# Study plan

## Name of study plan: Civil Engineering

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: 120 Elective courses credits: 0 Sum of credits in the plan: 120

Note on the plan: tento studijní plán platí od roku 2020 a pokra uje v 5. až 8. semestru podle jednotlivých

specializací

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

Constructive Geometry

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:

101KG01

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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 K ivková, Iva Malechová, Michal Zdražil, Iva Slámová, Jana ápová, Jozef Bobok, Michal Beneš, Zden k Skalák, Ond ej Zindulka, Aleš Nekvinda Aleš Nekvinda (Gar.)	Z,ZK	6	2P+3C	Z,L	Z
105SVAI	Social Sciences and Architecture Josef Záruba Pfeffermann, Bo ivoj Marek, Rudolf Pošva, Dana ímanová, Jana Hrbková Josef Záruba Pfeffermann Josef Záruba Pfeffermann (Gar.)	Z,ZK	5	4P+1C	L	Z
123CHE	Chemistry Jana Náb Iková, Martin Keppert, Milena Pavlíková Milena Pavlíková (Gar.)	Z,ZK	4	3P+1C	L	Z
132SM01	Structural Mechanics 1 Michal Polák, Daniel Rypl, Mat j Lepš, Šimon Glanc, Marek Tyburec, Tomáš Koudelka, Aleš Pali ka, Karel Pohl, Tomáš Plachý, 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 Kate ina Ková ová	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

Projections and projective methods. Axonometry. Oblique projection. Orthogonal axonometry. Displaying prisms, cones, cylinders, pyramids, balls. Simple problems in a	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.	

Z.ZK

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

The subject combines the teaching of several social sciences - economics and economic 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 Introduction to general chemistry - chemical bond, compounds, reactions, equilibrium. Chemistry of environment - water, atmosphere, pedosphere. Chemistry of building materials inorganic binders, glass, ceramic, metals, natural polymers, wood, synthetic polymers on C and Si basis. Introduction to degradation of building materials and to analytical chemistry.

132SM01 Structural Mechanics 1 Z.ZK

Concurrent forces, force systems acting on rigid bodies in space/plane, moment of a force about a point and line. Supports of a rigid body, reaction forces. Compound two-dimensional structures. Trusses. Reaction forces applying the principle of virtual work.

Geomechanics 1

The course focuses on the understanding of basic geological laws and principles in relation to architecture, civil engineering and urban planning. Emphasis is placed on explaining the influence of geological processes, both endogenous and exogenous, on the rock environment and how the geological situation affects the design of structures and their interaction with the rock environment. At the same time, attention is paid to the technical properties of rocks with regard to their practical applications. The course also includes a brief introduction to the regional geology of the Czech Republic.

Code of the group: BJ20190200

Name of the group: Stavební inženýrství, varianta J, 2. semestr

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

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

Credits in the group: 28 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
101MA02	Mathematics 2 Iva Malechová, Iva Slámová, Jozef Bobok, Ivana Pultarová Ivana Pultarová (Gar.)	Z,ZK	6	2P+3C	L,Z	Z
102FYI	Physics Pavel Novák Pavel Novák (Gar.)	Z,ZK	4	3P+1C	L	Z
123SH01	Building Materials  Alena Vimmrová, Miloš Jerman Alena Vimmrová Alena Vimmrová (Gar.)	Z,ZK	5	2P+2C	Z,L	Z
126BIM1	BIM Petr Mat jka, Josef Žák Josef Žák (Gar.)	Z	1	1P+1C	Z	Z
132SM02	Structural Mechanics 2  Jitka N me ková, Jan Sýkora Michal Polák Michal Polák (Gar.)	Z,ZK	6	2P+2C	L,Z	Z
154SG01	Land Surveying in Civil Engineering Rudolf Urban 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

40414400	NA-th-matica O	7 71/	
101MA02	Mathematics 2	Z,ZK	l b
https://mat.fsv.cvut.cz/v	yuka/bakalari/eng/ls/MT02/	,	
102FYI	Physics	7.7K	4

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

**Building Materials** 

Z,ZK

Building materials - basis course. Clasification of the materials. Structure of materials. Main properties of materials. Application of materials in building constructions. Introduction to

material testing.

126BIM1

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

132SM02 Structural Mechanics 2 Z,ZK

6

Internal forces diagrams of simple statically determinate plane structures and compound two-dimensional structures. Multiaxially loaded cantilever. Definition of normal stress and prepositions of its distribution in a cross section. Equivalence of internal forces. Geometry of mass and areas, centre of gravity and moments of inertia.

154SG01 Land Surveying in Civil Engineering

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

Code of the group: BJ20190300

Name of the group: Stavební inženýrství, varianta J. 3. semestr

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

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

Credits in the group: 30 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
101MA03	Mathematics 3 Iva Malechová, Michal Zdražil, Jozef Bobok, Michal Beneš, Zden k Skalák, Martin Soukenka, Monika Rencová, Jan Lama , Jan Dudák, Michal Beneš Michal Beneš (Gar.)	Z,ZK	6	3P+2C	Z,L	Z
124PSI1	Building Structures 11 Petr Hájek, Ctislav Fiala, Jan R ži ka, Martin Vonka, Eliška Kafková, Lenka Hanzalová, David Hes, Veronika Ka ma íková, Zuzana Rácová Ctislav Fiala Petr Hájek (Gar.)	Z	4	2P+1C	Z	Z
132PRPE	Strength of Materials Tomáš Koudelka, Petr Kabele, Milan Jirásek, Eva Novotná, Martin Došká, Dagmar Jandeková, Tomáš Med ický, Michael Somr, Tomáš Janda Milan Jirásek Petr Kabele (Gar.)	Z,ZK	6	3P+2C	Z,L	Z
135GM2I	Geomechanics 2l 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 Tomáš Picek, Václav Matoušek, Jana Votrubová, Michal Dohnal, Vojt ch Bareš, Jan Krupi ka, Martin Fencl Václav Matoušek Michal Dohnal (Gar.)	Z,ZK	5	2P+2C	Z,L	Z
142VIZP	Water and Environmental Engineering Martin Fencl, Eva Bílková, Michal Sn hota, Petr Nowak, Tomáš Dostál, Martin Do kal, Martin Šanda, Pavel Fošumpaur, Bohumil Š astný, Martin Horský Ladislav Satrapa (Gar.)		4	3P+1C	Z,L	Z

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

101MA03	Mathematics 3	Z,ZK	6				
https://mat.fsv.cvut.cz/v							
124PSI1	Building Structures 1I	Z	4				
The concept of design of building structures with a comprehensive consideration of the functional requirements imposed on individual elements. Requirements for building structures.							

structural system, interaction of elements, spatial effect of the structural system. Vertical load-bearing structures (functions, requirements, principles of the structural design of walls, columns), floor structures (functions, requirements, principles of the structural design of vaults, wooden ceilings, reinforced concrete ceilings, ceramic concrete ceilings, steel and steel concrete ceilings). Expansion joints in load-bearing systems. Structural systems of single and multi-storey buildings, structural systems of long-span structures.

Strength of Materials

Fundamentals of the theory of elasticity: stress and strain of straight beams subjected to bending and free torsion, ultimate plastic capacity of a member in bending, critical loads and buckling lengths of straight compression members. Basic assumptions, quantities, and equations describing the stress and strain state in 3D continuum, plates and walls.

135GM2I Geomechanics 2I Z,ZK Formation of soils, basic properties of soils, water in soil, strength and deformation properties of soils and their determination, improvement of soil properties, application tasks 141HYA Hydraulics Z,ZK

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

Water and Environmental Engineering

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

Code of the group: BJ20190400

Name of the group: Stavební inženýrství, varianta J, 4. semestr

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

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

Credits in the group: 30

Note on the group.

Note on the gr	oup.					
Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members)  Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
124PSI2	Building Structures 2I Petr Hájek, Veronika Ka ma íková, Tereza Pavl Ji í Pazderka Ji í Pazderka (Gar.)	Z,ZK	4	2P+1C	L	Z
126EKMN	Economics and Management Eduard Hromada, Martin ásenský, Božena Kade ábková, Petr Kal ev Eduard Hromada Eduard Hromada (Gar.)	Z,ZK	7	4P+2C		Z
132SM3	Structural Mechanics 3 Eva Novotná, Michal Šejnoha, Barbora Hálková Petr Kabele Petr Kabele (Gar.)	Z,ZK	5	2P+2C	L,Z	Z
133NNKB	Fundamentals of Structural Design - Concrete  Martin Tipka Martin Tipka (Gar.)	Z,ZK	4	2P+1C	L,Z	Z
134NNKO	Design of Supporting StructuresI - Steel František Wald Michal Jandera Michal Jandera (Gar.)	Z,ZK	3	2P+1C	L	Z

Transport Structures and Urban Planning Ludvík Vébr, František Pospíšil, Ond ej Bret František Pospíšil 136DSUZ 5P+1C Z,ZK

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

**Building Structures 2I** 

Staircases, sloping ramps, lift shafts - requirements, structural and material solutions, basics of typology, design principles, construction details, railing. Building foundations - foundation conditions, types of foundations, requirements, building plinth area (construction details). Basement - solution of basement walls, requirements, protection against water, waterproofing systems. Structural expansion joints in buildings - principles of joints design in bearing structures, thermal expansion, compensation of differences in settlement, construction details. Roof truss systems.

126EKMN **Economics and Management** 

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

132SM3 Structural Mechanics 3 Z,ZK

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

Fundamentals of Structural Design - Concrete

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

Design of Supporting StructuresI - Steel 134NNKO

Z,ZK

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

136DSUZ Transport Structures and Urban Planning Z,ZK

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

Name of the block: 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:

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

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

TV1	Physical Education	Z	0					
TV2	Physical Education	Z	0					

Name of the block: Jazyky

Minimal number of credits of the block: 3

The role of the block: J

Code of the group: BF20190101 I

Name of the group: Povinn volitelný jazyk, 1. 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 quarantors (gar.)	Completion	Credits	Scope	Semester	Role
104YCA1	English 1 Alexandra Steinerová, Jarmila Fu íková, Sandra Giormani, Hana Horká, Petra Martincová, V ra ermáková, Petra Florianová, Svatava Boboková Bartíková, Lucie Simerová Svatava Boboková Bartíková Sandra Giormani (Gar.)	Z	1	2C	Z,L	J
104YCN1	German 1 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=BF20190101\_I Name=Povinn volitelný jazyk, 1. semestr

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

104YCN1 | German 1 | Z | 1

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

Code of the group: BF20190202\_I

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

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

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

Credits in the group: 2 Note on the group:

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

Characteristics of the courses of this group of Study Plan: Code=BF20190202\_I Name=Povinn volitelný jazyk, 2. semestr

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

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

### List of courses of this pass:

Code	Name of the course	Completion	Credits			
101KG01	Constructive Geometry	Z,ZK	5			
Projections and projective methods. Axonometry. Oblique projection. Orthogonal axonometry. Displaying prisms, cones, cylinders, pyramids, balls. Simple problems in axonometry.						
Basics of lighting of solids and 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	'	•			

101MA02	Mathematics 2	Z,ZK	6
	https://mat.fsv.cvut.cz/vyuka/bakalari/eng/ls/MT02/		
101MA03	Mathematics 3 https://mat.fsv.cvut.cz/vyuka/bakalari/eng/zs/	Z,ZK	6
102FYI		Z,ZK	4
	course for students of the study programmes Civil Engineering; Management and Economics in Construction. The course focuses on	•	1
	owing areas are covered in the course: Mechanics of material points (particles) and deformable bodies. Discrete and continuous mod		
and dynamics of a ma	aterial point (particle). Mechanical force fields. Gravitational field. Mechanical vibrations. Material deformation. Elastic waves. Acoustics	s. Hydrome	echanics.
	Fundamentals of thermodynamics. Heat transfer.		
104YC2A		Z,ZK	2
-	04YC2A Scope: 0 + 2 (practical sessions) Number of credits: 1 Final assessment: credit and exam The aim of the compulsory Englis nd grammar within the scope of the chosen field of study and university studies in general (Academic English); the overall focus is on		
•	yle) and communicative competence within the construction industry. The course also seeks to teach students to read technical literat	•	
roduce essential writter	discourse and to express themselves in writing on issues in their field of study. The end of course requirements are a credit and an e	examination	n. Literature
	Horká Hana, Giormani Sandra, Martincová Petra, Nivenová Renata : Professional English for Civil Engineering (Units 6 10)		,
104YC2N	I I	Z,ZK	2
	German Language for Civil Engineering is aimed at practising professional vocabulary within the scope of the construction industry, und acessary presentation skills in order to present all relevant professional issues. The end-of-course requirement is a credit. Literature: A	_	-
exis, and learning the ne	Deutsch im Bauwesen	1. Hallakuva	a, J.DIESSEI
104YCA1	English 1	Z	1
	14Y CA1 Scope: 0 + 2 (practical sessions) Number of credits: 1 Final assessment: credit The aim of the compulsory English course is to		e knowledg
•	within the scope of the chosen field of study and university studies in general (Academic English); the overall focus is on professional l	0 0 1	
- ·	nunicative competence within the construction industry. The course also seeks to teach students to read technical literature and to be all	-	
ritten discourse and to e	xpress themselves in writing on issues in their field of study. The end of course requirements are a credit. Literature: Horká Hana, Giorm Petra, Nivenová Renata : Professional English for Civil Engineering (Units 1 - 5)	iani Sandra	a, iviartincov
104YCN1	German 1	Z	1
l l	German Language for Civil Engineering is aimed at practising professional vocabulary within the scope of the construction industry, und		profession
	ecessary presentation skills in order to present all relevant professional issues. The end-of-course requirement is a credit. Literature:	_	-
	Deutsch im Bauwesen		
105SVAI		Z,ZK	5
=	e teaching of several social sciences - economics and economic policy, political science and law - with an overview of the development		
	pecome familiar with basic economic concepts, the essence of economic and social policy and the place of construction in the economi n overview of the institutions of Roman law, an interpretation of the constitution, human rights and selected legal norms, especially th		
	t outlines the development of political thought in antiquity and in the period from the Renaissance to the present. Lectures on the histo		
	construction provide a comprehensive explanation of the history of architecture from antiquity to postmodernism and deconstruction.	.,	
123CHE	Chemistry	Z,ZK	4
Introduction to general c	hemistry - chemical bond, compounds, reactions, equilibrium. Chemistry of environment - water, atmosphere, pedosphere. Chemistry	of building	materials -
	ceramic, metals, natural polymers, wood, synthetic polymers on C and Si basis. Introduction to degradation of building materials and		
123SH01	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	Z,ZK	5
Building materials - basi	s course. Clasification of the materials. Structure of materials. Main properties of materials. Application of materials in building constru material testing.	actions. inti	oduction to
124PSI1	Building Structures 1I	Z	4
l l	building structures with a comprehensive consideration of the functional requirements imposed on individual elements. Requirements		1
		s for buildin	g structures
•	ction of elements, spatial effect of the structural system. Vertical load-bearing structures (functions, requirements, principles of the stru	uctural des	ign of walls
olumns), floor structures	(functions, requirements, principles of the structural design of vaults, wooden ceilings, reinforced concrete ceilings, ceramic concrete	uctural des ceilings, st	ign of walls, eel and stee
olumns), floor structures concrete ceilir	(functions, requirements, principles of the structural design of vaults, wooden ceilings, reinforced concrete ceilings, ceramic concrete rgs). Expansion joints in load-bearing systems. Structural systems of single and multi-storey buildings, structural systems of long-span	uctural des ceilings, st n structures	ign of walls eel and stees.
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132SM3	Structural Mechanics 3	Z,ZK	5
Deformation and for	orce method for the solution of reactions and internal forces on statically indeterminate beams, frames, and truss structures. Calculation	on of displacemen	ts of beams,
	frames, and truss structures using the principle of virtual works.		
133NNKB	Fundamentals of Structural Design - Concrete	Z,ZK	4
The content of the	ne subject are the basics of load-bearing concrete structures design and the design methodology according to valid standards, includi	ng the determinat	ion of load
•	perties of concrete, the production and testing of concrete, the properties of concrete reinforcement and its interaction with concrete		٠ ا
	concrete structures for basic types of loading (bending, shear, pressure) are the main part of this course. An introduction to serviceable	•	
	he course follows the introductory subject of Civil Engineering program (Structural Mechanics, Elasticity and Strength, Building Mater	<u> </u>	
134NNKO	Design of Supporting StructuresI - Steel	Z,ZK	3
The basics of design	gning steel, steel-concrete and wooden load-bearing structures according to applicable standards, including the determination of load	effects, design dif	erences due
	to the specific properties of individual materials.		
135GM01	Geomechanics 1	Z	3
	s on the understanding of basic geological laws and principles in relation to architecture, civil engineering and urban planning. Empha		
	ical processes, both endogenous and exogenous, on the rock environment and how the geological situation affects the design of struc		
the rock environm	ent. At the same time, attention is paid to the technical properties of rocks with regard to their practical applications. The course also i	ncludes a brief inf	roduction to
10501101	the regional geology of the Czech Republic.	7 71/	
135GM2I	Geomechanics 2I	Z,ZK	5
	pils, basic properties of soils, water in soil, strength and deformation properties of soils and their determination, improvement of soil p		_
136DSUZ	Transport Structures and Urban Planning	Z,ZK	7
	UZ is composed of 3 issues, which build on each other and complement each other. These are the area of transport structures (roads		
	pan planning and spatial planning (scope 2+0). Unlike the road construction and railroad construction sections, the urban planning se		
•	es - Roads (R): Introduction to basic terminology in the part of roads, history. Road Act and related legislative and technical regulation		0
	of roads and motorways, design speed, directional and elevation design of routes, cross-sectional layout of roads and motorways, ea		
•	roads, division and marking, definition of MK space, differences in design, operation and equipment. Carriageway, division, design processing the state of the st		
•	sings. Transport Structures - Rail transport (RT): Introduction to basic terminology, Issues of railway crossings from the point of view of		•
	story, principles of tram track construction, interaction with the environment. Metro as a system of urban rail transport. Basic principles		
Railway Construction	ons - an introduction to the design and construction of a railway track in the conditions of the Czech Republic, the basic elements of the Planning (SP): Teaching spatial planning and urban planning, spatial planning tools and procedures for their acquisition.	railway superstrui	Jule. Spatial
141HYA	Hydraulics	Z.ZK	5
	myuraulics h issues of hydrostatics and hydrodynamics with aiming at civil engineering applications. There are analysed tasks related to hydrosta	,	
A course deals wit	of structures, pipeline flow, open channel flow and groundwater flow.	alic and hydrodyna	arriic loadirig
142VIZP		Z.ZK	4
	Water and Environmental Engineering g semester, students are introduced to the fields of water engineering, water management and environmental engineering. In particu	_,	
•			
	f water and environmental engineering in close relation to other branches of civil engineering. The course is taught in the form of lectunatically into 20 blocks according to the different branches of the discipline (13 times water engineering and 7 times environmental en		
	i basic problems in the field of hydrology, water supply and water structures, especially dams, hydropower and flood issues. All 4 "wat	0 0,	′ 1
Students work or	involved in teaching the course.	er departments c	ii Ki4x ale
1510001	·	7 71/	
154SG01	Land Surveying in Civil Engineering ize of the Earth, substitutive surfaces, cartographic projections Horizontal and vertical control, coordinate calculations Quality control,	Z,ZK	6 lorations in
•	ize of the Earth, substitutive surfaces, cartographic projections Horizontal and vertical control, coordinate calculations Quality control, Id distance measurements Heighting measurements Other geodetic methods in build-up (GNSS, DPZ,) Photogrammetry and laser		
	documentation Geodetic works in build-up State map series of CR and thematic maps for build-up Geographic information systems a	ŭ	•
and present sidle	of real estates Laws and decrees for geodesy and build-up in Czech Republic	ına əpaliai piaililli	ig Cauasiie
T\/4	Physical Education	Z	
1 1/ 1			1 0 1
TV1 TV2	Physical Education	<u>Z</u>	0

For updated information see <a href="http://bilakniha.cvut.cz/en/FF.html">http://bilakniha.cvut.cz/en/FF.html</a> Generated: day 2025-11-27, time 21:16.