

# Study plan

## Name of study plan: obor Stavební management

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: Follow-up master full-time

Required credits: 90

Elective courses credits: 0

Sum of credits in the plan: 90

Note on the plan: tento studijní plán platí do nástupu 2022/23

Name of the block: Compulsory courses

Minimal number of credits of the block: 78

The role of the block: Z

Code of the group: NN20160100

Name of the group: obor Stavební management, 1. semestr

Requirement credits in the group: In this group you have to gain at least 29 credits (at most 30)

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

Credits in the group: 29

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
126INZG	<b>Engineering</b> Dana M š anová, Václav Tatýrek <b>Václav Tatýrek</b> Dana M š anová (Gar.)	Z,ZK	5	2P+2C	Z,L	z
126KN1	<b>Costing and Bidding 1</b> Renáta Schneiderová Heralová <b>Renáta Schneiderová Heralová</b> Renáta Schneiderová Heralová (Gar.)	Z,ZK	5	2P+2C	Z	z
126MSFN	<b>Managment in Construction Company</b> Martin ásenský <b>Martin ásenský</b>	Z,ZK	6	3P+2C	Z	z
126PM01	<b>Project Management 1</b> Michal Vondruška <b>Michal Vondruška</b> Michal Vondruška (Gar.)	Z,ZK	7	3P+3C	Z	z
126PRRS	<b>Construction Planning and Operations Management</b> Jaroslava Tománková, Lucie Brožová <b>Lucie Brožová</b> Lucie Brožová (Gar.)	Z,ZK	6	2P+3C	Z	z

### Characteristics of the courses of this group of Study Plan: Code=NN20160100 Name=obor Stavební management, 1. semestr

126INZG	Engineering	Z,ZK	5
Conceptual and operational management of development projects from perspective of time, resources, cost, analysis of resources, solution design, external examination, investment opportunities study, feasibility study, interest optimization, technological, legal, financial resources, price determination, commercial contractual law, engineering contracts specimens, VOB (Verdingungsordnung für Bauleistungen) delivery conditions used by german investors - FIDIC contractual terms used in international construction practice, contractual determination of performance and quality parameters, contractual sanctions, time realistic plans, territorial, constructional governance, law no. 183/2006 Sb. fulfilment, construction order assignment, investment engineering, supplier engineering, suppliers coordination, financial management, capacity management, quality control, technological regulations, handover proceedings plan, test run operation, parameters fulfilment assessment, construction maintenance planning, marketing, building changes prior completion, building handover and acceptance, handover documentation, performance audit, decision processes and methods, invested energy. BIM. Documentation rules. Insolvency, Social responsibility in construction firms, RIPRAN method.			
126KN1	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 af absorption estimates, dynamisation methods.			
126MSFN	Managment in Construction Company	Z,ZK	6
The course provides a general overview of the problems of a business in the construction industry . The student is familiar and works actively with concepts strategy , strategic analysis , management - top , middle and operational; planning at all levels and implementation plans , organizational structure , management levels in the company , controlling, human resources management , marketing, process and project management , risk management in the company .			
126PM01	Project Management 1	Z,ZK	7
The subject is focused on important decision-making processes and management processes in the preparation and implementation of construction from the perspective of the owner of the construction project. The goal is to analyze the appropriateness of developer acquisition, project activity, legislative preparation, permitting processes, choice of supplier system, choice of supplier evaluation method, choice of contract form. The main attention will be paid to the comparison of the traditional construction delivery method (Design Bid Build) with current alternative delivery systems (Design Build, Integrated Project Delivery, Construction Management). The teaching is supplemented by a number of case studies.			

126PRRS	Construction Planning and Operations Management	Z,ZK	6
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,			

Code of the group: NN20170200

Name of the group: obor Stavební management, 2. semestr

Requirement credits in the group: In this group you have to gain 19 credits

Requirement courses in the group: In this group you have to complete at least 4 courses

Credits in the group: 19

Note on the group: úpravy kreditů

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, <b>authors</b> and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
126BIMB	<b>BIM - Information modeling</b> Petr Mat jka, Josef Žák <b>Petr Mat jka</b> Petr Mat jka (Gar.)	Z,ZK	4	1P+3C	Z	z
126K2N	<b>Costing and Bidding 2E</b> Renáta Schneiderová Heralová, Lucie Brožová, Iveta St elcová <b>Iveta St elcová</b> Renáta Schneiderová Heralová (Gar.)	Z,ZK	6	2P+3C	L	z
126PM2	<b>Project Management 2</b> Michal Vondruška <b>Michal Vondruška</b> Michal Vondruška (Gar.)	Z,ZK	5	3P+1C	L	z
126DISN	<b>Diploma Seminar</b> Dana M š anová, Václav Tatýrek, Renáta Schneiderová Heralová, Martin ásenský, Michal Vondruška, Jaroslava Tománková, Petr Mat jka, Eduard Hromada, Ji í Karásek, ..... <b>Eduard Hromada</b>	Z	4	3C	L	z

**Characteristics of the courses of this group of Study Plan: Code=NN20170200 Name=obor Stavební management, 2. semestr**

126BIMB	BIM - Information modeling	Z,ZK	4
Subject deals with Building Information Modeling (BIM) topic as with the modern tool for management and operation of construction projects. It is oriented to handling basic relevant software (Autodesk Revit, Autodesk Navisworks) and especially to understanding meaning of BIM in current construction business and its future and importance in specific phases of construction projects.			
126K2N	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.			
126PM2	Project Management 2	Z,ZK	5
The teaching of the subject Project management 2 is focused on the acquisition of project management methods in the implementation of large-scale technological constructions and constructions of transport infrastructure. The curriculum is based on the classical theory of project management according to the PMBOK (Project Management Body of Knowledge) and its application to the construction project management manuals of major construction companies (Best Practice). Detailed attention is paid to the main processes of project management (scope, time, cost, quality, human resources, risk and procurement management). The procedural management of construction projects is supplemented by the current issue of claims management and crisis management of construction projects.			
126DISN	Diploma Seminar	Z	4
At the beginning of the semester, each student contacts the supervisor from the Department of Construction Management and Economics (the list of framework topics is published in the KOS information system). In cooperation with the work supervisor, the topic of work from the field of construction and economics is specified. The project deals with problems mainly from construction practice. The project is a preparation for own diploma thesis. The output of the project is the assignment of the topic of the diploma thesis, preparation of the thesis outline, search and study of literature, research and detailed familiarization with the solved problem. The student studies the methodological instructions of the CTU in Prague on how to write university final theses - see <a href="http://knihovna.cvut.cz/cs/seminare-a-vyuka/jak-psat/jak-psat-zaverecnou-praci">http://knihovna.cvut.cz/cs/seminare-a-vyuka/jak-psat/jak-psat-zaverecnou-praci</a> .			

Code of the group: NN20160300

Name of the group: obor Stavební management, diplomová práce

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 1 course

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, <b>authors</b> and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
126DPM	<b>Diploma Thesis</b> Dana M š anová, Václav Tatýrek, Renáta Schneiderová Heralová, Martin ásenský, Michal Vondruška, Jaroslava Tománková, Lucie Brožová, Petr Mat jka, Josef Žák, ..... <b>Eduard Hromada</b> Václav Tatýrek (Gar.)	Z	30	24C	Z	z

**Characteristics of the courses of this group of Study Plan: Code=NN20160300 Name=obor Stavební management, diplomová práce**

126DPM	Diploma Thesis	Z	30
In his/her diploma thesis a student deals with topics from civil engineering and construction, economic and management. He/she solves problems both from operational practice and from research and development. A thesis contains a text part, drawings and possibly documentation. In the project conclusion a student will highlight his/her own contribution to the assigned topic. A thesis links to diploma project and augments knowledge gained of it. The student continuously consults the work with the supervisor, when he submits the individual parts in progress.			

Name of the block: Compulsory elective courses

Minimal number of credits of the block: 12

The role of the block: S

Code of the group: NN20180200\_1

Name of the group: obor Stavební management, 2. semestr, povinn volitelné p edm ty

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 3 courses

Credits in the group: 12

Note on the group: odstraněn 122YTSN

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
126FAMG	<b>Facility Management</b> <i>Daniel Macek <b>Daniel Macek</b> Daniel Macek (Gar.)</i>	Z,ZK	4	1P+3C	L	s
126KIST	<b>Calculation of Transport Infrastructure</b> <i>Josef Žák, Iveta St elcová, Stanislav Vitásek <b>Iveta St elcová</b> Iveta St elcová (Gar.)</i>	Z,ZK	5	2P+2C	L	s
126YCON	<b>Construction Contracting</b> <i>Radan Tomek, Aleš Tomek <b>Aleš Tomek</b></i>	Z,ZK	4	4P	L	s
126YEMB	<b>Energy Management</b> <i>Ji í Karásek <b>Ji í Karásek</b> Ji í Karásek (Gar.)</i>	Z,ZK	4	2P+2C	L	s
126YIPO	<b>Small Business Management</b> <i>Jana Frková, Olga Heralová <b>Jana Frková</b> Olga Heralová (Gar.)</i>	Z,ZK	5	2P+2C	L	s
126YTRZ	<b>Decision -Making Theory</b>	Z,ZK	4	2P+2C	L	s

**Characteristics of the courses of this group of Study Plan: Code=NN20180200\_1 Name=obor Stavební management, 2. semestr, povinn volitelné p edm ty**

126FAMG	Facility Management	Z,ZK	4
The aim of the course is to understand the issue of integrated facility management in the context of the currently valid standards SN EN 15221 and SN EN ISO 41001 - Facility management. Students will become familiar with the principles of efficient building operation, including the provision of support activities in the form of in-house and outsourcing. As part of the life cycle of buildings, they solve the issue of operating costs, including maintenance and renewal planning, where they use the Buildpass application. Students will learn to work with the ARCHIBUS CAFM system, from linking the BIM model from the Revit application to solving practical tasks in building management and operation.			
126KIST	Calculation of Transport Infrastructure	Z,ZK	5
Deepening of knowledge in the field of transport constructions (roads, bridges, culverts and retaining walls) both in terms of valuation and preparation of constructions (prices, cost calculation, construction site equipment) and in terms of technology.			
126YCON	Construction Contracting	Z,ZK	4
As every project manager in construction business has to be a contract manager at the same time, understanding the contract - respectively contracting in general - is a must. Course of Construction Contracting is oriented on current business practices and methods, management techniques and understanding general legal principles, codes and regulations. It is about doing business in construction using standard procurement systems and applying given types of contracts, respectively standard contracts (e.g. FIDIC). Lectures are based on the real practice experience of both course's lecturers and various case studies are studied and solved in the course.			
126YEMB	Energy Management	Z,ZK	4
The course on energy management covers the issues of management in general, energy management, energy systems, and energy efficiency in the European legislation framework. The main target of the course is to explain basic principles and future changes in the construction industry, specifically in the field of energy efficiency economics. The students will increase their knowledge about strategies towards sustainable energy in buildings and mainly about energy efficiency. A specific part of the course is dedicated to the evaluation of energy efficiency measures, supporting schemes for energy efficiency, tackling energy poverty, multi-criterial evaluation of projects, LCA (live cycle assessment) and LCC (life cycle cost), moreover the students receive overview of the cost optimum calculation.			
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.			
126YTRZ	Decision -Making Theory	Z,ZK	4
Basic terms and managerial decision-making knowledge. Decision-making under certainty - methods of creation of variants, methods of defining criteria, methods of determination of importance (weight) of criteria. Multi-criteria evaluation, variant, value. Determination of variants costs. Decision-making under risk and uncertainty.			

### List of courses of this pass:

Code	Name of the course	Completion	Credits
126BIMB	BIM - Information modeling	Z,ZK	4
Subject deals with Building Information Modeling (BIM) topic as with the modern tool for management and operation of construction projects. It is oriented to handling basic relevant software (Autodesk Revit, Autodesk Navisworks) and especially to understanding meaning of BIM in current construction business and its future and importance in specific phases of construction projects.			

126DISN	Diploma Seminar	Z	4
At the beginning of the semester, each student contacts the supervisor from the Department of Construction Management and Economics (the list of framework topics is published in the KOS information system). In cooperation with the work supervisor, the topic of work from the field of construction and economics is specified. The project deals with problems mainly from construction practice. The project is a preparation for own diploma thesis. The output of the project is the assignment of the topic of the diploma thesis, preparation of the thesis outline, search and study of literature, research and detailed familiarization with the solved problem. The student studies the methodological instructions of the CTU in Prague on how to write university final theses - see <a href="http://knihovna.cvut.cz/cs/seminare-a-vyuka/jak-psat/jak-psat-zaverecnou-praci">http://knihovna.cvut.cz/cs/seminare-a-vyuka/jak-psat/jak-psat-zaverecnou-praci</a> .			
126DPM	Diploma Thesis	Z	30
In his/her diploma thesis a student deals with topics from civil engineering and construction, economic and management. He/she solves problems both from operational practice and from research and development. A thesis contains a text part, drawings and possibly documentation. In the project conclusion a student will highlight his/her own contribution to the assigned topic. A thesis links to diploma project and augments knowledge gained of it. The student continuously consults the work with the supervisor, when he submits the individual parts in progress.			
126FAMG	Facility Management	Z,ZK	4
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126INZG	Engineering	Z,ZK	5
Conceptual and operational management of development projects from perspective of time, resources, cost, analysis of resources, solution design, external examination, investment opportunities study, feasibility study, interest optimization, technological, legal, financial resources, price determination, commercial contractual law, engineering contracts specimens, VOB (Verdingungsordnung für Bauleistungen) delivery conditions used by german investors - FIDIC contractual terms used in international construction practice, contractual determination of performance and quality parameters, contractual sanctions, time realistic plans, territorial, constructional governance, law no. 183/2006 Sb. fulfilment, construction order assignment, investment engineering, supplier engineering, suppliers coordination, financial management, capacity management, quality control, technological regulations, handover proceedings plan, test run operation, parameters fulfilment assessment, construction maintenance planning, marketing, building changes prior completion, building handover and acceptance, handover documentation, performance audit, decision processes and methods, invested energy. BIM. Documentation rules. Insolvency, Social responsibility in construction firms, RIPRAN method.			
126K2N	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.			
126KIST	Calculation of Transport Infrastructure	Z,ZK	5
Deepening of knowledge in the field of transport constructions (roads, bridges, culverts and retaining walls) both in terms of valuation and preparation of constructions (prices, cost calculation, construction site equipment) and in terms of technology.			
126KN1	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.			
126MSFN	Management in Construction Company	Z,ZK	6
The course provides a general overview of the problems of a business in the construction industry. The student is familiar and works actively with concepts strategy, strategic analysis, management - top, middle and operational; planning at all levels and implementation plans, organizational structure, management levels in the company, controlling, human resources management, marketing, process and project management, risk management in the company.			
126PM01	Project Management 1	Z,ZK	7
The subject is focused on important decision-making processes and management processes in the preparation and implementation of construction from the perspective of the owner of the construction project. The goal is to analyze the appropriateness of developer acquisition, project activity, legislative preparation, permitting processes, choice of supplier system, choice of supplier evaluation method, choice of contract form. The main attention will be paid to the comparison of the traditional construction delivery method (Design Bid Build) with current alternative delivery systems (Design Build, Integrated Project Delivery, Construction Management). The teaching is supplemented by a number of case studies.			
126PM2	Project Management 2	Z,ZK	5
The teaching of the subject Project management 2 is focused on the acquisition of project management methods in the implementation of large-scale technological constructions and constructions of transport infrastructure. The curriculum is based on the classical theory of project management according to the PMBOK (Project Management Body of Knowledge) and its application to the construction project management manuals of major construction companies (Best Practice). Detailed attention is paid to the main processes of project management (scope, time, cost, quality, human resources, risk and procurement management). The procedural management of construction projects is supplemented by the current issue of claims management and crisis management of construction projects.			
126PRRS	Construction Planning and Operations Management	Z,ZK	6
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,			
126YCON	Construction Contracting	Z,ZK	4
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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.			

126YTRZ	Decision -Making Theory	Z,ZK	4
Basic terms and managerial decision-making knowledge. Decision-making under certainty - methods of creation of variants, methods of defining criteria, methods of determination of importance (weight) of criteria. Multi-criteria evaluation, variant, value. Determination of variants costs. Decision-making under risk and uncertainty.			

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

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