

Study plan

Name of study plan: Stavební inženýrství, obor 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: Civil Engineering

Type of study: Bachelor full-time

Required credits: 240

Elective courses credits: 0

Sum of credits in the plan: 240

Note on the plan: tento studijní plán platí pro nástup 2017 (rozdělení NNK) a 2018

Name of the block: Compulsory courses

Minimal number of credits of the block: 219

The role of the block: Z

Code of the group: BJ20130100

Name of the group: Stavební inženýrství, povinné předměty, 1. 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 5 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
123CH01	Chemistry Milena Pavlíková	Z,ZK	5	3P+1C	Z,L	z
101KG01	Constructive Geometry Iva Kivková, Iva Malechová, Jana Šápová, Liya Gaynutdinova, Michal Zdražil, Iva Slámová, Hana Lakomá, Petra Vacková Jana Šápová Iva Kivková (Gar.)	Z,ZK	5	2P+2C	Z,L	z
101MA01	Mathematics 1 Iva Malechová, Jana Šápová, Iva Slámová, Petra Vacková, Zdeněk Skalák, Ivana Pultarová, Ondřej Zindulka, Jan Chlebooun, Miloš Vlasák, Aleš Nekvinda Aleš Nekvinda (Gar.)	Z,ZK	6	2P+3C	Z,L	z
105SVAR	Social Sciences and Architecture	Z,ZK	6	4P+1C	L,Z	z
132SM01	Structural Mechanics 1 Michal Polák, Martin Válek, Daniel Rypl, Matěj Lepš, Jan Sýkora, Tomáš Koudelka, Aleš Palík, Ondřej Faltus, Miroslav Šáp, Michal Polák Michal Polák (Gar.)	Z,ZK	6	2P+2C	Z,L	z

Characteristics of the courses of this group of Study Plan: Code=BJ20130100 Name=Stavební inženýrství, povinné předměty, 1. semestr

123CH01	Chemistry	Z,ZK	5
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.			
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 groups 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			
105SVAR	Social Sciences and Architecture	Z,ZK	6
Subject introduces the fundamental principles of several social sciences: Economics, Economic Policy, Political Science and Law with an overview of architectural development. Economic section offers an introduction to market economy, economic policy and international economy. Lectures and seminars dedicated to Political Science explain Theory of state, political systems, democracy and totalitarianism. Law section comprises brief overview of development of Roman law with interpretation of the Constitution, Labor Code and Civil Code.			
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.			

Code of the group: BJ20130200

Name of the group: Stavební inženýrství, povinné p edm ty, 2. semestr
Requirement credits in the group: In this group you have to gain 28 credits
Requirement courses in the group: In this group you have to complete at least 5 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
102FY01	Physics Pavel Demo	Z,ZK	5	3P+1C	Z,L	z
101MA02	Mathematics 2 Iva Křívková, Iva Malechová, Jana Šápová, Iva Slámová, Hana Lakomá, Zdeněk Skalák, Ivana Pultarová, Ondřej Zindulka, Miloslav Vlasák, Ivana Pultarová Ivana Pultarová (Gar.)	Z,ZK	6	2P+3C	L,Z	z
154SG01	Land Surveying in Civil Engineering Rudolf Urban, Martin Štroner Rudolf Urban Rudolf Urban (Gar.)	Z,ZK	6	2P+3C	Z,L	z
123SH01	Building Materials Eva Vejmelková, Alena Vimmrová, Miloš Jerman Alena Vimmrová Alena Vimmrová (Gar.)	Z,ZK	5	2P+2C	Z,L	z
132SM02	Structural Mechanics 2 Michal Polák, Martin Válek, Daniel Rypl, Matěj Lepš, Jan Sýkora, Tomáš Koudelka, Aleš Palík, Ondřej Faltus, Miroslav Šáp, Matěj Lepš Michal Polák (Gar.)	Z,ZK	6	2P+2C	L,Z	z

Characteristics of the courses of this group of Study Plan: Code=BJ20130200 Name=Stavební inženýrství, povinné p edm ty, 2. semestr

102FY01	Physics	Z,ZK	5
Mass, structure of matter. Motion of matter, kinematics, dynamics. Force field. Deformations and leak. Oscillations, elastic waves, acoustics. Heat properties of matter.			
101MA02	Mathematics 2	Z,ZK	6
https://mat.fsv.cvut.cz/vyuka/bakalari/eng/ls/MT02/			
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			
123SH01	Building Materials	Z,ZK	5
Building materials - basis course. Classification of the materials. Structure of materials. Main properties of materials. Application of materials in building constructions. Introduction to material testing.			
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.			

Code of the group: BJ20130300

Name of the group: Stavební inženýrství, povinné p edm ty, 3. semestr
Requirement credits in the group: In this group you have to gain 30 credits
Requirement courses in the group: In this group you have to complete at least 5 courses
Credits in the group: 30
Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
136DSUP	Transport Structures and Urban Planning Ludvík Vébr	Z,ZK	6	5P+1C	L,Z	z
126EKMN	Economics and Management Martin Šásenský, Božena Kadeřáková, Petr Kal ev, Eduard Hromada, Pavlína Píchová, Pavlína Píchová Eduard Hromada Petr Kal ev (Gar.)	Z,ZK	7	4P+2C		z
141HYA	Hydraulics Aleš Havlík, Tomáš Pícek, Václav Matoušek, Petr Sklená, Martin Fencel, Anna Špačková, Jakub Novotný, Vojtěch Bareš, Jan Krupík Václav Matoušek Václav Matoušek (Gar.)	Z,ZK	5	2P+2C	Z,L	z
101MA03	Mathematics 3 Iva Malechová, Zdeněk Skalák, Ivana Pultarová, Ondřej Zindulka, Miloslav Vlasák, Michal Beneš, Martin Hála, Martin Soukenka, Petr Mayer, Michal Beneš Michal Beneš (Gar.)	Z,ZK	6	3P+2C	Z,L	z
132PRPE	Strength of Materials Tomáš Koudelka, Zdeněk Prošek, Milan Jirásek, Michal Šejnoha, Petr Kabele, Jan Vorel, Eva Novotná, Michal Šmejkal, Martin Doškál, Milan Jirásek Petr Kabele (Gar.)	Z,ZK	6	3P+2C	Z,L	z

Characteristics of the courses of this group of Study Plan: Code=BJ20130300 Name=Stavební inženýrství, povinné p edm ty, 3. semestr

136DSUP	Transport Structures and Urban Planning	Z,ZK	6
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126EKMN	Economics and Management	Z,ZK	7
The aim of the course is to provide students with an introduction to economics and management in the construction industry and to familiarize them with basic economic terms and their practical applications. Students will be prepared to solve basic construction-management problems in the construction industry. They will acquire basic information about the 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.			
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 and hydrodynamic loading of structures, pipeline flow, open channel flow and groundwater flow.			
101MA03	Mathematics 3	Z,ZK	6
https://mat.fsv.cvut.cz/vyuka/bakalari/eng/zs/			
132PRPE	Strength of Materials	Z,ZK	6
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.			

Code of the group: BJ20170400

Name of the group: Stavební inženýrství, povinné p edm ty, 4. semestr

Requirement credits in the group: In this group you have to gain 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: rozdělení 133NNK

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) <i>Tutors, authors and guarantors (gar.)</i>	Completion	Credits	Scope	Semester	Role
124PS01	Building Structures 1 <i>Petr Hájek</i>	Z,ZK	7	4P+2C	Z,L	z
132SM3	Structural Mechanics 3 <i>Tomáš Koudelka, Milan Jirásek, Michal Šejnoha, Petr Kabele, Jan Vorel, Eva Novotná, Michal Šmejkal, Martin Horák, Dagmar Jandeková, Petr Kabele Petr Kabele (Gar.)</i>	Z,ZK	5	2P+2C	L,Z	z
133NNKB	Fundamentals of Structural Design - Concrete <i>Martin Típka, Radek Štefan, Jitka Vašková, Michal Števula Martin Típka Martin Típka (Gar.)</i>	Z,ZK	4	2P+1C	L,Z	z
134NNKO	Design of Supporting StructuresI - Steel <i>František Wald, Martina Eliášová Martina Eliášová Martina Eliášová (Gar.)</i>	Z,ZK	3	2P+1C	L	z
135GEMZ	Geology and soil mechanics <i>Jan Salák</i>	Z,ZK	7	4P+2C	Z,L	z
142VIZP	Water and Environmental Engineering <i>Aleš Havlík, Michal Sn hota, Petr Nowak, Tomáš Dostál, Martin Do kal, Martin Šanda, Pavel Fošumpaur, Bohumil Š astný, Ladislav Satrapa, Ladislav Satrapa (Gar.)</i>	Z,ZK	4	3P+1C	Z,L	z

Characteristics of the courses of this group of Study Plan: Code=BJ20170400 Name=Stavební inženýrství, povinné p edm ty, 4. semestr

124PS01	Building Structures 1	Z,ZK	7
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.			
132SM3	Structural Mechanics 3	Z,ZK	5
Deformation and force method for the solution of reactions and internal forces on statically indeterminate beams, frames, and truss structures. Calculation of displacements of beams, frames, and truss structures using the principle of virtual works.			
133NNKB	Fundamentals of Structural Design - Concrete	Z,ZK	4
The content of the subject are the basics of load-bearing concrete structures design and the design methodology according to valid standards, including the determination of load effects. The properties of concrete, the production and testing of concrete, the properties of concrete reinforcement and its interaction with concrete are discussed. Design and reinforcement of concrete structures for basic types of loading (bending, shear, pressure) are the main part of this course. An introduction to serviceability limit states is in the end of this course. The course follows the introductory subject of Civil Engineering program (Structural Mechanics, Elasticity and Strength, Building Materials, Building Structures).			
134NNKO	Design of Supporting StructuresI - Steel	Z,ZK	3
The basics of designing steel, steel-concrete and wooden load-bearing structures according to applicable standards, including the determination of load effects, design differences due to the specific properties of individual materials.			
135GEMZ	Geology and soil mechanics	Z,ZK	7
Strength and deformation properties of soils, applications. Principles of design of geotecGeological and geotechnical model of the environment. Basic geological processes. Quaternary geology, hydrogeology.hnical structures.			
142VIZP	Water and Environmental Engineering	Z,ZK	4
During the teaching semester, students are introduced to the fields of water engineering, water management and environmental engineering. In particular, emphasis is placed on the practical aspects of water and environmental engineering in close relation to other branches of civil engineering. The course is taught in the form of 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: BE20130500

Name of the group: obor Management a ekonomika ve stavebnictví, 5. semestr

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

Requirement courses in the group: In this group you have to complete at least 5 courses

Credits in the group: 30

Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) <i>Tutors, authors and guarantors (gar.)</i>	Completion	Credits	Scope	Semester	Role
122TSE1	Technology of Construction - E1 <i>Rostislav Sulc</i>	Z,ZK	7	4P+2C	Z	z
126AES	Applied and Economic Statistics <i>Božena Kadeřáková</i>	Z,ZK	7	3P+3C	Z	z
126KAN1	Costing and Bidding 1 <i>Renáta Schneiderová Heralová</i>	Z,ZK	5	2P+2C	Z,L	z
126RSP	Building Management <i>Zita Prostějovská</i>	Z,ZK	6	4P+2C	Z	z
135ZSVT	Foundations <i>Josef Jettmar, Jan Masopust, Jan Kos Jan Masopust Jan Masopust (Gar.)</i>	Z,ZK	5	2P+2C	Z	z

Characteristics of the courses of this group of Study Plan: Code=BE20130500 Name=obor Management a ekonomika ve stavebnictví, 5. semestr

122TSE1	Technology of Construction - E1	Z,ZK	7
Earthwork, design of pit excavation and supporting technologies. Design of formwork. Concrete mixer plant, concrete conveying, concreting. Brickwork technologies, Roofing work, tin work.			
126AES	Applied and Economic Statistics	Z,ZK	7
Statistic inference, theory of probability, time series, correlation and regression analysis, indexes and its economic interpretation			
126KAN1	Costing and Bidding 1	Z,ZK	5
Organization and norms setting in construction firm, analysis of construction processes, labor consumption - classification, methods of time analysis, setting the norms of labor consumption, breakdown of labor costs. Wage systems, legal regulation of wages, internal company regulations, catalogue of trades and workers activities, cost classification, standard estimation methods and techniques, methods of absorption estimates, dynamisation methods.			
126RSP	Building Management	Z,ZK	6
Compendium of basic concepts and Project Management context. Methods for proceeding support. Legal rules, SN and ISO specifications. Basic aspects of Project Management. Construction as a product of Build-up Project. Purposes, strategies, stages and surround of Build-up Project. Status of Project Manager. Purchases and treaties in Project. Quality Management, Risk Management. Financial Management and Project Assessment. Feasibility Study. Project Management in light of time, sources and costs. Claim Management. Territorial planning and construction code law, public procurement law, definition of terms. Commercial contractual relationships, making a contract, forms of contracts, usage of general terms and conditions utilization. Public tender and its impact on the liabilities of the participants. Securing of a liability - penalty, guarantee. Main contract types in construction - contract of the conclusion of a future contract, purchase contract, contract for work, Contents of the contract.			
135ZSVT	Foundations	Z,ZK	5
Introduction to the subject, literature, design principles, geotechnical categories Strength and deformation characteristics of foundation soils, slab foundations Limit states of flat foundations, calculation of bearing capacity and settlement of flat foundations Deep foundations - typology, pile foundations, drilled and driven pile technology Axial capacity of isolated piles, pile load tests Determination of bearing capacity of transversely loaded piles, pile group Micropiles, anchors, technology Conventional and jet grouting, underground walls Construction pits, technology of shoring of construction pits Principles for the design and assessment of shoring structures, earth pressure, water effect Calculation of shoring structures, pressure dependent methods Dewatering of construction pits Protection of foundation structures against the effects of aggressive environments			

Code of the group: BE20140600

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

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

Requirement courses in the group: In this group you have to complete at least 5 courses

Credits in the group: 30

Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) <i>Tutors, authors and guarantors (gar.)</i>	Completion	Credits	Scope	Semester	Role
124KKT	Completing Constructions <i>Šárka Šilarová, Pavel Kopecký, Malila Noori Šárka Šilarová Šárka Šilarová (Gar.)</i>	Z,ZK	6	2P+3C	L	z
125TBU	Building services systems 1 <i>Ilona Koubková, Karel Kabele, Zuzana Veverková Ilona Koubková Ilona Koubková (Gar.)</i>	Z,ZK	4	2P+2C	L	z
126KN2E	Costing and Bidding 2E <i>Iveta Stělová</i>	Z,ZK	6	2P+3C	L	z
126MF1	Management in Construction Company 1 <i>Zita Prostějovská</i>	Z,ZK	6	3P+2C	L	z
126PPRI	Computing in Construction Management <i>Petr Dlásk</i>	Z,ZK	8	2P+5C	L	z

Characteristics of the courses of this group of Study Plan: Code=BE20140600 Name=obor Management a ekonomika ve stavebnictví, 6. semestr

124KKT	Completing Constructions	Z,ZK	6
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.			
125TBU	Building services systems 1	Z,ZK	4
Basic course in building services systems - water supply, drainage, gas supply, heating and ventilation systems.			
126KN2E	Costing and Bidding 2E	Z,ZK	6
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.			
126MF1	Management in Construction Company 1	Z,ZK	6
The course provides a general overview of the problems of a business in the construction industry. The student is familiar with and works actively with concepts of strategy, strategic analysis, management - top, middle and operational; planning at all levels and implementation plans, organizational structure, company management levels, controlling, human resources management, marketing, process and project management, risk management in the company.			
126PPRI	Computing in Construction Management	Z,ZK	8
The course is divided into two blocks: 1. Computer support of process control, 2. Basic practices of information modeling (BIM). In the course, students will learn the basics of simulation approach to the management of technical-economic processes of various nature. It also includes an introduction to computer simulation of various construction processes and practical application for control examples. The second block of the subject is focused to view of information modeling from a theoretical and especially practical point of view (3D modeling, line construction, MEP, process modeling, formats, common data environment).			

Code of the group: BE20130700

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

Requirement credits in the group: In this group you have to gain 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) <i>Tutors, authors and guarantors (gar.)</i>	Completion	Credits	Scope	Semester	Role
124PE1	Structural design project E Šárka Šílarová, Malila Noori, Lenka Hanzalová, B la Stib rková Ji í Pazderka Ji í Pazderka (Gar.)	KZ	4	4C	Z	z
126MF02	Management in Construction Company 2 Renáta Schneiderová Herálová	Z,ZK	7	3P+3C	Z	z
126PKAN	Estimating and Bidding Project Iveta Stělcová	KZ	4	4C	Z	z
126PRS	Construction Planning and Management Jaroslava Tománková, Lucie Brožová Lucie Brožová Jaroslava Tománková (Gar.)	Z,ZK	5	2P+3C	L	z
133BZKE	Concrete and Masonry Structures E Michaela Frantová Michaela Frantová Michaela Frantová (Gar.)	Z,ZK	5	2P+2C	Z	z
134ODKV	Steel and Timber Structures Anna Kuklíková, Michal Netušil Michal Netušil Anna Kuklíková (Gar.)	Z,ZK	5	2P+2C	Z,L	z
100ODPR	Industrial Training (3 weeks) Petr Hájek, Jan R ži ka Michal Jandera Michal Jandera (Gar.)	Z	0	6C	Z,L	z

Characteristics of the courses of this group of Study Plan: Code=BE20130700 Name=obor Management a ekonomika ve stavebnictví, 7. semestr

124PE1	Structural design project E	KZ	4
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 optimization 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.			
126MF02	Management in Construction Company 2	Z,ZK	7
The subject is divided into two follow-up parts: Financial Accounting and Investments. The first part introduces importance, accounting function, accrual principle for whom accounting information is intended, financial x management accounting, interconnection for tax purposes, legislation - Czech standards, IFRS, US GAAP. Balance Sheet, Active and Passive Accounts, Balance Sheet and Accounting, Profit, Profit and Loss Accounts, Financial Statements, Operating Profit, Financial. Distribution of profit. Distinction of costs and revenues. Incomplete production in construction. Depreciation of assets - methods of accounting depreciation, tax depreciation. Financial property. Cash Flow - indirect method.			
126PKAN	Estimating and Bidding Project	KZ	4
Stand-alone project (complex case example) oriented on putting together the bid budget of real existing project and its drawings and specs. Preparation of LOQ and itemized controlling budget of employer			
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.			
133BZKE	Concrete and Masonry Structures E	Z,ZK	5
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.			

134ODKV	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, protection, utilization. Timber - loadings, material properties, limit states methodology, design, connections, bracings, protection of structural timber, timber bridges.			
100ODPR	Industrial Training (3 weeks)	Z	0
Professional practice is an important part of academic education in undergraduate degree programmes. The student will gain a basic understanding of duties and professional responsibilities. The professional practice evaluates the sum of all knowledge acquired through previous theoretical studies and is a proof of their acquisition.			

Code of the group: BE20130800

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

Requirement credits in the group: In this group you have to gain 13 credits

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

Credits in the group: 13

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) <i>Tutors, authors and guarantors (gar.)</i>	Completion	Credits	Scope	Semester	Role
126FIK	Financial Management, Capital Investment, Contracting <i>Aleš Tomek, Radan Tomek Aleš Tomek Aleš Tomek (Gar.)</i>	Z,ZK	8	3P+3C	L	z
126PRSP	Construction Planning and Management Project <i>Jaroslava Tománková, Renáta Schneiderová Heralová, Dana Šápová Dana Šápová Dana Šápová (Gar.)</i>	KZ	5	4C	L	z

Characteristics of the courses of this group of Study Plan: Code=BE20130800 Name=obor Management a ekonomika ve stavebnictví, 8.semestr

126FIK	Financial Management, Capital Investment, Contracting	Z,ZK	8
Basic course of financial management, specifically focused on management in the construction sector. Emphasis is placed on methods of financing and accounting at enterprise, division and project level. Explanation of the interconnection of financial management and the realization of construction contracts in the wider framework of standard contracting and project management elements is also part of the course.			
126PRSP	Construction Planning 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. Processing of major documents for the offering and contractor preparation on the specific construction project documentation, with SW support.			

Name of the block: Povinná tělesná 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 tělesná 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) <i>Tutors, authors and guarantors (gar.)</i>	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 tělesná výchova

TV1	Physical Education	Z	0
TV2	Physical Education	Z	0

Name of the block: Elective courses

Minimal number of credits of the block: 0

The role of the block: V

Code of the group: BF2013_KG

Name of the group: Výběrová konstruktivní geometrie

Requirement credits in the group:

Requirement courses in the group:

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) <i>Tutors, authors and guarantors (gar.)</i>	Completion	Credits	Scope	Semester	Role
101YKG	Constructive Geometry - Selective Course	Z,ZK	5	2P+2C	Z	v

Characteristics of the courses of this group of Study Plan: Code=BF2013_KG Name=Výb rová konstruktivní geometrie

101YKG	Constructive Geometry - Selective Course	Z,ZK	5
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Name of the block: Compulsory elective courses

Minimal number of credits of the block: 5

The role of the block: S

Code of the group: BE20140800_1

Name of the group: obor Management a ekonomika ve stavebnictví, povinn volitelné p edm ty

Requirement credits in the group: In this group you have to gain 5 credits

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

Credits in the group: 5

Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) <i>Tutors, authors and guarantors (gar.)</i>	Completion	Credits	Scope	Semester	Role
126MCC	Management in Construction Company <i>Aleš Tomek, Radan Tomek Aleš Tomek Aleš Tomek (Gar.)</i>	Z,ZK	5	2P+2C	L	s
126YIPO	Small Business Management <i>Jana Frková, Olga Heralová Jana Frková Olga Heralová (Gar.)</i>	Z,ZK	5	2P+2C	L	s
126YSSP	Construction Cost Estimating Software <i>Lucie Brožová, Dana ápová Lucie Brožová Dana ápová (Gar.)</i>	Z,ZK	5	2P+2C	L	s
126YZP	Fundamentals of Innovative Entrepreneurship <i>Dana M š anová Dana M š anová Dana M š anová (Gar.)</i>	Z,ZK	5	2P+2C	L	s

Characteristics of the courses of this group of Study Plan: Code=BE20140800_1 Name=obor Management a ekonomika ve stavebnictví, povinn volitelné p edm ty

126MCC	Management in Construction Company	Z,ZK	5
Nature of Construction Business Primary Causes of Business Failure, External and Internal Influences Business Strategies to Minimize the Risk of Business Failure Business Development, Marketing and Bidding Planning Strategies Plan Implementation/Control Strategies Financial Management Strategies Construction Risk Management Leadership Challenges Organizational Behavior Corporate & Employee Ethics Company Performance Checklist Managing Profitable Construction Business Lectures are based on the real practice experience of all course's lecturers and various case studies are studied and solved. Online Building Industry Game (BIG) will be played by all course participants through the whole semester (a computer simulation of a realistic business environment where participants play the role of contractors, competing in a market with variable demand for construction work). In this online game, developed and directly operated by the California Polytechnic State University, students act as contractors, managing both, their companies and projects.			
126YIPO	Small Business Management	Z,ZK	5
The subject is divided into lectures and exercises of two hours 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. They draw up a plan for a start-up business. Entrepreneurship can take the form of both: an self-employed or a legal entity, e.g. Ltd. The financial plan is prepared in Excel, and the credit condition is the presentation of the business plan in power point in front of the auditorium.			
126YSSP	Construction Cost Estimating Software	Z,ZK	5
The teaching is focused on familiarization with cost calculation SW for item preparation			
126YZP	Fundamentals of Innovative Entrepreneurship	Z,ZK	5
Basic concepts of innovative business, technology transfer and science and technology parks; the innovation process and the role of the tools that influence it; principles of innovation management in the enterprise, application of innovation rules; Innovative Infrastructure System of the Czech Republic; the role of the Ministry of Industry and Trade, VaVal programs; protection of industrial property; Office of Industrial Property; BIM objectives in the construction industry and the importance of Industry 4.0; state of the VaVal legislation; EU operational programs. Cyber revolution CZ; the Central European platform for digital innovations CEEInno and Czech digital innovation hubs.			

Name of the block: Jazyky

Minimal number of credits of the block: 4

The role of the block: J

Code of the group: BF20130100_J

Name of the group: povinn volitelný jazyk - 1. 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) <i>Tutors, authors and guarantors (gar.)</i>	Completion	Credits	Scope	Semester	Role
104YC1A	English 1 <i>Petra Martincová</i>	Z	2	2C	Z,L	J
104YC1F	French 1 <i>Svatava Boboková Bartíková</i>	Z	2	2C	Z,L	J
104YC1N	German 1 <i>Svatava Boboková Bartíková</i>	Z	2	2C		J
104YC1R	Russian 1 <i>V ra ermáková</i>	Z	2	2C		J
104YC1S	Spanish 1 <i>Miloslava Menclová</i>	Z	2	2C		J

Characteristics of the courses of this group of Study Plan: Code=BF20130100_J Name=povinn volitelný jazyk - 1. semestr

104YC1A	English 1	Z	2
104YC1F	French 1	Z	2
104YC1N	German 1	Z	2
104YC1R	Russian 1	Z	2
104YC1S	Spanish 1	Z	2

Code of the group: BF20130200_J

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) <i>Tutors, authors and guarantors (gar.)</i>	Completion	Credits	Scope	Semester	Role
104YC2A	English 2 <i>Hana Horká, Petra Martincová, Petra Florianová, Sandra Giormani, V ra ermáková, Svatava Boboková Bartíková, Elena Da eva, Michaela Németh, Anna Študentová, Svatava Boboková Bartíková Sandra Giormani (Gar.)</i>	Z,ZK	2	2C		J
104YC2F	French 2 <i>Svatava Boboková Bartíková</i>	Z,ZK	2	2C		J
104YC2N	German 2 <i>Svatava Boboková Bartíková Sandra Giormani Svatava Boboková Bartíková (Gar.)</i>	Z,ZK	2	2C		J
104YC2R	Russian 2 <i>V ra ermáková</i>	Z,ZK	2	2C		J
104YC2S	Spanish 2 <i>Miloslava Menclová</i>	Z,ZK	2	2C		J

Characteristics of the courses of this group of Study Plan: Code=BF20130200_J Name=povinn volitelný jazyk - 2. semestr

104YC2A	English 2	Z,ZK	2
English 2 Course code: 104YC2A Scope: 0 + 2 (practical sessions) Number of credits: 1 Final assessment: credit and exam The aim of the compulsory English course is to enhance the knowledge of lexis and grammar within the scope of the chosen field of study and university studies in general (Academic English); the overall focus is on professional language (i.e., ESP - technical style) and communicative competence within the construction industry. The course also seeks to teach students to read technical literature and to be able to produce essential written discourse and to express themselves in writing on issues in their field of study. The end of course requirements are a credit and an examination. Literature: Horká Hana, Giormani Sandra, Martincová Petra, Nivenová Renata : Professional English for Civil Engineering (Units 6 – 10)			
104YC2F	French 2	Z,ZK	2
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			
104YC2R	Russian 2	Z,ZK	2
104YC2S	Spanish 2	Z,ZK	2

Name of the block: Povinn volitelné p edm ty, doporu ení S1

Minimal number of credits of the block: 12

The role of the block: S1

Code of the group: BE20150800_2

Name of the group: obor Management a ekonomika ve stavebnictví, bakalá ská práce

Requirement credits in the group: In this group you have to gain 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) <i>Tutors, authors and guarantors (gar.)</i>	Completion	Credits	Scope	Semester	Role
126BAPE	Bachelor Thesis <i>Jan Pruška Daniel Macek (Gar.)</i>	Z	12	10C	L,Z	S1

Characteristics of the courses of this group of Study Plan: Code=BE20150800_2 Name=obor Management a ekonomika ve stavebnictví, bakalá ská práce

126BAPE	Bachelor Thesis	Z	12
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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.

List of courses of this pass:

Code	Name of the course	Completion	Credits
100ODPR	Industrial Training (3 weeks) 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.	Z	0
101KG01	Constructive Geometry 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 groups of solids. Perspective projection. Curves, parametrisation. Frenet's trihedron, torsion and curvature. Helical surfaces. Quadrics. Surfaces in building industry.	Z,ZK	5
101MA01	Mathematics 1 https://mat.fsv.cvut.cz/bubenik/mat1detail.htm	Z,ZK	6
101MA02	Mathematics 2 https://mat.fsv.cvut.cz/vyuka/bakalari/eng/ls/MT02/	Z,ZK	6
101MA03	Mathematics 3 https://mat.fsv.cvut.cz/vyuka/bakalari/eng/zs/	Z,ZK	6
101YKG	Constructive Geometry - Selective Course	Z,ZK	5
102FY01	Physics Mass, structure of matter. Motion of matter, kinematics, dynamics. Force field. Deformations and leak. Oscillations, elastic waves, acoustics. Heat properties of matter.	Z,ZK	5
104YC1A	English 1	Z	2
104YC1F	French 1	Z	2
104YC1N	German 1	Z	2
104YC1R	Russian 1	Z	2
104YC1S	Spanish 1	Z	2
104YC2A	English 2 English 2 Course code: 104YC2A Scope: 0 + 2 (practical sessions) Number of credits: 1 Final assessment: credit and exam The aim of the compulsory English course is to enhance the knowledge of lexis and grammar within the scope of the chosen field of study and university studies in general (Academic English); the overall focus is on professional language (i.e., ESP - technical style) and communicative competence within the construction industry. The course also seeks to teach students to read technical literature and to be able to produce essential written discourse and to express themselves in writing on issues in their field of study. The end of course requirements are a credit and an examination. Literature: Horká Hana, Giormani Sandra, Martincová Petra, Nivenová Renata : Professional English for Civil Engineering (Units 6 – 10)	Z,ZK	2
104YC2F	French 2	Z,ZK	2
104YC2N	German 2 The compulsory course - German Language for Civil Engineering is aimed at practising professional vocabulary within the scope of the construction industry, understanding professional texts, and learning the necessary presentation skills in order to present all relevant professional issues. The end-of-course requirement is a credit. Literature: A.Hanáková, J.Dressel: Deutsch im Bauwesen	Z,ZK	2
104YC2R	Russian 2	Z,ZK	2
104YC2S	Spanish 2	Z,ZK	2
105SVAR	Social Sciences and Architecture Subject introduces the fundamental principles of several social sciences: Economics, Economic Policy, Political Science and Law with an overview of architectural development. Economic section offers an introduction to market economy, economic policy and international economy. Lectures and seminars dedicated to Political Science explain Theory of state, political systems, democracy and totalitarianism. Law section comprises brief overview of development of Roman law with interpretation of the Constitution, Labor Code and Civil Code.	Z,ZK	6
122TSE1	Technology of Construction - E1 Earthwork, design of pit excavation and supporting technologies. Design of formwork. Concrete mixer plant, concrete conveying, concreting. Brickwork's technologies, Roofing work, tin work.	Z,ZK	7
123CH01	Chemistry 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.	Z,ZK	5

123SH01	Building Materials Building materials - basis course. Classification of the materials. Structure of materials. Main properties of materials. Application of materials in building constructions. Introduction to material testing.	Z,ZK	5
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.	Z,ZK	6
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 optimization 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.	KZ	4
124PS01	Building Structures 1 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.	Z,ZK	7
125TBU	Building services systems 1 Basic course in building services systems - water supply, drainage, gas supply, heating and ventilation systems.	Z,ZK	4
126AES	Applied and Economic Statistics Statistic inference, theory of probability, time series, correlation and regression analysis, indexes and its economic interpretation	Z,ZK	7
126BAPE	Bachelor Thesis 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.	Z	12
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.	Z,ZK	7
126FIK	Financial Management, Capital Investment, Contracting Basic course of financial management, specifically focused on management in the construction sector. Emphasis is placed on methods of financing and accounting at enterprise, division and project level. Explanation of the interconnection of financial management and the realization of construction contracts in the wider framework of standard contracting and project management elements is also part of the course.	Z,ZK	8
126KAN1	Costing and Bidding 1 Organization and norms setting in construction firm, analysis of construction processes, labor consumption - classification, methods of time analysis, setting the norms of labor consumption, breakdown of labor costs. Wage systems, legal regulation of wages, internal company regulations, catalogue of trades and workers activities, cost classification, standard estimation methods and techniques, methods of absorption estimates, dynamisation methods.	Z,ZK	5
126KN2E	Costing and Bidding 2E 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.	Z,ZK	6
126MCC	Management in Construction Company Nature of Construction Business Primary Causes of Business Failure, External and Internal Influences Business Strategies to Minimize the Risk of Business Failure Business Development, Marketing and Bidding Planning Strategies Plan Implementation/Control Strategies Financial Management Strategies Construction Risk Management Leadership Challenges Organizational Behavior Corporate & Employee Ethics Company Performance Checklist Managing Profitable Construction Business Lectures are based on the real practice experience of all course's lecturers and various case studies are studied and solved. Online Building Industry Game (BIG) will be played by all course participants through the whole semester (a computer simulation of a realistic business environment where participants play the role of contractors, competing in a market with variable demand for construction work). In this online game, developed and directly operated by the California Polytechnic State University, students act as contractors, managing both, their companies and projects.	Z,ZK	5
126MF02	Management in Construction Company 2 The subject is divided into two follow-up parts: Financial Accounting and Investments. The first part introduces importance, accounting function, accrual principle for whom accounting information is intended, financial x management accounting, interconnection for tax purposes, legislation - Czech standards, IFRS, US GAAP. Balance Sheet, Active and Passive Accounts, Balance Sheet and Accounting, Profit, Profit and Loss Accounts, Financial Statements, Operating Profit, Financial. Distribution of profit. Distinction of costs and revenues. Incomplete production in construction. Depreciation of assets - methods of accounting depreciation, tax depreciation. Financial property. Cash Flow - indirect method.	Z,ZK	7
126MF1	Management in Construction Company 1 The course provides a general overview of the problems of a business in the construction industry. The student is familiar with and works actively with concepts of strategy, strategic analysis, management - top, middle and operational; planning at all levels and implementation plans, organizational structure, company management levels, controlling, human resources management, marketing, process and project management, risk management in the company.	Z,ZK	6
126PKAN	Estimating and Bidding Project Stand-alone project (complex case example) oriented on putting together the bid budget of real existing project and its drawings and specs. Preparation of LOQ and itemized controlling budget of employer	KZ	4
126PPRI	Computing in Construction Management The course is divided into two blocks: 1. Computer support of process control, 2. Basic practices of information modeling (BIM). In the course, students will learn the basics of simulation approach to the management of technical-economic processes of various nature. It also includes an introduction to computer simulation of various construction processes and practical application for control examples. The second block of the subject is focused to view of information modeling from a theoretical and especially practical point of view (3D modeling, line construction, MEP, process modeling, formats, common data environment).	Z,ZK	8
126PRS	Construction Planning and Management 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.	Z,ZK	5

126PRSP	Construction Planning 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. Processing of major documents for the offering and contractor preparation on the specific construction project documentation, with SW support.			
126RSP	Building Management	Z,ZK	6
Compendium of basic concepts and Project Management context. Methods for proceeding support. Legal rules, SN and ISO specifications. Basic aspects of Project Management. Construction as a product of Build- up Project. Purposes, strategies, stages and surround of Build - up Project. Status of Project Manager. Purchases and treaties in Project. Quality Management, Risk Management. Financial Management and Project Assessment. Feasibility Study. Project Management in light of time, sources and costs. Claim Management. Territorial planning and construction code law, public procurement law, definition of terms. Commercial contractual relationships, making a contract, forms of contracts, usage of general terms and conditions utilization. Public tender and its impact on the liabilities of the participants. Securing of a liability - penalty, guarantee. Main contract types in construction - contract of the conclusion of a future contract, purchase contract, contract for work, Contents of the contract.			
126YIPO	Small Business Management	Z,ZK	5
The subject is divided into lectures and exercises of two hours 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. They draw up a plan for a start-up business. Entrepreneurship can take the form of both: an self-employed or a legal entity, e.g. Ltd. The financial plan is prepared in Excel, and the credit condition is the presentation of the business plan in power point in front of the auditorium.			
126YSSP	Construction Cost Estimating Software	Z,ZK	5
The teaching is focused on familiarization with cost calculation SW for item preparation			
126YZP	Fundamentals of Innovative Entrepreneurship	Z,ZK	5
Basic concepts of innovative business, technology transfer and science and technology parks; the innovation process and the role of the tools that influence it; principles of innovation management in the enterprise, application of innovation rules; Innovative Infrastructure System of the Czech Republic; the role of the Ministry of Industry and Trade, VaVal programs; protection of industrial property; Office of Industrial Property; BIM objectives in the construction industry and the importance of Industry 4.0; state of the VaVal legislation; EU operational programs. Cyber revolution CZ; the Central European platform for digital innovations CEEInno and Czech digital innovation hubs.			
132PRPE	Strength of Materials	Z,ZK	6
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	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.			
132SM3	Structural Mechanics 3	Z,ZK	5
Deformation and force method for the solution of reactions and internal forces on statically indeterminate beams, frames, and truss structures. Calculation of displacements of beams, frames, and truss structures using the principle of virtual works.			
133BZKE	Concrete and Masonry Structures E	Z,ZK	5
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.			
133NNKB	Fundamentals of Structural Design - Concrete	Z,ZK	4
The content of the subject are the basics of load-bearing concrete structures design and the design methodology according to valid standards, including the determination of load effects. The properties of concrete, the production and testing of concrete, the properties of concrete reinforcement and its interaction with concrete are discussed. Design and reinforcement of concrete structures for basic types of loading (bending, shear, pressure) are the main part of this course. An introduction to serviceability limit states is in the end of this course. The course follows the introductory subject of Civil Engineering program (Structural Mechanics, Elasticity and Strength, Building Materials, Building Structures).			
134NNKO	Design of Supporting StructuresI - Steel	Z,ZK	3
The basics of designing steel, steel-concrete and wooden load-bearing structures according to applicable standards, including the determination of load effects, design differences due to the specific properties of individual materials.			
134ODKV	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, protection, utilization. Timber - loadings, material properties, limit states methodology, design, connections, bracings, protection of structural timber, timber bridges.			
135GEMZ	Geology and soil mechanics	Z,ZK	7
Strength and deformation properties of soils, applications. Principles of design of geotecGeological and geotechnical model of the environment. Basic geological processes. Quaternary geology, hydrogeology,hnical structures.			
135ZSVT	Foundations	Z,ZK	5
Introduction to the subject, literature, design principles, geotechnical categories Strength and deformation characteristics of foundation soils, slab foundations Limit states of flat foundations, calculation of bearing capacity and settlement of flat foundations Deep foundations - typology, pile foundations, drilled and driven pile technology Axial capacity of isolated piles, pile load tests Determination of bearing capacity of transversely loaded piles, pile group Micropiles, anchors, technology Conventional and jet grouting, underground walls Construction pits, technology of shoring of construction pits Principles for the design and assessment of shoring structures, earth pressure, water effect Calculation of shoring structures, pressure dependent methods Dewatering of construction pits Protection of foundation structures against the effects of aggressive environments			
136DSUP	Transport Structures and Urban Planning	Z,ZK	6
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 and hydrodynamic loading of structures, pipeline flow, open channel flow and groundwater flow.			
142VIZP	Water and Environmental Engineering	Z,ZK	4
During the teaching semester, students are introduced to the fields of water engineering, water management and environmental engineering. In particular, emphasis is placed on the practical aspects of water and environmental engineering in close relation to other branches of civil engineering. The course is taught in the form of 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.			
154SG01	Land Surveying in Civil Engineering	Z,ZK	6
The shape and size of the Earth, substitutive surfaces, cartographic projections Horizontal and vertical control, coordinate calculations Quality control, deviations and tolerations in build-up Angle and distance measurements Heighting measurements Other geodetic methods in build-up (GNSS, DPZ, ...) Photogrammetry and laser scanning Thematic mapping and present state documentation Geodetic works in build-up State map series of CR and thematic maps for build-up Geographic information systems and spatial planning Cadastre of real estates Laws and decrees for geodesy and build-up in Czech Republic			

TV1	Physical Education	Z	0
TV2	Physical Education	Z	0

For updated information see <http://bilakniha.cvut.cz/en/FF.html>

Generated: day 2024-05-20, time 08:08.