines. It is supervised by the staff of the department, river hydraulics, small catchment hydrology, subsurface hydrology, urbanized catchment hydrology and hydraulic transport.         142PZ02       Project Design 2       KZ       5         The course is designed as a project blore the thesis. Students will work with their thesis advisors on their thesis topic. The aim is to improve the level of the bachelor thesis.       5         142PZ02       Project Design 2       KZ       5         The subject is in fact pre-diploma (bachelor) thesis project. Students therefore will train independent work in direction of their final thesis. The aim there is to prepare students for their	renewable sources, etc	. The content of the work can be the elaboration of a research study comprising the processing of discoveries from the literatu	ure, the execution	and analysis of
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	Solution of practical top	ic from the field of experimental geotechnics - familiarization with testing procedures in the laboratory and in the field (Under	ground Laborator	y Josef -
http://ceg.fsv.cvut.cz). Literature review, preparation and execution of tests, evaluation. Topics are linked to CEG research projects. Suitable as a preparation for bachelor thesis. The	http://ceg.fsv.cvut.cz). L	iterature review, preparation and execution of tests, evaluation. Topics are linked to CEG research projects. Suitable as a preparation	paration for bache	elor thesis. The
colution takes place ofter on individual excement with the supervisor of particular tania	solution takes place aft	er an individual agreement with the supervisor of particular topic.		
solution takes place after an individual agreement with the supervisor of particular topic.				

### Code of the group: BZ202008\_1

Name of the group: Stavební inženýrství, specializace Inženýrství životního prost edí, bakalá ská práce Requirement credits in the group: In this group you have to gain at least 12 credits Requirement courses in the group: In this group you have to complete at least 1 course Credits in the group: 12 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
143BAPZ	Bachelor Thesis Michal Sn hota, Tomáš Dostál, Martin Do kal, Martin Šanda, Josef Krása, Petr Kavka, Václav David, Milena Císlerová, Petr Koudelka, Martin Šanda Tomáš Dostál (Gar.)	Z	12	10C	L,Z	S1
101BAPZ	Bachelor Thesis Jozef Bobok Jozef Bobok Jozef Bobok (Gar.)	Z	12	10C	L,Z	S1
127BAPZ	Bachelor Thesis František Pospíšil, Václav Jetel, Marek Janatka, Ji í Kupka <b>Ji í Kupka</b> Ji í Kupka (Gar.)	Z	12	10C	L,Z	S1
133BAPZ	Bachelor Thesis	Z	12	10C	L,Z	S1
135BAPZ	Bachelor Thesis Jan Pruška	Z	12	10C	L,Z	S1
136BAPZ	Bachelor Thesis Michal Uhlík Petr Mondschein (Gar.)	Z	12	10C	L,Z	S1
137BAPZ	Bachelor Thesis Lenka Lomoz, Petra Vá ová Lenka Lomoz Lenka Lomoz (Gar.)	Z	12	10C	L,Z	S1
141BAPZ	Bachelor Thesis Michal Dohnal Michal Dohnal Michal Dohnal (Gar.)	Z	12	10C	L,Z	S1

142BAPZ	Bachelor Thesis Petr Nowak, Pavel Fošumpaur, Ladislav Satrapa, Martin Horský, Petra Nešvarová Chvojková, Jitka Ku erová, Tomáš Dally, Michal Toman, Miroslav Brou ek, Miroslav Brou ek	Z	12	10C	L,Z	S1
144BAPZ	Bachelor Thesis Iva iháková Bronislava Rohanová Jana Náb Iková (Gar.)	Z	12	10C	L,Z	S1
154BAPZ	Bachelor Thesis Martin Štroner Martin Štroner (Gar.)	Z	12	10C	L,Z	S1
155BAPZ	Bachelor Thesis Jind ich Hoda, Zden k Vysko il Jind ich Hoda Jind ich Hoda (Gar.)	Z	12	10C	L,Z	S1
220BAPZ	Bachelor Thesis Ji í Svoboda, Radek Vaší ek Radek Vaší ek (Gar.)	Z	12	10C	L,Z	S1
Characteristics of the životního prost edí, ba	courses of this group of Study Plan: Code=BZ202008_1 Name	e=Stavební i	nženýrstv	ví, specia	lizace Inž	enýrství
	-				Z	12
	chelor Thesis	from offer sives	hy coloriad	denertment	- 1	
	usually is a continuation of study and pre-diploma seminar. Student selects the topic	from other given	by selected	department.	In close coo	peration with
responsible supervisor, stude						10
	chelor Thesis				Z	12
Please contact your teacher of						
	chelor Thesis				Z	12
	an independent professional work of the student, of a larger scope - completing the ba	achelor's degree	e of study. Th	e defence of	the bachelor	thesis is one
of the components of the stat				1		
	chelor Thesis				Z	12
	fication thesis of a bachelor's degree. It can take the form of a research study on the to	•	or masonry	structures ar	nd their relation	ons on
	iant comparative analysis or parametric study or performing and analysing experimer	nts, etc.		1		
	chelor Thesis				Z	12
	s the bachelor studies. The student demonstrates that he/she can apply the knowledge	e acquired during	g the study or	n a specific p	roject. The ba	achelor thesis
is related to selected subjects	s of the study plan. For students of Z.				î	
136BAPZ Bac	chelor Thesis				Z	12
The assigned topic of bachelo	r theses can be a project, traffic surveys, research of selected issues with application in					-
			ar avamala t	he design of		
tests to verify the functionality	of various materials for pavements, etc. In terms of design, the most common topics		-	-		
tests to verify the functionality reconstruction of a selected s	ection of a road (bypass, flyover), the design of a road network in a selected area of t	the city, the desig	gn of a new o	construction	or reconstruc	tion of
tests to verify the functionality reconstruction of a selected s intersections, the design of ar	ection of a road (bypass, flyover), the design of a road network in a selected area of t n airport, heliport, etc. In terms of pavement structures and road construction technolo	the city, the designed by the city, the most find the most	gn of a new o requent topic	construction of s of work are	or reconstruc , for example	tion of e, comparison
tests to verify the functionality reconstruction of a selected s intersections, the design of ar of different material solutions f	ection of a road (bypass, flyover), the design of a road network in a selected area of t n airport, heliport, etc. In terms of pavement structures and road construction technolo for asphalt or concrete pavements, including the relevant composite materials or input c	the city, the designed by the city, the most find the most	gn of a new o requent topic	construction of s of work are	or reconstruc , for example	tion of e, comparison
tests to verify the functionality reconstruction of a selected s intersections, the design of ar of different material solutions f of a particular material or type	section of a road (bypass, flyover), the design of a road network in a selected area of t in airport, heliport, etc. In terms of pavement structures and road construction technolo for asphalt or concrete pavements, including the relevant composite materials or input c e of structure by laboratory methods, or carrying out simulations, etc.	the city, the designed by the city, the most find the most	gn of a new o requent topic	construction of s of work are ates, etc.), as	or reconstruct, for example sessment of	tion of e, comparison the behaviour
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### List of courses of this pass:

Code	Name of the course	Completion	Credits		
1000DPR	Industrial Training (3 weeks)	Z	0		
Professional practice is an important part of academic education in undergraduate degree programmes. The student will gain a basic understanding of duties and professional					
respon	sibilities. The professional practice evaluates the sum of all knowledge acquired through previous theoretical studies and is a proof o	f their acquisition.			
101BAPZ	Bachelor Thesis	Z	12		
	Please contact your teacher or guarantor of this subject.				
101KG01	Constructive Geometry	Z,ZK	5		
Projections and p	rojective methods. Axonometry. Oblique projection. Orthogonal axonometry. Displaying prisms, cones, cylinders, pyramids, balls. Sirr	ple problems in ax	onometry.		
Basics of lighting	of solids and groupes of solids. Perspective projection. Curves, parametrisation. Frenet's trihedron, torsion and curvature. Helical sur	faces. Quadrics. S	urfaces in		
	building industry.				

	Mathematics 1	Z,ZK	6
404144.00	https://mat.fsv.cvut.cz/bubenik/mat1detail.htm	7 71/	0
101MA02	Mathematics 2 https://mat.fsv.cvut.cz/vyuka/bakalari/eng/ls/MT02/	Z,ZK	6
101MA03	Mathematics 3	Z,ZK	6
101PZ02	https://mat.fsv.cvut.cz/vyuka/bakalari/eng/zs/ Project Design 2	KZ	5
1025	Please, contact the guarantor of this subject.	Z,ZK	4
102FYI This is a basic ph	Physics pysics course for students of the study programmes Civil Engineering; Management and Economics in Construction. The course focu-		4 and basic
	he following areas are covered in the course: Mechanics of material points (particles) and deformable bodies. Discrete and continuou		
and dynamics of	of a material point (particle). Mechanical force fields. Gravitational field. Mechanical vibrations. Material deformation. Elastic waves. Ac	coustics. Hydrome	chanics.
104YC2A	Fundamentals of thermodynamics. Heat transfer. 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		1
-	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		
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 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 indust		1
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:
40.0004	Deutsch im Bauwesen	_	
104YCA1	English 1 ode: 104Y CA1 Scope: 0 + 2 (practical sessions) Number of credits: 1 Final assessment: credit The aim of the compulsory English cours	Z ze is to enhance the	
	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	ice 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)	7	4
104YCN1 The compulsory co	German 1 urse - German Language for Civil Engineering is aimed at practising professional vocabulary within the scope of the construction indusi	Z	professional
	the necessary presentation skills in order to present all relevant professional issues. The end-of-course requirement is a credit. Liter. Deutsch im Bauwesen		-
105SVAI	Social Sciences and Architecture	Z,ZK	5
-	hes the teaching of several social sciences - economics and economic policy, political science and law - with an overview of the deve	-	
	ts will become familiar with basic economic concepts, the essence of economic and social policy and the place of construction in the er aw is an overview of the institutions of Roman law, an interpretation of the constitution, human rights and selected legal norms, espec		
	ce part outlines the development of political thought in antiquity and in the period from the Renaissance to the present. Lectures on t	-	
			tecture and
	construction provide a comprehensive explanation of the history of architecture from antiquity to postmodernism and deconstru		tecture and
122TSVZ	Technology of Construction Z	iction.	tecture and
123CHE	Technology of Construction Z Chemistry	zction. Z,ZK Z,ZK	6 4
123CHE Introduction to ger	Technology of Construction Z Chemistry neral chemistry - chemical bond, compounds, reactions, equilibrium. Chemistry of environment - water, atmosphere, pedosphere. Che	Iction. Z,ZK Z,ZK emistry of building	6 4 materials -
123CHE Introduction to ger inorganic binders,	Technology of Construction Z Chemistry neral chemistry - chemical bond, compounds, reactions, equilibrium. Chemistry of environment - water, atmosphere, pedosphere. Chi glass, ceramic, metals, natural polymers, wood, synthetic polymers on C and Si basis. Introduction to degradation of building materia	Iction.	6 4 materials - I chemistry.
123CHE Introduction to ger inorganic binders, 123SH01	Technology of Construction Z Chemistry neral chemistry - chemical bond, compounds, reactions, equilibrium. Chemistry of environment - water, atmosphere, pedosphere. Che	Inction. Z,ZK Z,ZK emistry of building als and to analytica Z,ZK	6 4 materials - I chemistry. 5
123CHE Introduction to ger inorganic binders, 123SH01 Building materials	Technology of Construction Z         Chemistry         neral chemistry - chemical bond, compounds, reactions, equilibrium. Chemistry of environment - water, atmosphere, pedosphere. Cheglass, ceramic, metals, natural polymers, wood, synthetic polymers on C and Si basis. Introduction to degradation of building material         Building Materials         building Materials         a basis course. Clasification of the materials. Structure of materials. Main properties of materials. Application of materials in building material testing.	Inction. Z,ZK emistry of building als and to analytica Z,ZK constructions. Intro	6 4 materials - I chemistry. 5 oduction to
123CHE Introduction to ger inorganic binders, 123SH01 Building materials 124PSI1	Technology of Construction Z Chemistry neral chemistry - chemical bond, compounds, reactions, equilibrium. Chemistry of environment - water, atmosphere, pedosphere. Chi glass, ceramic, metals, natural polymers, wood, synthetic polymers on C and Si basis. Introduction to degradation of building materia Building Materials - basis course. Clasification of the materials. Structure of materials. Main properties of materials. Application of materials in building material testing. Building Structures 11	Inction. Z,ZK Z,ZK emistry of building als and to analytica Z,ZK constructions. Intro Z	6 4 materials - I chemistry. 5 oduction to 4
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123CHE Introduction to ger inorganic binders, 123SH01 Building materials 124PSI1 The concept of des structural system,	Technology of Construction Z Chemistry neral chemistry - chemical bond, compounds, reactions, equilibrium. Chemistry of environment - water, atmosphere, pedosphere. Chi glass, ceramic, metals, natural polymers, wood, synthetic polymers on C and Si basis. Introduction to degradation of building materia Building Materials - basis course. Clasification of the materials. Structure of materials. Main properties of materials. Application of materials in building material testing. Building Structures 11	Iction. Z,ZK emistry of building als and to analytica Z,ZK constructions. Intro Z ements for building the structural desi	6 4 materials - Il chemistry. 5 oduction to 4 g structures, gn of walls,
123CHE Introduction to ger inorganic binders, 123SH01 Building materials 124PSI1 The concept of des structural system, columns), floor stru concret	Technology of Construction Z           Chemistry           neral chemistry - chemical bond, compounds, reactions, equilibrium. Chemistry of environment - water, atmosphere, pedosphere. Che           glass, ceramic, metals, natural polymers, wood, synthetic polymers on C and Si basis. Introduction to degradation of building material           Building Materials           s - basis course. Clasification of the materials. Structure of materials. Main properties of materials. Application of materials in building material testing.           Building Structures 11           sign of building structures with a comprehensive consideration of the functional requirements imposed on individual elements. Require interaction of elements, spatial effect of the structural system. Vertical load-bearing structures (functions, requirements, principles of the structural design of vaults, wooden ceilings, reinforced concrete ceilings, ceramic co e ceilings). Expansion joints in load-bearing systems. Structural systems of single and multi-storey buildings, structural systems of lor	Inction. Z,ZK emistry of building als and to analytica Z,ZK constructions. Intro Z ements for building the structural desi increte ceilings, ste	6 4 materials - 1 chemistry. 5 oduction to 4 g structures, gn of walls, seel and steel
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123CHE Introduction to ger inorganic binders, 123SH01 Building materials 124PSI1 The concept of des structural system, columns), floor stru concret 124PSI2 Staircases, sloping conditions, types of	Technology of Construction Z         Chemistry         neral chemistry - chemical bond, compounds, reactions, equilibrium. Chemistry of environment - water, atmosphere, pedosphere. Cheglass, ceramic, metals, natural polymers, wood, synthetic polymers on C and Si basis. Introduction to degradation of building materia         Building Materials         a basis course. Clasification of the materials. Structure of materials. Main properties of materials. Application of materials in building material testing.         Building Structures 11         sign of building structures with a comprehensive consideration of the functional requirements imposed on individual elements. Requir interaction of elements, spatial effect of the structural system. Vertical load-bearing structures (functions, requirements, principles of the structural design of vaults, wooden ceilings, reinforced concrete ceilings, ceramic co e ceilings). Expansion joints in load-bearing systems. Structural systems of single and multi-storey buildings, structural systems of lor Building Structures 21         ramps, lift shafts - requirements, building plinth area (construction details). Basement - solution of basement walls, requirements, protectio il expansion joints in buildings of joints design in bearing structures, thermal expansion, compensation of differences in second colspansion joints in building structures of the structural solutions, basics of typology, design principles, construction details, railing. Building structures in building solutions, basics of typology, design principles, construction details, requirements, protection of lexpansion joints in buildings - principles of joints design in bearing structures, thermal expansion, compens	Inction. Z,ZK emistry of building als and to analytica Z,ZK constructions. Intro Z ements for building the structural desi increte ceilings, ste ng-span structures Z,ZK uilding foundations on against water, w	6 4 materials - il chemistry. 5 oduction to 4 g structures, gn of walls, eel and steel 4 - foundation aterproofing
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126STMN	Construction Management	Z,ZK	6
	ed concepts. Methods to support project management. Legal standards, SN and ISO standards. The essential aspects of Project Ma	anagement. Cons	truction as
project product. Oł	bjectives, strategies, phases and surroundings of the construction project. Project manager role. Purchases and contracts in the proje	ct. Quality manag	gement, ris
management. F	Financial management and project evaluation. Feasibility study. Cost and resource management. Change procedures. The Act on Spa	itial Planning and	Building
-	Act on the Awarding of Public Contracts, and the definition of terms. Business obligation relationships, the conclusion of contracts, the	-	-
business condition	ns. Business public competition, its influence on the obligations of participants. Securing the commitment - contractual penalty, guaran	tee. The main co	ntract type
	in construction - are contract for the conclusion of a future contract, purchase contract, contract for work, and content of the con		21
127BAPZ	Bachelor Thesis	Z	12
	but hesis - an independent professional work of the student, of a larger scope - completing the bachelor's degree of study. The defence	—	
	of the components of the state final examination.		110313 13 01
1070701		KZ	5
127PZ01	Project Design 1		5
	e project is tought in cooperation with other departments. Preparation for bachelor thesis, collecting the information, preparation of dat		
127PZ02	Project Design 2	KZ	5
It is a proj	ect course, which is taught in the form of individual consultations. Teaching is provided by Ing. arch. František Pospíšil, Ph.D. and Ing.	arch. Daniel Stoj	an.
127VEIS	Public Infrastructure	Z,ZK	7
-	The aim of the course is to introduce students to the work of urban planners and spatial planners when designing public infrastructure	e concepts.	
127YPSK	Town and Regional Planning of Settlements and Landscape	Z,ZK	6
	in the field of Environmental Engineering is an introduction to urbanism, urban design, spatial and regional planning as a basis for th	•	a bachelor
-	f Urban Design, Town and Regional Planning. It complements the semester projects with theory and a broader professional context ar		
	of the state bachelor's exam organized by the Dep. of Urban Design, Town and Regional Planning.		
132PRPE	Strength of Materials	Z.ZK	6
	he theory of elasticity: stress and strain of straight beams subjected to bending and free torsion, ultimate plastic capacity of a member	,	-
	the of straight compression members. Basic assumptions, quantities, and equations describing the stress and strain state in 3D conti	-	
132SM01	Structural Mechanics 1	Z,ZK	6
oncurrent forces,	force systems acting on rigid bodies in space/plane, moment of a force about a point and line. Supports of a rigid body, reaction forces	s. Compound two	-aimensio
	structures. Trusses. Reaction forces applying the principle of virtual work.		
132SM02	Structural Mechanics 2	Z,ZK	6
	agrams of simple statically determinate plane structures and compound two-dimensional structures. Multiaxially loaded cantilever. De		stress and
pre	positions of its distribution in a cross section. Equivalence of internal forces. Geometry of mass and areas, centre of gravity and moment	ents of inertia.	
132SM3	Structural Mechanics 3	Z,ZK	5
eformation and fo	rce method for the solution of reactions and internal forces on statically indeterminate beams, frames, and truss structures. Calculatio	on of displacemer	nts of bean
	frames, and truss structures using the principle of virtual works.		
133BAPZ			-
	Bachelor Thesis	7	12
	Bachelor Thesis	Z	12 ations on
	is is the qualification thesis of a bachelor's degree. It can take the form of a research study on the topic of concrete or masonry struct	—	1
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reconstruction of a selected section of a road (bypass, flyover), the design of a road network in a selected area of the city, the design of a new construction or reconstruction of intersections, the design of an airport, heliport, etc. In terms of pavement structures and road construction technologies, the most frequent topics of work are, for example, comparison of different material solutions for asphalt or concrete pavements, including the relevant composite materials or input components (binders, aggregates, etc.), assessment of the behaviour of a particular material or type of structure by laboratory methods, or carrying out simulations, etc.

136DSUZ	of a particular material of type of structure by laboratory methods, or carrying out simulations, etc.		
1300302	Transport Structures and Urban Planning	Z,ZK	7
The course 136DS	JZ is composed of 3 issues, which build on each other and complement each other. These are the area of transport structures (roads	and rail transport -	scope 3+1)
and the area of urb	an planning and spatial planning (scope 2+0). Unlike the road construction and railroad construction sections, the urban planning se	ction does not end	with credit.
Transport Structure	s - Roads (R): Introduction to basic terminology in the part of roads, history. Road Act and related legislative and technical regulation	s, their impact on I	oad design.
Design categories	of roads and motorways, design speed, directional and elevation design of routes, cross-sectional layout of roads and motorways, ea	rthwork - dimensio	ons, shapes,
drainage. Urban	roads, division and marking, definition of MK space, differences in design, operation and equipment. Carriageway, division, design p	rinciples. Safety ec	luipment,
junctions and cross	ings. Transport Structures - Rail transport (RT): Introduction to basic terminology, Issues of railway crossings from the point of view of	security, design an	d operation.
Tram transport - his	story, principles of tram track construction, interaction with the environment. Metro as a system of urban rail transport. Basic principles	s and parameters,	metro lines.
Railway construction	ns - an introduction to the design and construction of a railway track in the conditions of the Czech Republic, the basic elements of the	railway superstruc	ture. Spatial
	Planning (SP): Teaching spatial planning and urban planning, spatial planning tools and procedures for their acquisition.		
136DSZP	Transport Structures and Environment	Z,ZK	6
The course is desig	ned as an introduction to the problems of the relationship between road and rail transport and the environment. In more detail, it is a	imed at the issue	of noise and
anti-noise measure	s from the point of view of a civil engineer in the field of rail transport. In the field of road transport, the subject is focused on traffic cal	Iming and control,	solutions for
	urban and pedestrian zones, solutions for non-motorized traffic, including material, technological and design solutions.		
136PZ02	Project Design 2	KZ	5
137BAPZ	Bachelor Thesis	Z	12
	sis is the first comprehensive work prepared by students during their university studies on a chosen topic. The basic tasks are: work	-	1
	fessional text, citation habits, etc. A bachelor's thesis usually takes the form of a design (reconstruction of a section of a railway line, s	•	
	ssing an overview of the current state of solutions in a certain area) or laboratory (including the execution and evaluation of specified		, 100001011
137PZ02		KZ	5
	Project Design 2	1	-
	complete noise study of the selected area, containing a significant share of rail traffic. Elaboration of a study including an assessmer		
area and a possible	e proposal for a solution to the given situation. Application of knowledge of the relevant legislation, methodological guidelines for the ca		noise ieveis
	and prediction software intended for determining the noise load.	_	
141BAPZ	Bachelor Thesis	Z	12
÷	helor thesis in the field of hydraulics, hydrology, water courses or flood protection design. The thesis has the character of a study, in t		
expected to continu	e in the follow-up master's studies, it is assumed that the thesis includes, among other things, a detailed analysis of the problems for	r the follow-up mas	ster's thesis.
141HYA	Hydraulics	Z,ZK	5
A course deals with	n issues of hydrostatics and hydrodynamics with aiming at civil engineering applications. There are analysed tasks related to hydrosta	atic and hydrodyna	mic loading
	of structures, pipeline flow, open channel flow and groundwater flow.		
141KMH	Climatology, Meteorology, Hydrology	Z,ZK	6
The course focuse	s on the following thematic areas: General circulation of the atmosphere, climate factors and climate zones. Composition and structu	re of the atmosphe	re, water in
the atmosphere	. Air masses and fronts. Cloud development and precipitation. Hydrologic cycle and hydrologic balance. Interception, infiltration, evap	oration. Runoff ge	neration,
-	rainfall-runoff relationships, flood routing, discharge measurement. Frequency analysis of extreme events. Hydrologic desig	n	
141PZ01	Project Design 1	KZ	5
	1 at the Department of Hydraulics and Hydrology is focused on the modeling of the water component of the environment or the hydr		-
,	catchment.		
141PZ02	Project Design 2	KZ	5
		1112	
	to intensify the cooperation between the student and the department. During the project students use the acquired knowledge from h	vdraulics hydrolog	-
	to intensify the cooperation between the student and the department. During the project students use the acquired knowledge from h		gy and other
related technical	and natural disciplines. It is supervised by the staff of the department, preferably directly by the supervisor of the bachelor thesis. In the	ne case of the Dep	gy and other artment of
related technical	and natural disciplines. It is supervised by the staff of the department, preferably directly by the supervisor of the bachelor thesis. In the longy, work is offered in the areas of watercourse revitalization, river hydraulics, small catchment hydrology, subsurface hydrology, up and the supervisor of the bachelor thesis. In the longy, work is offered in the areas of watercourse revitalization, river hydraulics, small catchment hydrology, subsurface hydrology, up and the supervisor of the bachelor thesis.	ne case of the Dep	gy and other artment of
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143DEOK	Dendrology and Landscape Protection	Z,ZK	6
	sents a synthesis of topics related to applied ecology and at the same time dendrology, focused on practical use in the creation and p	,	ndscape as
	well as within urbanized units.		•
143GIPU	GIS and Land Consolidation	Z,ZK	7
	s of instruction - Land consolidation and basics of geomatics (GIS applied for KPÚ). Basics of land consolidation - history, course and		l .
	ning common facilities, legislation. Introduction to GIS and main components of common systems. Data structure and basics of image		
geographically loca	lized data. Basics of databases and work with vector and raster formats of geographic data. GIS in engineering practice and landsca	pe engineering. Pr	eparation of
	a digital terrain model, land use maps and other inputs and available databases in the Czech Republic. Processing of remote sens	ing data.	
1430DK0	Waste Management and Contamination	Z,ZK	6
	and circular economy with a focus on construction and municipal waste. Waste collection, utilization and disposal systems (municipal	,	-
	as, landfill technology and post-closure reclamation. Measurement of waste production, biowaste management-composting and anar		-
	waste in the Czech Republic. Remediation of pollution - remediation methods to decontaminate the territory.	Ū	
143PED	Soil Science	Z,ZK	5
	ronment. Soil genesis, pedogenetic factors. Soil structure and texture. Physical and physiochemical soil properties. Physical, chemica		
	ation. Soil survey and mapping. Soils of the world. Clay minerals, soil chemistry. Hydrostatic and hydrodynamic behaviour of soil wate		
	soil moisture. Flow of water in variably saturated porous media.		
143PZ01	Project Design 1	KZ	5
	rk on a study of the construction of a small water reservoir and on the revitalization of a small water courses under the reservoir. The		-
	computational and drawing part.		,
143PZ02	Project Design 2	KZ	5
	ct pre-diploma (bachelor) thesis project. Students therefore will train independent work in direction of their final thesis. The aim there		1
	dependent work on final thesis, to show them how to properly work with data, how to practically process them, and how to conclude		
143TOKT	Landscape Design and Protection	Z,ZK	7
	Erosion Protection	Z,ZK	6
143YPEO		•	-
	soil erosion process, its risks and negative effects. Basic principles of catchment management. Negative effects of soil erosion on ind ety. Methods of soil loss and sediment transport determination, design of soil erosion control measures. State tools and policies in so	-	uscape and
			40
144BAPZ	Bachelor Thesis	Z	12
4440700	Bachelor Thesis concerning sewerage, waste water treatment, water suply, networks and balnology.	1/7	-
144PZ02	Project Design 2	KZ	5
	ta collection and processing for a given site, design of scenarios of foul water drainage and storm water drainage or infiltration. WATE	0	
	site. Data collection, determination of the way of water supply. Design of feeding pipelines, water storage and main distribution pipelin longitudinal profile.	les. Drawing of sit	uation and
		7 71/	<u>^</u>
144VHOB	Urban water management	Z,ZK	6
	nemical composition of water. Dissolved and particular matters. Metals, halogens. Nitrogen, sulphur and phosphorous compounds. No		
	utrophication. Hydrobiology: Types of natural waters. Ecology of aquatic organisms. Hydrobiology of surface, drinking and waste wate stems of water purification. Water distribution system Sewer system: Wastewater. Shapes and sizes of the sewers. Types of sewerage		
-	verflows. Environmental protection Waste water treatment plant: domestic wastewater treatment plant. Wastewater treatment plant. m		
Combined Sewer o	treatment. Removal of nitrogen and phosphorus. Sludge		g. Diologicai
154BAPZ	Bachelor Thesis	Z	12
104DALZ	Final thesis, prepared according to the assignment.	2	12
154PZ02		KZ	5
1546202	Project Design 2 Theoretical, measurement and computational preparation for solving the bachelor thesis according to the topic.	Ν <u>Ζ</u>	5
4540004		7 71/	<u>^</u>
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	-	
and present state	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	ina spaliai plannin	g Cadastre
		7	10
155BAPZ	Bachelor Thesis	Z	12
1555700	Processing according to the work assignment		-
155PZ02	Project Design 2	KZ	5
	Processing of the project according to the assignment		
220BAPZ	Bachelor Thesis	Z	12
	Bachelor thesis elaboration with possible use of geotechnical laboratory and underground facility Josef (https://www.stolajosef		
220PZ02	Project Design 2	KZ	5
	ctical topic from the field of experimental geotechnics - familiarization with testing procedures in the laboratory and in the field (Under		
http://ceg.fsv.cvut.	cz). Literature review, preparation and execution of tests, evaluation. Topics are linked to CEG research projects. Suitable as a preparation and execution of tests, evaluation.	ation for bachelor	thesis. The
	solution takes place after an individual agreement with the supervisor of particular topic.		-
TV1	Physical Education	Z	0
TV2	Physical Education	Z	0

For updated information see <u>http://bilakniha.cvut.cz/en/FF.html</u> Generated: day 2025-08-08, time 15:05.