

# Study plan

## Name of study plan: Stavitelství - p íprava, realizace a provoz staveb

Faculty/Institute/Others:

Department:

Branch of study guaranteed by the department: Welcome page

Garantor of the study branch:

Program of study: Construction Engineering - Planning, Implementation and Operation of Structures

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: platí pro nástup od akad. roku 2023/24

Name of the block: Compulsory courses

Minimal number of credits of the block: 79

The role of the block: Z

Code of the group: NR20230100

Name of the group: Stavitelství - p íprava, realizace a provoz staveb, 1. semestr

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

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

Credits in the group: 19

Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
122KVAS	<b>Quality in Construction</b> Linda Veselá, Pavel Svoboda <b>Pavel Svoboda</b> Linda Veselá (Gar.)	Z,ZK	7	3P+2C	Z	z
122PRPV	<b>Use of Computers for Planing and Management of Projects</b> Rostislav Šulc, Tomáš Váchal, Vja eslav Usmanov <b>Tomáš Váchal</b> Rostislav Šulc (Gar.)	Z,ZK	7	3P+3C	Z	z
210DIIK	<b>Diagnostics of Engineering Structures</b> Jan Zatloukal, Petr Konvalinka <b>Petr Konvalinka</b> Petr Konvalinka (Gar.)	Z,ZK	5	2P+2C	Z,L	z

Characteristics of the courses of this group of Study Plan: Code=NR20230100 Name=Stavitelství - p íprava, realizace a provoz staveb, 1. semestr

122KVAS	Quality in Construction	Z,ZK	7
122PRPV	Use of Computers for Planing and Management of Projects	Z,ZK	7
210DIIK	Diagnostics of Engineering Structures	Z,ZK	5

The course aims to introduce diagnostics of civil engineering structures, mechanical, thermal, hygric, chemical and others influences of genesis of failure of civil engineering structures, specifically on engineering structures (bridges, footbridges, halls etc.). During the course students will introduce with behavior of engineering structures, structural and material failures, testing devices for diagnostics and data evaluation.

Code of the group: NR20230200

Name of the group: Stavitelství - p íprava, realizace a provoz staveb, 2. 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: Pro zápis předmětu Projekt - 122PRJL je nutné v průběhu magisterského nebo předchozího bakalářského studia absolvovat kombinaci předmětů Provozování a správa budov - 122PSBL nebo Řízení správy, provozu a údržby budov - 122RPSB a Inženýrské činnosti pro pozemní stavby - 122ICPS nebo Inženýrské činnosti pro pozemní stavby - 122ICPP.

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
122BOZF	<b>Health and Safety Management in Construction Company and on Building Site</b> Pavel Svoboda, Tomáš Váchal <b>Tomáš Váchal</b> Pavel Svoboda (Gar.)	Z,ZK	7	4P+2C	L	Z
122PRJL	<b>Project Design</b> Tomáš Váchal, en k Jarský, Pavel Neumann <b>en k Jarský</b> en k Jarský (Gar.)	KZ	5	4C	L	Z
122SPTC	<b>Robot Control and Special Technology</b> Michal Kovář <b>Michal Kovář</b> Michal Kovář (Gar.)	Z,ZK	4	2P+2C	L	Z
122TEPR	<b>Construction Technology Design</b> Vít Kosina, Matouš Kosina <b>Vít Kosina</b> Vít Kosina (Gar.)	Z,ZK	5	2P+2C	L	Z
126FRIN	<b>Financial Management, Capital Investment and Insurance</b> Eduard Hromada, Božena Kadeřáková	Z,ZK	4	2P+2C	L	Z
134NKPS	<b>Design of structures during construction process</b> Bětišlav Židlický, Karel Šeps, Martin Típka <b>Bětišlav Židlický</b> Bětišlav Židlický (Gar.)	Z,ZK	5	2P+2C	L	Z

**Characteristics of the courses of this group of Study Plan: Code=NR20230200 Name=Stavitelství - p íprava, realizace a provoz staveb, 2. semestr**

122BOZF	Health and Safety Management in Construction Company and on Building Site	Z,ZK	7	The aim of the course is to acquaint students with the performance of the health and safety coordinator (hereinafter in the Health and Safety Department) in the preparatory and implementation phase of construction, operation on the construction site in the role of coordination of safe work and workplace. The main goal is to train the development of a health and safety plan for a specific building and its updating and problem solving on examples. Sm.92 / 57 / EHS, introduction of KOO OSH in the Czech Republic, nomenclature, content and compilation of OSH plan according to Act No. 309/2006 Coll. elaboration of individual types of project documentation, application in practice, view of OIP on KOO BOZP, BOZP plan - Excel; software related to the issue; statutory activities of KOO BOZP, photographs of good and bad practice from constructions Practical experience from tenders for the determination of KOO BOZP, remuneration of KOO BOZP and its insurance; conditions for Special Risks and Constructions. Within the exercise, the aim of the course is to develop a health and safety plan for a specific construction and understand the need to coordinate safe work on construction sites and identify all possible health and safety deficiencies and risks on a specific construction; check that all risks on the construction site have been described and assessed; to get acquainted with the activities of KOO BOZP on the construction site.		
122PRJL	Project Design	KZ	5	Assessment of submitted project documentation (for building permits) and its possible additions, solution of the spatial, technological and time structure of the complex construction process of the event, including the processing of the inspection and test plan, environmental plan and health and safety plan, construction site equipment design, technological work procedure (production regulations) 2 of selected important processes, accompanying technical report with commentary on the solution.		
122SPTC	Robot Control and Special Technology	Z,ZK	4			
122TEPR	Construction Technology Design	Z,ZK	5			
126FRIN	Financial Management, Capital Investment and Insurance	Z,ZK	4	Financial strategies and objectives, financial analysis, sources of financing and choice of optimal financial structure, investment activity of the company, decision making about investments, cash-flow investment project management, financial risks and their elimination, fundamentals of insurance.		
134NKPS	Design of structures during construction process	Z,ZK	5	Deepening of knowledge in the field of steel and concrete structures with respect to the construction method. Advanced design of steel structures - lateral and torsional stability of beams, global analysis of structures, scaffold, technological structures; cable and membrane structures. Advanced design of concrete structure with respect to the technology during construction.		

Code of the group: NR20230300

Name of the group: Stavitelství - p íprava, realizace a provoz staveb, 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 2 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
122ROPM	<b>Guided Professional Practice</b> Rostislav Šulc	Z	4	8C	Z	Z
122DPST	<b>Diploma Thesis</b> Rostislav Šulc	Z	26	16C	Z	Z

**Characteristics of the courses of this group of Study Plan: Code=NR20230300 Name=Stavitelství - p íprava, realizace a provoz staveb, 3. semestr**

122ROPM	Guided Professional Practice	Z	4			
122DPST	Diploma Thesis	Z	26			

Name of the block: Compulsory elective courses

Minimal number of credits of the block: 6

The role of the block: S

Code of the group: NR20230100\_2

Name of the group: Stavitelství - p íprava, realizace a provoz staveb, PV p edm ty - oborový

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
124PS4C	<b>Building Structures 4</b> Vladimír Ž ára, Hana Gattermayerová, Tomáš ejka, Ctislav Fiala <b>Vladimír Ž ára</b> Vladimír Ž ára (Gar.)	Z,ZK	4	2P+2C	Z	s
136TPPK	<b>Realization Technologies for Road Structures</b> Jan Valentin, Petr Mondschein <b>Jan Valentin</b> Jan Valentin (Gar.)	Z,ZK	4	2P+2C	Z	s
142PMRV	<b>Operation, Modernisation and Reconstruction of Water Structures</b> Karel K íž, Pavel Fošumpaur, Tomáš Dally <b>Pavel Fošumpaur</b> Pavel Fošumpaur (Gar.)	Z,ZK	4	2P+2C	Z	s
125TTZB	<b>Technical and Technological Equipment of Buildings</b> Michal Kabrhel, Ilona Koubková <b>Michal Kabrhel</b> Michal Kabrhel (Gar.)	Z,ZK	4	2P+2C	Z	s
128OVMT	<b>Operations Research and Mathematical Models in Technology</b> Jana Ku erová <b>Jana Ku erová</b> Jana Ku erová (Gar.)	Z,ZK	4	2P+2C	Z	s

Characteristics of the courses of this group of Study Plan: Code=NR20230100\_2 Name=Stavitelství - p íprava, realizace a provoz staveb, PV p edm ty - oborový

124PS4C	Building Structures 4	Z,ZK	4
136TPPK	Realization Technologies for Road Structures	Z,ZK	4
The 136TPPK course is an extension course for students who have chosen to focus on transport structures within the specialization "Civil Engineering - preparation, erection and operation of buildings" or who want to deepen their knowledge in this area. The course in the field of technologies and technical solutions of road structures allows to obtain an extension of previously acquired knowledge and introduces students to other technologies of road construction. The student will be introduced to key technologies for asphalt pavements, CB pavements, paved pavements and bridge pavements.			
142PMRV	Operation, Modernisation and Reconstruction of Water Structures	Z,ZK	4
125TTZB	Technical and Technological Equipment of Buildings	Z,ZK	4
The subject deals with systems of technical equipment of buildings - water supply, gas supply, sewage, heating, ventilation and cooling. Individual systems are described and their properties and methods of use are discussed. Important technological units found in buildings are also addressed in the lesson.			
128OVMT	Operations Research and Mathematical Models in Technology	Z,ZK	4
An introduction to optimization methodologies with the emphasis on linear optimization, stochastic modelling and multiple criteria optimization including algorithms and computations. Applications will be introduced as appropriate in seminars.			

Code of the group: NR20230100\_3

Name of the group: Stavitelství - p íprava, realizace a provoz staveb, PV p edm ty - technologie

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
122YTSD	<b>Technology of Component Production</b> Rostislav Šulc <b>Rostislav Šulc</b> Rostislav Šulc (Gar.)	Z	2	1P+1C	Z,L	s
122YTEE	<b>Technology of Ecological Projects</b> Michal Ková ík	Z	2	1P+1C	Z	s
122YTRH	<b>Technology of reconstructions of historical buildings</b> Pavel Svoboda, Pavel Neumann, Ladislav Valtr <b>Rostislav Šulc</b> Pavel Neumann (Gar.)	Z	2	1P+1C	Z	s
123YTVM	<b>Production technology of building materials</b> Dana Ko áková, Eva Vejmelková, Vojt ch Pommer, Martin Böh m <b>Eva Vejmelková</b> Eva Vejmelková (Gar.)	Z	2	1P+1C	Z	s
126YMIS	<b>Managerial Information Systems</b> Lucie Brožová, Petr Kal ev <b>Petr Kal ev</b> Petr Kal ev (Gar.)	Z	2	2C	Z	s
134YDPK	<b>Additional Timber and Metal Structures</b> Jakub Dolejš <b>Jakub Dolejš</b> Jakub Dolejš (Gar.)	Z	2	1P+1C	L,Z	s

Characteristics of the courses of this group of Study Plan: Code=NR20230100\_3 Name=Stavitelství - p íprava, realizace a provoz staveb, PV p edm ty - technologie

122YTSD	Technology of Component Production	Z	2
122YTEE	Technology of Ecological Projects	Z	2
122YTRH	Technology of reconstructions of historical buildings	Z	2

123YTVM	Production technology of building materials Basic building materials, different types of the production technology, energy consumption of the production, storage and transport, safety at work.	Z	2
126YMIS	Managerial Information Systems Enterprise IS architecture, internal and external information sources to support managerial decision-making - Business Intelligence, information strategy of the enterprise, IS effectiveness, structure and function of managerial IS, multidimensional database and OLAP technology, procedure for building and implementing managerial IS, practical demonstration of Business Navigation System applications and the COGNOS system in construction companies, knowledge management and knowledge base to support strategic management, Competitive Intelligence.	Z	2
134YPDK	Additional Timber and Metal Structures Subject provides basic information regarding to design and application of supporting, working and industrial scaffolding systems. It is focused especially on design rules in accordance with European codes and on modelling of structures.	Z	2

Name of the block: Povinn volitelné p edm ty, doporu ení S3

Minimal number of credits of the block: 5

The role of the block: S3

Code of the group: NR20230100\_1

Name of the group: Stavitelství - p íprava, realizace a provoz staveb, PV p edm ty - dle bc. studia

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

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

Credits in the group: 5

Note on the group: volitelný předmět dle bc. studia

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
122ICPP	<b>Engineering Activities for Building Construction</b> <i>Tomáš Váchal Tomáš Váchal Tomáš Váchal (Gar.)</i>	Z,ZK	5	2P+2C	Z	S3
122RPSB	<b>Management of Administration, Operation and Maintenance of Buildings</b> <i>Pavel Neumann, Ond ej Štrup, Stanislav Smugala Ond ej Štrup Ond ej Štrup (Gar.)</i>	Z,ZK	5	2P+2C	Z	S3

**Characteristics of the courses of this group of Study Plan: Code=NR20230100\_1 Name=Stavitelství - p íprava, realizace a provoz staveb, PV p edm ty - dle bc. studia**

122ICPP	Engineering Activities for Building Construction Basic regulations, concepts according to legal regulations, flow diagram of the preparation and authorization of the contract Building Act - performance of public administration and spatial planning Building Act - building regulations Implementing legislation to the Building Act - design phase Implementing legislation to the Building Act - permit process Implementing legislation to the Construction Act - construction Roads Act - basic provisions and special use - implementation process Rights and obligations of the client, builder, contractual relationship in variants Rights and obligations of the designer, contractual relationship in variants Air Protection Act, Waste Act and Nature and Landscape Protection Act - permit process Law on the protection of agricultural land fund, law on forests and water law - permit process Act on State Monument Care and Act on Environmental Impact Assessment - permit process Civil Code - contract	Z,ZK	5
122RPSB	Management of Administration, Operation and Maintenance of Buildings	Z,ZK	5

### List of courses of this pass:

Code	Name of the course	Completion	Credits
122BOZF	Health and Safety Management in Construction Company and on Building Site The aim of the course is to acquaint students with the performance of the health and safety coordinator (hereinafter in the Health and Safety Department) in the preparatory and implementation phase of construction, operation on the construction site in the role of coordination of safe work and workplace. The main goal is to train the development of a health and safety plan for a specific building and its updating and problem solving on examples. Sm.92 / 57 / EHS, introduction of KOO OSH in the Czech Republic, nomenclature, content and compilation of OSH plan according to Act No. 309/2006 Coll. elaboration of individual types of project documentation, application in practice, view of OIP on KOO BOZP, BOZP plan - Excel; software related to the issue; statutory activities of KOO BOZP, photographs of good and bad practice from constructions Practical experience from tenders for the determination of KOO BOZP, remuneration of KOO BOZP and its insurance; conditions for Special Risks and Constructions. Within the exercise, the aim of the course is to develop a health and safety plan for a specific construction and understand the need to coordinate safe work on construction sites and identify all possible health and safety deficiencies and risks on a specific construction; check that all risks on the construction site have been described and assessed; to get acquainted with the activities of KOO BOZP on the construction site.	Z,ZK	7
122DPST	Diploma Thesis	Z	26
122ICPP	Engineering Activities for Building Construction Basic regulations, concepts according to legal regulations, flow diagram of the preparation and authorization of the contract Building Act - performance of public administration and spatial planning Building Act - building regulations Implementing legislation to the Building Act - design phase Implementing legislation to the Building Act - permit process Implementing legislation to the Construction Act - construction Roads Act - basic provisions and special use - implementation process Rights and obligations of the client, builder, contractual relationship in variants Rights and obligations of the designer, contractual relationship in variants Air Protection Act, Waste Act and Nature and Landscape Protection Act - permit process Law on the protection of agricultural land fund, law on forests and water law - permit process Act on State Monument Care and Act on Environmental Impact Assessment - permit process Civil Code - contract	Z,ZK	5
122KVAS	Quality in Construction	Z,ZK	7

122PRJL	<b>Project Design</b> Assessment of submitted project documentation (for building permits) and its possible additions, solution of the spatial, technological and time structure of the complex construction process of the event, including the processing of the inspection and test plan, environmental plan and health and safety plan, construction site equipment design, technological work procedure (production regulations) 2 of selected important processes, accompanying technical report with commentary on the solution.	KZ	5
122PRPV	<b>Use of Computers for Planing and Management of Projects</b>	Z,ZK	7
122ROPM	<b>Guided Professional Practice</b>	Z	4
122RPSB	<b>Management of Administration, Operation and Maintenance of Buildings</b>	Z,ZK	5
122SPTC	<b>Robot Control and Special Technology</b>	Z,ZK	4
122TEPR	<b>Construction Technology Design</b>	Z,ZK	5
122YTEE	<b>Technology of Ecological Projects</b>	Z	2
122YTRH	<b>Technology of reconstructions of historical buildings</b>	Z	2
122YTSD	<b>Technology of Component Production</b>	Z	2
123YTVM	<b>Production technology of building materials</b> Basic building materials, different types of the production technology, energy consumption of the production, storage and transport, safety at work.	Z	2
124PS4C	<b>Building Structures 4</b>	Z,ZK	4
125TTZB	<b>Technical and Technological Equipment of Buildings</b> The subject deals with systems of technical equipment of buildings - water supply, gas supply, sewage, heating, ventilation and cooling. Individual systems are described and their properties and methods of use are discussed. Important technological units found in buildings are also addressed in the lesson.	Z,ZK	4
126FRIN	<b>Financial Management, Capital Investment and Insurance</b> Financial strategies and objectives, financial analysis, sources of financing and choice of optimal financial structure, investment activity of the company, decision making about investments, cash-flow investment project management, financial risks and their elimination, fundamentals of insurance.	Z,ZK	4
126YMIS	<b>Managerial Information Systems</b> Enterprise IS architecture, internal and external information sources to support managerial decision-making - Business Intelligence, information strategy of the enterprise, IS effectiveness, structure and function of managerial IS, multidimensional database and OLAP technology, procedure for building and implementing managerial IS, practical demonstration of Business Navigation System applications and the COGNOS system in construction companies, knowledge management and knowledge base to support strategic management, Competitive Intelligence.	Z	2
128OVMT	<b>Operations Research and Mathematical Models in Technology</b> An introduction to optimization methodologies with the emphasis on linear optimization, stochastic modelling and multiple criteria optimization including algorithms and computations. Applications will be introduced as appropriate in seminars.	Z,ZK	4
134NKPS	<b>Design of structures during construction process</b> Deepening of knowledge in the field of steel and concrete structures with respect to the construction method. Advanced design of steel structures - lateral and torsional stability of beams, global analysis of structures, scaffold, technological structures; cable and membrane structures. Advanced design of concrete structure with respect to the technology during construction.	Z,ZK	5
134YDPK	<b>Additional Timber and Metal Structures</b> Subject provides basic information regarding to design and application of supporting, working and industrial scaffolding systems. It is focused especially on design rules in accordance with European codes and on modelling of structures.	Z	2
136TPPK	<b>Realization Technologies for Road Structures</b> The 136TPPK course is an extension course for students who have chosen to focus on transport structures within the specialization "Civil Engineering - preparation, erection and operation of buildings" or who want to deepen their knowledge in this area. The course in the field of technologies and technical solutions of road structures allows to obtain an extension of previously acquired knowledge and introduces students to other technologies of road construction. The student will be introduced to key technologies for asphalt pavements, CB pavements, paved pavements and bridge pavements.	Z,ZK	4
142PMRV	<b>Operation, Modernisation and Reconstruction of Water Structures</b>	Z,ZK	4
210DIIK	<b>Diagnostics of Engineering Structures</b> The course aims to introduce diagnostics of civil engineering structures, mechanical, thermal, hygric, chemical and others influences of genesis of failure of civil engineering structures, specifically on engineering structures (bridges, footbridges, halls etc.). During the course students will introduce with behavior of engineering structures, structural and material failures, testing devices for diagnostics and data evaluation.	Z,ZK	5

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