### Study plan

### Name of study plan: Management a ekonomika ve stavebnictví

Faculty/Institute/Others:

Department:

Branch of study guaranteed by the department: Welcome page

Garantor of the study branch:

Program of study: Management and Economics in 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: platí pro nástup v akademickém roce 2021

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: BE20210100

Name of the group: Management a ekonomika ve stavebnictví, 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
126DOMT	Development, property valuation and real estate market Jakub Kvasnica, Barbora Romová, Kate ina Eklová, Renáta Schneiderová Heralová, Eduard Hromada, Pavlína Píchová Eduard Hromada Renáta Schneiderová Heralová (Gar.)	Z,ZK	5	4P+1C	Z	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.)		6	2P+3C	Z,L	Z
123CHE	Chemistry Jana Náb Iková, Martin Keppert, Milena Pavlíková Milena Pavlíková Milena Pavlíková (Gar.)	Z,ZK	4	3P+1C	L	Z
132SM01	Structural Mechanics 1  Michal Polák, Daniel Rypl, Mat j Lepš, 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=BE20210100 Name=Management a ekonomika ve stavebnictví, 1. semestr

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10111011	Odliatidative Occilietty	_,ı	
Projections and pro	jective methods. Axonometry. Oblique projection. Orthogonal axonometry. Displaying prisms, cones, cylinders, pyramids, balls.	simple problems in	axonometry.
Basics of lighting o	solids and groupes of solids. Perspective projection. Curves, parametrisation. Frenet's trihedron, torsion and curvature. Helical	surfaces. Quadrics	. Surfaces in
building industry.			
126DOMT	Development, property valuation and real estate market	Z,ZK	5
The subject provide	s basic knowledge about the functioning of the commercial and residential real estate market, supplemented by examples from pra	ctice in individual n	narket segments
The development p	rocess and its individual phases from acquisition, through planning, own construction and exit - practical examples. Compilation	of the cash flow of	the developmen
project. Financing of	ptions for development projects and existing investment properties, different aspects of individual types of investors in real estate	projects. The dev	elopment projec
consists of a descri	otion of the considered development in the specified area, including a layout design, market analysis, financing proposal, budget	and project valuati	on. Developmen
project (in the form	of consultations during the entire semester)		
101MA01	Mathematics 1	Z,ZK	6
https://mat.fev.cvut	cz/hubenik/mat1detail htm	•	'

123CHE | Chemistry | Z,ZK | 4 | 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. Reaction forces applying the principle of virtual work.

135GM01 Geomechanics 1

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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: BE20210200

Name of the group: Management a ekonomika ve stavebnictví, 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 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=BE20210200 Name=Management a ekonomika ve stavebnictví, 2. semestr

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

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

123SH01 Building Materials Z,ZK 5

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

126BIM1 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 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

Z,ZK

6

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

Code of the group: BE20210300

Name of the group: Management a ekonomika ve stavebnictví, 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 <b>Milan</b> 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 <b>Václav Matoušek</b> Michal Dohnal (Gar.)	Z,ZK	5	2P+2C	Z,L	Z
142VIZP	Water and Environmental Engineering Martin Fenci, 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=BE20210300 Name=Management a ekonomika ve stavebnictví, 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	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, 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	insion joints in load-bearing systems. Structural systems of single and multi-storey buildings, structural systems of long-span	structures.							
132PRPE	Strength of Materials	Z,ZK	6						
Fundamentals of the the	eory of elasticity: stress and strain of straight beams subjected to bending and free torsion, ultimate plastic capacity of a men	nber in bending, c	ritical loads and						
buckling lengths of strai	ght compression members. Basic assumptions, quantities, and equations describing the stress and strain state in 3D continu	uum, plates and w	alls.						
135GM2I	Geomechanics 2I	Z,ZK	5						
Formation of soils, basi	properties of soils, water in soil, strength and deformation properties of soils and their determination, improvement of soil p	roperties, applica	ion tasks						
141HYA	Hydraulics	Z,ZK	5						
A course deals with issu	ues of hydrostatics and hydrodynamics with aiming at civil engineering applications. There are analysed tasks related to hydr	ostatic and hydro	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	ticular, emphasis i	s placed on the						
practical aspects of water and environmental engineering in close relation to other branches of civil engineering. The course is taught in the form of lectures and tutorials. The lectures									
are divided thematically	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	udents 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								

Code of the group: BE20210400

Name of the group: Management a ekonomika ve stavebnictví, 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.

involved in teaching the course.

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
124PSI2	Building Structures 2l 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

136DSUZ	Transport Structures and Urban Planning	Z,ZK	7	5P+1C	L,Z	Z
	Ludvík Vébr, František Pospíšil, Ond ej Bret <b>František Pospíšil</b>				· ·	1

#### Characteristics of the courses of this group of Study Plan: Code=BE20210400 Name=Management a ekonomika ve stavebnictví, 4. semestr

124PSI2 Building Structures 2I

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

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

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

132SM3 Structural Mechanics 3

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

133NNKB Fundamentals of Structural Design - Concrete

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

134NNKO Design of Supporting StructuresI - Steel Z,ZK

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

136DSUZ Transport Structures and Urban Planning

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

Name of the block: Compulsory courses in the program

Minimal number of credits of the block: 116

The role of the block: P

Code of the group: BE20210500

Name of the group: Management a ekonomika ve stavebnictví, 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 7 courses

Credits in the group: 30

Note on the group.

Note on the Q	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
122TSEK	Technology of Construction - E Mária Párová, Václav Pospíchal, Rostislav Šulc Rostislav Šulc Mária Párová (Gar.)	Z,ZK	6	4P+2C	Z	Р
126EKST	Economic Statistics Božena Kade ábková, Daniel Macek Božena Kade ábková Daniel Macek (Gar.)	Z,ZK	4	1P+2C	Z	Р
126OCS1	Construction Pricing 1  Iveta St elcová, Lucie Brožová, Stanislav Vitásek Lucie Brožová Lucie  Brožová (Gar.)	Z,ZK	5	2P+2C	Z	Р
126RSPR	Construction Project Management Zita Prost jovská, Jaroslava Tománková <b>Zita Prost jovská</b> Zita Prost jovská (Gar.)	Z,ZK	5	2P+2C	Z	Р
126SRPB	Facility Management and Operation Daniel Macek, Aleš Choutka Daniel Macek Daniel Macek (Gar.)	Z,ZK	4	1P+2C	Z	Р
126SLEG	Building Legislation Dana M š anová Dana M š anová (Gar.)	Z	2	2P	Z	Р
135ZSE	Foundations E Josef Jettmar Jan Pruška Jan Kos (Gar.)	Z,ZK	4	2P+2C	Z	Р

### Characteristics of the courses of this group of Study Plan: Code=BE20210500 Name=Management a ekonomika ve stavebnictví, 5.

Semesu			
122TSEK	Technology of Construction - E	Z,ZK	6
Earthwork, design of pit	excavation and supporting's technologies. Design of formwork. Concrete mixer plant, concrete conveying, concreting. Brickw	vork's technologie	s, Roofing work,
tin work.			
126EKST	Economic Statistics	Z,ZK	4
The content of the subje	ect is applied economic statistics. Familiarization with statistical theory and subsequent application to solved examples.		<u>'</u>
126OCS1	Construction Pricing 1	Z,ZK	5

Costs are operation-related consumption of work and resources, valued and expressed in monetary units. The aim of the course is to teach the student to use basic calculation techniques and procedures. Furthermore, use the normative and data base, and adapt the normative base for new materials and technologies, or creating. Basic principles of cost calculation in the construction industry. Organization and standardization of work in the company, production process, time consumption. Standardization of labor consumption, methods of setting standards, examples, documents, Standardization of material consumption, examples, documents, Standardization of the need for machines - productivity, capacity standards, examples, documents. Salary costs - payroll system, job catalog, wage rate calculation. Costs - breakdown of costs, calculation methods and techniques, calculation bases. Dynamic and normative method of calculation, examples, documents. Individual costing - costing formula, content of components, examples, documents. Methods of non-absorption costing (ABC, method of variable costs), examples. Influencing the amount of material costs, wages, machine operation, overhead. Cost modeling, break-even analysis, examples. Managerial concept of costs.

**Construction Project Management** 

The subject provides a basic overview of project management. It defines the life cycle of a construction project. Content of individual phases of the project life cycle. Preparation and evaluation of the construction project.

126SRPB **Facility Management and Operation**  Z,ZK

The content of the subject is the management and control of the operation of buildings using the support of modern technologies. Familiarization with the issues of implementation and

operation of facility management using the CAFM system. The focus of the software support will be both on the passportization of basic property data and, in particular, on the planning, management and evaluation of the most frequently used facility management processes. 126SLFG 2

**Building Legislation** 

Territorial planning and construction code law. Public procurement law. Definition of terms. Commercial contractual relationships. Main contract types in construction - contract of the conclusion of a future contract, purchase contract, contract for work, Contents of the contract.

Foundations E

Z,ZK

Úvod do p edm tu, literatura, zásady navrhování, geotechnické kategorie Pevnostní a deforma ní charakteristiky základové p dy, plošné základy Mezní stavy plošných základ výpo et únosnosti a sedání plošných základ Hlubinné základy - typologie, pilotové základy, technologie vrtaných a ražených pilot Osová únosnost osam lých pilot, zat žovací zkoušky pilot Stanovení únosnosti pín zatížených pilot, skupina pilot Mikropiloty, kotvy, technologie Injektáž klasická a trysková, podzemní st ny Stavební jámy, technologie pažení stavebních jam Zásady pro návrh a posouzení pažicích konstrukcí, zemní tlak, ú inek vody Výpo et pažicích konstrukcí, metody závislých tlak Odvod ování stavebních jam Ochrana základových konstrukcí p ed ú inky agresivního prost edí

Code of the group: BE20230600

Name of the group: Management a ekonomika ve stavebnictví, 6. semestr

Concrete and Masonry Structures E

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 7 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
124KKT	Completing Constructions Šárka Šilarová	Z,ZK	6	2P+3C	L	Р
126IMAB	Building Information Management (BIM)  Josef Zák	Z,ZK	5	1P+3C	L	Р
126OCS2	Construction Pricing 2 Renáta Schneiderová Heralová, Iveta St elcová, Lucie Brožová, Stanislav Vitásek Lucie Brožová Renáta Schneiderová Heralová (Gar.)	Z,ZK	7	2P+4C	L	Р
126PJMS	Marketing in construction - project  Eduard Hromada	KZ	3	2C	L	Р
126SWPX	Software for Business Practice Petr Dlask	Z	2	2C	L	Р
126VEIN	Public Investment Construction  Zita Prost jovská	Z,ZK	3	2P+1C	L	Р

#### Characteristics of the courses of this group of Study Plan: Code=BE20230600 Name=Management a ekonomika ve stavebnictví, 6. semestr

Z,ZK

124KKT Completing Constructions Construction principles of the design of roof coverings for flat, sloping and steep roofs. The design of roof coverings in terms of requirements: building physical, waterproofing, operational, static, fire, acoustic, biological, chemical, lifetime and recycling. Principles of design of additional elements and details of roof coverings of flat, sloping and steep roofs based on the stated requirements and given boundary conditions. Designing and the ability to select suitable assembly structures based on the theories of design principles and the principles of

solving individual groups of elements from the area of assembly structures. This involves the creation of insulation systems, windows and doors, internal dividing walls, floors and floor

structures and their details

133BZE

126IMAB **Building Information Management (BIM)** 

Michaela Frantová

Z,ZK

2P+2C

The subject deals with the issue of Building Information Modeling (BIM) as a modern tool for the design, construction and operation of construction projects. It focuses on advanced applications of information technology in construction and design companies. Software tools that are used for quality control, measurement, preparation of measurement statements, simulation of construction progress, robotics in land and transport constructions and cybercrime, its risks and measures in construction projects. Part of the content of the subject is information on the contractual provision of digitization on construction projects.

126OCS2 | Construction Pricing 2 | Z,ZK | 7
Price and its importance, price factors, price strategies, types of contract, estimating at different stages of project, price setting data. Price creation - oriented to costs, demand and competition, method of price creation. Methods of creating the bid price. Labor and equipment rates per hour. IT support for estimating. Engineering and design activities pricing.

126PJMS Marketing in construction - project

ΚZ

vities pricing.

The course introduces students to basic concepts and techniques in the field of marketing, the links between marketing and other activities in the construction company, its role in the construction company and in society. Students should learn to find market opportunities, segment the market, evaluate market opportunities, build a simple marketing mix, i.e. know and master promotion methods, master pricing principles, correctly define the product and determine distribution channels.

126SWPX Software for Business Practice

Ζ

Modern construction practice requires the application of various supporting tools and methods. The course is focused on acquire practical skills in user control not only of office applications (especially MS Excel). The aim is to improve their existing skills and acquire new ones to save time at work. The main goal is to focus on such skills that are applicable in

126VEIN Public Investment Construction

Z.ZK

3

Public sector investment project. Evaluation of revenues and costs, income and expenses in individual phases of the life cycle of the construction project. Risk and uncertainty in investment decision-making.

133BZE Concrete and Masonry Structures E

Z,ZK

4

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 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 acquired in lectures to a specific project that students also work with in other courses as part of their studies.

Code of the group: BE20230700

Name of the group: Management a ekonomika ve stavebnictví, 7. semestr

continuing subjects and practice. It includes the verification of knowledge when creating examples in the exercise.

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 8 courses

Credits in the group: 30

Note on the group	γ.					
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
124PE1	Structural design project E Lenka Hanzalová, Malila Noori, Šárka Šilarová, B la Stib rková <b>Ji í Pazderka</b> Ji í Pazderka (Gar.)	KZ	4	4C	Z	Р
125TBUE	Building Services Systems E Ilona Koubková, Karel Kabele, Zuzana Veverková Daniel Adamovský Ilona Koubková (Gar.)	Z,ZK	5	2P+2C	Z	Р
126DUCE	Tax System and Accounting Jana Frková, Olga Heralová Olga Heralová Jana Frková (Gar.)	Z,ZK	4	2P+1C	L	Р
126PJOC	Construction Pricing Project Iveta St elcová, Dana ápová Iveta St elcová Iveta St elcová (Gar.)	KZ	4	4C	L	Р
126PRS	Construction Planning and Management Lucie Brožová, Jaroslava Tománková Lucie Brožová Petr Dlask (Gar.)	Z,ZK	5	2P+3C	L	Р
126RPRO	Construction Process Management Michal Vondruška Michal Vondruška (Gar.)	Z,ZK	3	1P+1C	Z	Р
134ODKM	Steel and Timber Structures Anna Kuklíková, Marta Ku íková Marta Ku íková Anna Kuklíková (Gar.)	Z,ZK	5	2P+2C	Z,L	Р
100ODPR	Industrial Training (3 weeks) Petr Hájek, Jan R ži ka, 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=BE20230700 Name=Management a ekonomika ve stavebnictví, 7. semestr

124PE1 | Structural design project E

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

Elaboration of detailed drawings including floor plans, sections and details.

125TBUE Building Services Systems E

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

126DUCE Tax System and Accounting Z,ZK 4

The subject is divided into lectures 1 hour per week and exercises 1 hour per week. Lectures take place according to the course outline listed below. In the exercise, students prepare their own business plan for a selected business activity according to the specified syllabus. Firstly students will work in team with intention to understand connections among tax, expenditure policy and will suggest tax adjustments to reduce deficit. The will learn how to prepare Income tax return, Social security and Health Insurance return. Students will train how to read and evaluate Financial Statements and compute VAT.

126PJOC Construction Pricing Project

ΚZ

4

The aim of this course is to introduce students to the budgeting and cost planning of building structures and construction works. Students will carry out their own projects and draw up three budget plans using the software KROS. The main task of students will be to create a bill of quantities according to the regulation 169/2016 and to correctly use the URS CZ database. The students will use the project documentation of real building structures (the estimate budget should be more than 15 million).

126PRS Construction Planning and Management

Z,ZK

5

Construction project management, project life cycle, engineering, design phase, methods of time scheduling, cost management, procurement systems and contracts, contractor management. Safety, quality and environmental management.

126RPRO | Construction Process Management | Z,ZK | 3 |
The course will focus on managerial and technical-economic planning during the basic technological processes of construction. The main focus will be on managerial skills in the management and control of building capacities and mechanization from the point of view of the contractor. Students will be acquainted with the principles of practical cost calculation of individual technological processes of construction. Teaching topics will be explained in case studies.

1340DKM | Steel and Timber Structures | Z,ZK | 5 |
Steel structures - pros and contras, material properties, fabrication, connections, industrial steel buildings, cables, high strength steel, buildings in terms of water engineering - load,

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.

protection, utilization. Timber - loadings, material propertie, limit states methodology, design, connections, bracings, protection of structural timber, timber bridges.

Code of the group: BE20240800

Name of the group: Management a ekonomika ve stavebnictví, 8. semestr

Requirement credits in the group: In this group you have to gain at least 14 credits

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

Credits in the group: 14 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
126FINK	Financing, Investing, Contracts	Z,ZK	5	2P+2C	L	Р
126OINS	Pricing of Civil Engineering Works  Iveta St elcová	Z,ZK	4	2P+2C	L	Р
126PJRS	Construction Preparation and Management Project  Lucie Brožová	KZ	5	4C	L	Р

## Characteristics of the courses of this group of Study Plan: Code=BE20240800 Name=Management a ekonomika ve stavebnictví, 8. semestr

126FINK | Financing, Investing, Contracts | Z,ZK | 5 An introductory course in financial management with a specific focus on the construction industry. Emphasis is placed on financing and accounting methods at the company, division, and project levels. The course explains the interconnection between financial management and the execution of construction projects within the broader framework of construction contracts (with emphasis on standard contracts) and elements of project management. The content includes the application of accounting concepts in the financial management of construction firms, investment strategies, methods of investment planning and evaluation, management of investments in machinery and equipment, investment centers, and the role of contractual relations and contracting systems. The course also provides a detailed explanation of the FIDIC Red Book, along with a comparison to the FIDIC DesignBuild and EPC/Turnkey Silver Book.

126OINS Pricing of Civil Engineering Works Z,ZK 4
Cost database of transportation structures I normative prices, aggregated items Cost database of transportation structures II OTSKP catalogue Schedule of works and bill of quantities

requirements and sources Cost estimation of transportation structures basic principles, techniques Financing of transportation structures EU, SFDI, PPP projects Cost analysis of transportation structures real projects and cost categories Engineering constructions from the perspective of contracting authority legal norms and another legislature Engineering constructions from the perspective of contractor managing of a contract within the construction company Life cycle costs of engineering constructions Economic efficiency of transportation structures Introduction to estimating software for transportation structures Building information modelling (BIM) and estimating requirements, schedule of works International methods of planning, estimating and predicting transportation structure costs

126PJRS Construction Preparation and Management Project KZ 5
Complex project of construction preparation, planning, technical preparation and simulation of building execution on the basis of individual assignment for each student.

Code of the group: BE20210800\_2

Name of the group: Management a ekonomika ve stavebnictví, 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
126BAPE	Bachelor Thesis Jan Pruška Jan Pruška (Gar.)	Z	12	10C	L,Z	P

# Characteristics of the courses of this group of Study Plan: Code=BE20210800\_2 Name=Management a ekonomika ve stavebnictví, bakalá ská práce

126BAPE Bachelor Thesis Z 12

The bachelor thesis finishes the bachelor study. A student proves that he/she is able to apply the knowledge acquired in the study on the real project. The bachelor thesis connects to the chosen subjects of the study curricula. The partial results are further evaluated and appropriate conclusions are drawn. Min. 4 continuous consultations with the head of bachelor study, where the student submits bachelor study in progress. For students of branch E.

Name of the block: Povinná t lesná výchova, sportovní kurzy

Minimal number of credits of the block: 0

The role of the block: PT

Code of the group: BTV POV

Name of the group: Povinná t lesná výchova

Requirement credits in the group:

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

Credits in the group: 0 Note on the group:

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

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

TV1	Physical Education	Z	0
TV2	Physical Education	Z	0

Name of the block: Compulsory elective courses

Minimal number of credits of the block: 4

The role of the block: S

Code of the group: BE20210800\_1

Name of the group: Management a ekonomika ve stavebnictví, PV p edm ty Requirement credits in the group: In this group you have to gain at least 4 credits

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

Credits in the group: 4 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
126YIPD	Small Business Olga Heralová	Z,ZK	4	2P+2C	L	S
126YSWO	Construction Estimation Software  Lucie Brožová	Z,ZK	4	2P+2C	L	S
126YTRO	Decision theory Eduard Hromada	Z,ZK	2	1P+1C	L	S
126ZIPN	Basics of innovative business  Dana M š anová	Z,ZK	2	1P+1C	L	S
126YPER	Human resource management Eduard Hromada, Olga Heralová Michal Vondruška Michal Vondruška (Gar.)	Z,ZK	2	1P+1C	L	S
126MCC	Management in Construction Company	Z,ZK	5	2P+2C	L	S

# Characteristics of the courses of this group of Study Plan: Code=BE20210800\_1 Name=Management a ekonomika ve stavebnictví, PV p edm ty

126YIPD	Small Business	Z,ZK	4			
126YSWO	Construction Estimation Software	Z,ZK	4			
The teaching is foc	he teaching is focused on familiarization with cost calculation SW for item preparation					
126YTRO	Decision theory	Z,ZK	2			
126ZIPN	Basics of innovative business	Z,ZK	2			
126YPER	Human resource management	Z,ZK	2			
Main intention is to make students familiar with practical HR management in construction company with focus on hiring, adaptation, motivation, leadership and remuneration. Within						
classes theory is co	classes theory is combined with trainings (model situations)					

126MCC Management in Construction Company

Z,ZK

5

Construction business and the best practice at the corporate level. Course is oriented toward the practical application of corporate construction management systems, combining theoretical frameworks with real-practice industry experience. Students engage in case studies and participate in the Building Industry Game, an online business simulation developed by California Polytechnic State University, where they act as contractors managing companies and competing for projects in a dynamic market. The course begins by examining the nature of the construction business, identifying internal and external factors that influence company success or failure. It then explores the primary causes of business failure and presents strategic approaches to minimize risks and enhance long-term resilience. Attention is given to business development, marketing, and bidding strategies that drive sustainable growth. Students learn to apply planning and control techniques and to evaluate different project delivery methods in terms of efficiency, cost, and risk. Core modules address financial management and budgeting, with a focus on profitability, liquidity, and investment decisions. Construction risk management principles are integrated throughout, encouraging proactive identification and mitigation of threats at both the project and corporate levels. The course also emphasizes leadership challenges, organizational behavior, and ethics, preparing students for responsible and effective management. In the final sessions, students assess company performance indicators and synthesize the knowledge gained to design and manage a profitable, ethical, and sustainable construction business.

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:

	3 P.					
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, Alexandra Steinerová, Jarmila Fu íková, Lucie Simerová Svatava Boboková Bartíková Sandra Giormani (Gar.)	Z	1	2C	Z,L	J
104YCN1	German 1 Svatava Boboková Bartíková Svatava Boboková Bartíková Svatava Boboková Bartíková (Gar.)	Z	1	2C	Z,L	J

### Characteristics of the courses of this group of Study Plan: Code=BF20190101\_I Name=Povinn volitelný jazyk, 1. semestr

104YCA1 | English 1 | Z | 1 | English 1 | Course code: 104Y CA1 Scope: 0 + 2 (practical sessions) Number of credits: 1 Final assessment: credit The aim of the compulsory English course is to enhance the knowledge of lexis and grammar within the scope of the chosen field of study and university studies in general (Academic English); the overall focus is on professional language (i.e., ESP - technical style) and communicative competence within the construction industry. The course also seeks to teach students to read technical literature and to be able to produce essential written discourse and to express themselves in writing on issues in their field of study. The end of course requirements are a credit. Literature: Horká Hana, Giormani Sandra, Martincová

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

Petra, Nivenová Renata: Professional English for Civil Engineering (Units 1 - 5)

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, Alexandra Steinerová, Jarmila Fu íková, 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	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
100ODPR	Industrial Training (3 weeks)	Z	0
Professional pr	actice is an important part of academic education in undergraduate degree programmes. The student will gain a basic understanding	of duties and prof	essional
respor	nsibilities. The professional practice evaluates the sum of all knowledge acquired through previous theoretical studies and is a proof of	f their acquisition.	
101KG01	Constructive Geometry	Z,ZK	5
Projections and p	rojective methods. Axonometry. Oblique projection. Orthogonal axonometry. Displaying prisms, cones, cylinders, pyramids, balls. Sim	ple problems in ax	conometry.
Basics of lighting	of solids and groupes of solids. Perspective projection. Curves, parametrisation. Frenet's trihedron, torsion and curvature. Helical su	faces. Quadrics. S	urfaces in
	building industry.		
101MA01	Mathematics 1	Z,ZK	6
	https://mat.fsv.cvut.cz/bubenik/mat1detail.htm		•
101MA02	Mathematics 2	Z,ZK	6
	https://mat.fsv.cvut.cz/vyuka/bakalari/eng/ls/MT02/		•
101MA03	Mathematics 3	Z,ZK	6
	https://mat.fsv.cvut.cz/vyuka/bakalari/eng/zs/		
102FYI	Physics	Z,ZK	4
This is a basic ph	nysics course for students of the study programmes Civil Engineering; Management and Economics in Construction. The course focu	ses on mechanics	and basic
thermodynamics. T	he following areas are covered in the course: Mechanics of material points (particles) and deformable bodies. Discrete and continuou	us model of matter	. Kinematics
and dynamics	of a material point (particle). Mechanical force fields. Gravitational field. Mechanical vibrations. Material deformation. Elastic waves. An	coustics. Hydrome	chanics.
	Fundamentals of thermodynamics. Heat transfer.		
104YC2A	English 2	Z,ZK	2
	code: 104YC2A Scope: 0 + 2 (practical sessions) Number of credits: 1 Final assessment: credit and exam The aim of the compulsory		
the knowledge of	lexis and grammar within the scope of the chosen field of study and university studies in general (Academic English); the overall focu	s is on professiona	ıl language
	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		. Literature:
	Horká Hana, Giormani Sandra, Martincová Petra, Nivenová Renata : Professional English for Civil Engineering (Units 6 10		т
104YC2N	German 2	Z,ZK	2
	urse - German Language for Civil Engineering is aimed at practising professional vocabulary within the scope of the construction indus	-	-
texts, and learning	the necessary presentation skills in order to present all relevant professional issues. The end-of-course requirement is a credit. Liter	ature: A.Hanáková	, J.Dressel:
	Deutsch im Bauwesen		
104YCA1	English 1	Z	1
•	ode: 104Y CA1 Scope: 0 + 2 (practical sessions) Number of credits: 1 Final assessment: credit The aim of the compulsory English cours		ū
	mmar within the scope of the chosen field of study and university studies in general (Academic English); the overall focus is on profes		
	I communicative competence within the construction industry. The course also seeks to teach students to read technical literature and nd to express themselves in writing on issues in their field of study. The end of course requirements are a credit. Literature: Horká Hana		
writterruiscourse a	Petra, Nivenová Renata : Professional English for Civil Engineering (Units 1 - 5)	, Giorniani Sanura,	, iviai ili icova
104YCN1	German 1	Z	1
	urse - German Language for Civil Engineering is aimed at practising professional vocabulary within the scope of the construction indus	_	nrofessiona
	the necessary presentation skills in order to present all relevant professional issues. The end-of-course requirement is a credit. Liter		
texts, and learning	Deutsch im Bauwesen	ature. Atriananova	, 0.0103361.
122TSEK	Technology of Construction - E	Z,ZK	6
	of pit excavation and supporting's technologies. Design of formwork. Concrete mixer plant, concrete conveying, concreting. Brickwork	'	_
Laitiwork, design	tin work.	3 technologies, 10	Joining Work
123CHE	Chemistry	Z,ZK	4
	neral chemistry - chemical bond, compounds, reactions, equilibrium. Chemistry of environment - water, atmosphere, pedosphere. Ch		1
_	glass, ceramic, metals, natural polymers, wood, synthetic polymers on C and Si basis. Introduction to degradation of building materia		
123SH01	Building Materials	Z,ZK	5
	building Waterials  - basis course. Clasification of the materials. Structure of materials. Main properties of materials. Application of materials in building	,	_
_anang materials	material testing.	55.10ti 40ti0115. IIIII	2240401110
124KKT	Completing Constructions	Z,ZK	6
	ples of the design of roof coverings for flat, sloping and steep roofs. The design of roof coverings in terms of requirements: building physi		1
	ic, biological, chemical, lifetime and recycling. Principles of design of additional elements and details of roof coverings of flat, sloping	· -	-
	nts and given boundary conditions. Designing and the ability to select suitable assembly structures based on the theories of design p	•	
•	roups of elements from the area of assembly structures. This involves the creation of insulation systems, windows and doors, internal		-
J	attrictures and their details		

structures and their details.

124PE1	Structural design project E	KZ	4
•	itectural study of a smaller or medium-sized building for housing, administration, education, culture or sports into a detailed design of raction of load-bearing and non-load-bearing elements and building physics. Focus on complex approach to practical design, analysis a	•	
=	of variants of the load-bearing system, preliminary static analysis (calculation of load-bearing elements - slabs, columns, walls, etc), calc	•	- 1
of structures on	the building envelope with respect to thermal protection of buildings, building physics, fire protection of buildings and protection again	nst water and soil m	noisture.
10.10011	Elaboration of detailed drawings including floor plans, sections and details.		
124PSI1	Building Structures 1I sign of building structures with a comprehensive consideration of the functional requirements imposed on individual elements. Require	Z	4 structures
•	interaction of elements, spatial effect of the structural system. Vertical load-bearing structures (functions, requirements, principles of the structural system).	_	
-	ctures (functions, requirements, principles of the structural design of vaults, wooden ceilings, reinforced concrete ceilings, ceramic con	-	- 1
	e ceilings). Expansion joints in load-bearing systems. Structural systems of single and multi-storey buildings, structural systems of lon		
124PSI2	Building Structures 2I ramps, lift shafts - requirements, structural and material solutions, basics of typology, design principles, construction details, railing. Bu	Z,ZK	4 foundation
	foundations, requirements, building plinth area (construction details). Basement - solution of basement walls, requirements, protection	-	
	l expansion joints in buildings - principles of joints design in bearing structures, thermal expansion, compensation of differences in se Roof truss systems.	_	1
125TBUE	Building Services Systems E	Z,ZK	5
	Basic course in building services systems - water supply, drainage, gas supply , heating and ventilation systems.	<u> </u>	
126BAPE	Bachelor Thesis	Z	12
	s finishes the bachelor study. A student proves that he/she is able to apply the knowledge acquired in the study on the real project. Th ts of the study curricula. The partial results are further evaluated and appropriate conclusions are drawn. Min. 4 continuous consultation		I
the chosen subject	study, where the student submits bachelor study in progress. For students of branch E.	Jiis with the nead t	Ji bacileloi
126BIM1	BIM	Z	1
The course focuse	es on teaching basic knowledge in the field of Building Information Management (BIM) in theoretical and practical areas, applicable ac	· · · · · · · · · · · · · · · · · · ·	
•	ne construction industry. Students will be introduced to data formats, data standards, intellectual property issues, working with digitized		
• • • •	a sources in the Czech Republic, ICT and enterprise systems, information systems for the construction industry, but also the context of I to the entire project life cycle and its specifics (delivery, expert focus, phases of construction projects, etc.) The theoretical knowledge		
,	exercises aimed at mastering and understanding the basic principles of object-oriented parametric modelling.		., [
126DOMT	Development, property valuation and real estate market	Z,ZK	5
	es basic knowledge about the functioning of the commercial and residential real estate market, supplemented by examples from practice		- 1
	rocess and its individual phases from acquisition, through planning, own construction and exit - practical examples. Compilation of the options for development projects and existing investment properties, different aspects of individual types of investors in real estate proj		
	ption of the considered development in the specified area, including a layout design, market analysis, financing proposal, budget and p	•	
	project (in the form of consultations during the entire semester)		·
126DUCE	Tax System and Accounting	Z,ZK	4
-	led into lectures 1 hour per week and exercises 1 hour per week. Lectures take place according to the course outline listed below. In t ss plan for a selected business activity according to the specified syllabus. Firstly students will work in team with intention to understa		
	and will suggest tax adjustments to reduce deficit. The will learn how to prepare Income tax return, Social security and Health Insura		
	how to read and evaluate Financial Statements and compute VAT.		
126EKMN	Economics and Management	Z,ZK	7
	urse is to provide students with an introduction to economics and management in the construction industry and to familiarize them wit plications. Students will be prepared to solve basic construction-management problems in the construction industry. They will acquire		
	construction works and master the basic methods of managing a construction company. Emphasis is placed on understanding the principles.		
	relation to the construction industry.		_
126EKST	Economic Statistics	Z,ZK	4
400FINIZ	The content of the subject is applied economic statistics. Familiarization with statistical theory and subsequent application to solved		
126FINK	Financing, Investing, Contracts  urse in financial management with a specific focus on the construction industry. Emphasis is placed on financing and accounting meth	Z,ZK	5 ny division
-	s. The course explains the interconnection between financial management and the execution of construction projects within the broads		-
contracts (with em	nphasis on standard contracts) and elements of project management. The content includes the application of accounting concepts in	the financial manag	gement of
	investment strategies, methods of investment planning and evaluation, management of investments in machinery and equipment, inv		
or contractual re	lations and contracting systems. The course also provides a detailed explanation of the FIDIC Red Book, along with a comparison to EPC/Turnkey Silver Book.	the Fibic besigne	Juliu ariu
126IMAB	Building Information Management (BIM)	Z,ZK	5
The subject deals	with the issue of Building Information Modeling (BIM) as a modern tool for the design, construction and operation of construction proj		advanced
	rmation technology in construction and design companies. Software tools that are used for quality control, measurement, preparation		
simulation of cons	struction progress, robotics in land and transport constructions and cybercrime, its risks and measures in construction projects. Part o information on the contractual provision of digitization on construction projects.	r the content of the	subject is
126MCC	Management in Construction Company	Z,ZK	5
	siness and the best practice at the corporate level. Course is oriented toward the practical application of corporate construction manage	,	
	orks with real-practice industry experience. Students engage in case studies and participate in the Building Industry Game, an online by		
	technic State University, where they act as contractors managing companies and competing for projects in a dynamic market. The cou Instruction business, identifying internal and external factors that influence company success or failure. It then explores the primary cau		- 1
	approaches to minimize risks and enhance long-term resilience. Attention is given to business development, marketing, and bidding st		
-	arn to apply planning and control techniques and to evaluate different project delivery methods in terms of efficiency, cost, and risk. Co		
=	oudgeting, with a focus on profitability, liquidity, and investment decisions. Construction risk management principles are integrated throu I mitigation of threats at both the project and corporate levels. The course also emphasizes leadership challenges, organizational beh	-	
	sible and effective management. In the final sessions, students assess company performance indicators and synthesize the knowledge		
	a profitable, ethical, and sustainable construction business.		
126OCS1	Construction Pricing 1	Z,ZK	5
· ·	n-related consumption of work and resources, valued and expressed in monetary units. The aim of the course is to teach the student to us		
· ·	urthermore, use the normative and data base, and adapt the normative base for new materials and technologies, or creating. Basic p dustry. Organization and standardization of work in the company, production process, time consumption. Standardization of labor con	-	
		. ,	5

standards, examples, documents. Standardization of material consumption, examples, documents. Standardization of the need for machines - productivity, capacity standards, examples, documents. Salary costs - payroll system, job catalog, wage rate calculation. Costs - breakdown of costs, calculation methods and techniques, calculation bases. Dynamic and normative method of calculation, examples, documents. Individual costing - costing formula, content of components, examples, documents. Methods of non-absorption costing (ABC, method of variable costs), examples. Influencing the amount of material costs, wages, machine operation, overhead. Cost modeling, break-even analysis, examples. Managerial concept of costs. 126OCS2 Construction Pricing 2 Z,ZK Price and its importance, price factors, price strategies, types of contract, estimating at different stages of project, price setting data. Price creation - oriented to costs, demand and competition, method of price creation. Methods of creating the bid price. Labor and equipment rates per hour. IT support for estimating. Engineering and design activities pricing. Pricing of Civil Engineering Works Cost database of transportation structures I normative prices, aggregated items Cost database of transportation structures II OTSKP catalogue Schedule of works and bill of quantities requirements and sources Cost estimation of transportation structures basic principles, techniques Financing of transportation structures EU, SFDI, PPP projects Cost analysis of transportation structures real projects and cost categories Engineering constructions from the perspective of contracting authority legal norms and another legislature Engineering constructions from the perspective of contractor managing of a contract within the construction company Life cycle costs of engineering constructions Economic efficiency of transportation structures Introduction to estimating software for transportation structures Building information modelling (BIM) and estimating requirements, schedule of works International methods of planning, estimating and predicting transportation structure costs 126PJMS Marketing in construction - project The course introduces students to basic concepts and techniques in the field of marketing, the links between marketing and other activities in the construction company, its role in the construction company and in society. Students should learn to find market opportunities, segment the market, evaluate market opportunities, build a simple marketing mix, i.e. know and master promotion methods, master pricing principles, correctly define the product and determine distribution channels Construction Pricing Project 126PJOC The aim of this course is to introduce students to the budgeting and cost planning of building structures and construction works. Students will carry out their own projects and draw up three budget plans using the software KROS. The main task of students will be to create a bill of quantities according to the regulation 169/2016 and to correctly use the URS CZ database. The students will use the project documentation of real building structures (the estimate budget should be more than 15 million). 126PJRS Construction Preparation and Management Project ΚZ Complex project of construction preparation, planning, technical preparation and simulation of building execution on the basis of individual assignment for each student. 126PRS Construction Planning and Management Z.ZK 5 Construction project management, project life cycle, engineering, design phase, methods of time scheduling, cost management, procurement systems and contracts, contractor management. Safety, quality and environmental management. 126RPRO Construction Process Management Z,ZK 3 The course will focus on managerial and technical-economic planning during the basic technological processes of construction. The main focus will be on managerial skills in the management and control of building capacities and mechanization from the point of view of the contractor. Students will be acquainted with the principles of practical cost calculation of individual technological processes of construction. Teaching topics will be explained in case studies. Construction Project Management Z,ZK The subject provides a basic overview of project management. It defines the life cycle of a construction project. Content of individual phases of the project life cycle. Preparation and evaluation of the construction project. 126SLEG **Building Legislation** Ζ 2 Territorial planning and construction code law. Public procurement law. Definition of terms. Commercial contractual relationships. Main contract types in construction - contract of the conclusion of a future contract, purchase contract, contract for work, Contents of the contract. Facility Management and Operation The content of the subject is the management and control of the operation of buildings using the support of modern technologies. Familiarization with the issues of implementation and operation of facility management using the CAFM system. The focus of the software support will be both on the passportization of basic property data and, in particular, on the planning, management and evaluation of the most frequently used facility management processes. Software for Business Practice Modern construction practice requires the application of various supporting tools and methods. The course is focused on acquire practical skills in user control not only of office applications (especially MS Excel). The aim is to improve their existing skills and acquire new ones to save time at work. The main goal is to focus on such skills that are applicable in continuing subjects and practice. It includes the verification of knowledge when creating examples in the exercise. 126VEIN **Public Investment Construction** Z.ZK 3 Public sector investment project. Evaluation of revenues and costs, income and expenses in individual phases of the life cycle of the construction project. Risk and uncertainty in investment decision-making. 126YIPD **Small Business** Z,ZK 4 126YPFR Human resource management Z,ZK 2 Main intention is to make students familiar with practical HR management in construction company with focus on hiring, adaptation, motivation, leadership and remuneration. Within classes theory is combined with trainings (model situations). 126YSWO Construction Estimation Software Z,ZK 4 The teaching is focused on familiarization with cost calculation SW for item preparation 126YTRO Decision theory Z,ZK 2 126ZIPN Z.ZK Basics of innovative business 2 132PRPE 6 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. 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. Reaction forces applying the principle of virtual work. 132SM02 Structural Mechanics 2 Internal forces diagrams of simple statically determinate plane structures and compound two-dimensional structures. Multiaxially loaded cantilever. Definition of normal stress and prepositions of its distribution in a cross section. Equivalence of internal forces. Geometry of mass and areas, centre of gravity and moments of inertia. 132SM3 Structural Mechanics 3 5 Deformation and force method for the solution of reactions and internal forces on statically indeterminate beams, frames, and truss structures. Calculation of displacements of beams, frames, and truss structures using the principle of virtual works.

133BZE	Concrete and Masonry Structures E	Z,ZK	4
The course lectures	is focused on the design of one-way and two-way slabs, staircases, reinforcing walls, foundations, precast structures, halls and pre-	stressed concrete.	The course
also covers mason	ry construction and an introduction to the design of civil engineering structures and bridges. The content of the practicum is the appl	ication of the know	ledge and
	skills acquired in lectures to a specific project that students also work with in other courses as part of their studies.		
133NNKB	Fundamentals of Structural Design - Concrete	Z,ZK	4
The content of the	e subject are the basics of load-bearing concrete structures design and the design methodology according to valid standards, includi	ng the determination	on of load
effects. The prop	perties of concrete, the production and testing of concrete, the properties of concrete reinforcement and its interaction with concrete	are discussed. Des	sign and
reinforcement of co	increte structures for basic types of loading (bending, shear, pressure) are the main part of this course. An introduction to serviceabi	lity limit states is in	the end of
this course. The	e course follows the introductory subject of Civil Engineering program (Structural Mechanics, Elasticity and Strength, Building Mater	ials, Building Struct	tures).
134NNKO	Design of Supporting StructuresI - Steel	Z,ZK	3
The basics of design	ning steel, steel-concrete and wooden load-bearing structures according to applicable standards, including the determination of load	effects, design diffe	rences due
	to the specific properties of individual materials.		
134ODKM	Steel and Timber Structures	Z,ZK	5
Steel structures - p	ros and contras, material properties, fabrication, connections, industrial steel buildings, cables, high strength steel, buildings in term	s of water engineer	ring - load,
protection	, utilization. Timber - loadings, material propertie, limit states methodology, design, connections, bracings, protection of structural times.	ber, timber bridges	3.
135GM01	Geomechanics 1	Z	3
The course focuses	on the understanding of basic geological laws and principles in relation to architecture, civil engineering and urban planning. Empha	sis is placed on exp	plaining the
influence of geologic	cal processes, both endogenous and exogenous, on the rock environment and how the geological situation affects the design of struc	tures and their inte	raction with
the rock environme	nt. 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 intro	oduction to
	the regional geology of the Czech Republic.		
135GM2I	Geomechanics 2I	Z,ZK	5
	ls, basic properties of soils, water in soil, strength and deformation properties of soils and their determination, improvement of soil properties of soils are determination.	operties, application	on tasks
135ZSE	Foundations E	Z,ZK	4
•	u, literatura, zásady navrhování, geotechnické kategorie Pevnostní a deforma ní charakteristiky základové p dy, plošné základy Me		I
	sedání plošných základ Hlubinné základy - typologie, pilotové základy, technologie vrtaných a ražených pilot Osová únosnost osam		, ,
-	snosti pín zatížených pilot, skupina pilot Mikropiloty, kotvy, technologie Injektáž klasická a trysková, podzemní st. ny Stavební jámy,		
jam ∠asady pro navi	rh a posouzení pažicích konstrukcí, zemní tlak, ú inek vody Výpo et pažicích konstrukcí, metody závislých tlak Odvod ování stavebi	nich jam Ochrana z	akiadovych
40000117	konstrukcí p ed ú inky agresivního prost edí	7 71/	7
136DSUZ	Transport Structures and Urban Planning	Z,ZK	7
	IZ is composed of 3 issues, which build on each other and complement each other. These are the area of transport structures (roads an planning and spatial planning (scope 2+0). Unlike the road construction and railroad construction sections, the urban planning se	=	
	s - Roads (R): Introduction to basic terminology in the part of roads, history. Road Act and related legislative and technical regulation		
•	of roads and motorways, design speed, directional and elevation design of routes, cross-sectional layout of roads and motorways, ea	•	- 1
	roads, division and marking, definition of MK space, differences in design, operation and equipment. Carriageway, division, design pi		
=	ngs. Transport Structures - Rail transport (RT): Introduction to basic terminology, Issues of railway crossings from the point of view of		
-	tory, principles of tram track construction, interaction with the environment. Metro as a system of urban rail transport. Basic principles		· .
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 superstruct	ure. Spatial
	Planning (SP): Teaching spatial planning and urban planning, spatial planning tools and procedures for their acquisition.		
141HYA	Hydraulics	Z,ZK	5
A course deals with	issues of hydrostatics and hydrodynamics with aiming at civil engineering applications. There are analysed tasks related to hydrostatic	atic and hydrodynar	mic loading
	of structures, pipeline flow, open channel flow and groundwater flow.		
142VIZP	Water and Environmental Engineering	Z,ZK	4
During the teaching	semester, students are introduced to the fields of water engineering, water management and environmental engineering. In particu	lar, emphasis is pla	ced on the
practical aspects of	water and environmental engineering in close relation to other branches of civil engineering. The course is taught in the form of lectu	res and tutorials. T	he lectures
	atically into 20 blocks according to the different branches of the discipline (13 times water engineering and 7 times environmental en		I
students work on l	basic problems in the field of hydrology, water supply and water structures, especially dams, hydropower and flood issues. All 4 "wat	er" departments of	K14x are
	involved in teaching the course.		
_154SG01	Land Surveying in Civil Engineering	Z,ZK	6
	te of the Earth, substitutive surfaces, cartographic projections Horizontal and vertical control, coordinate calculations Quality control,		
	l distance measurements Heighting measurements Other geodetic methods in build-up (GNSS, DPZ,) Photogrammetry and laser	_	
and present state of	documentation Geodetic works in build-up State map series of CR and thematic maps for build-up Geographic information systems a	ınu spaliai pianning	y Cauastre

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 09:10.

TV1

TV2

Physical Education

Physical Education

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