### Study plan

## Name of study plan: Civil Engineering

Faculty/Institute/Others:

Department:

Branch of study guaranteed by the department: Welcome page

Garantor of the study branch: Program of study: Civil Engineering Type of study: Follow-up master full-time

Required credits: 90 Elective courses credits: 0 Sum of credits in the plan: 90

Note on the plan: valid starting in 2023/24

Name of the block: Compulsory courses Minimal number of credits of the block: 42

The role of the block: Z

Code of the group: ND20230100

Name of the group: Civil Engineering, 1st semester

Requirement credits in the group: In this group you have to gain at least 21 credits

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

Credits in the group: 21 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
101MTST	Mathematical Statistics Martin Hála Martin Hála Martin Hála (Gar.)	Z,ZK	3	2P+1C	Z	Z
124BS04	Building Structures 4 Vladimír Ž ára Vladimír Ž ára (Gar.)	Z,ZK	4	2P+2C	Z	Z
132NAST	Numerical Analysis of Structures Jan Zeman, Tomáš Krej í <b>Jan Zeman</b> Jan Zeman (Gar.)	Z,ZK	5	2P+2C	Z	Z
133CM03	Concrete and Masonry Structures 3 Marek Foglar Marek Foglar Marek Foglar (Gar.)	Z,ZK	5	2P+2C	Z	Z
134ST02	Steel Structures 2 Ji í Mareš Ji í Mareš Ji í Mareš (Gar.)	Z,ZK	4	2P+2C	Z	Z

### Characteristics of the courses of this group of Study Plan: Code=ND20230100 Name=Civil Engineering, 1st semester

101MTST Mathematical Statistics	Z,ZK	3
Advanced methods of mathematical statistics, notions of probability, discrete and continuous random variables, multidimensional distributions and establishments.	timates of distribu	ition parameters.
Multidimensional regression and submodel testing. Different types of continuous distributions. Multidimensional distribution. Time series, especially	stationary time se	ries and their
study in time and frequency domain.		
124BS04 Building Structures 4	Z,ZK	4
The subject is focused on the complex design of load-bearing structures, their interaction with the surrounding environment. In the first part of the s	ubject, the attention	n is focused on
the issue of the mutual interaction of load-bearing structures and the negative interactions between load-bearing and non-load-bearing systems. The	e effects of non-fo	rce loads,
temperature and volume changes, properties of structural materials are discussed. The second part of the subject is focused on the design of load-	bearing structures	with regard to
the effects of wind, the effects of non-rigid support of walkable structures and the issue of expansion of non-load-bearing structures. The last part is	devoted to the sp	ecific action of
water and the protection of the building from its effects.		
132NAST Numerical Analysis of Structures	Z,ZK	5
Overview of direct stiffness method of structural mechanics. Weak solution of one-dimensional elasticity equations. Galerkin method, Gauss integra	tion, principle of th	e Finite Element
method. Steady state heat conduction in one dimension. Two-dimensional heat conduction problem, triangular finite elements. Two-dimensional elast	sticity problems. Co	onvergence of
FEM, error estimates.		
133CM03 Concrete and Masonry Structures 3	Z,ZK	5
Prestressed concrete structures, shell structures, prestressed cable structures, shear and torsion, load carrying capacity of bridges, design accordi	ng to older standa	rds and code
provisions		
134ST02 Steel Structures 2	Z,ZK	4

Code of the group: ND20230200

including pipelines, silos, cranes, masts and towers.

The course gives the basic information to steel structural design including detailing and advanced materials and ctructural solutions. The main focus is on the industrial structures

Name of the group: Civil Engineering, 2nd semester

Requirement credits in the group: In this group you have to gain at least 21 credits

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

Credits in the group: 21

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
132DS01	Dynamics of Structures Jaroslav Kruis Jaroslav Kruis (Gar.)	Z,ZK	5	2P+2C	L	Z
132EXAN	Experimental Analysis Tomáš Plachý Tomáš Plachý (Gar.)	KZ	3	1P+2C	L	Z
133CM04	Concrete Structures 4 Yuliia Khmurovska, Petr Štemberk Petr Štemberk (Gar.)	Z,ZK	5	2P+2C	L	Z
134TS02	Timber Structures 2 Karel Mikeš Jakub Dolejš Karel Mikeš (Gar.)	Z,ZK	4	2P+1C	L	Z
135FS02	Foundation of Structures 2 Jan Záleský Jan Záleský Jan Záleský (Gar.)	Z,ZK	4	2P+2C	L	Z

Characteristics of the courses of this group of Study Plan: Code=ND20230200 Name=Civil Engineering, 2nd semester

132DS01	Dynamics of Structures	Z,ZK	5
The course is devoted	to vibration of structures caused by various types of load.		•
132EXAN	Experimental Analysis	KZ	3
Experiments aimed a	monitoring the magnitude of climatic loads on building structures (wind, snow, temperature loads), diagnostics of building struc	tures, tests carrie	d out on physical
models of building str	uctures (laws of model similarity, simulation of earthquakes on shake tables, simulation of wind effects in wind tunnels, static lo	oad tests on physi	cal models),
monitoring of building	structures, static load tests (civil engineering structures, industrial structures, bridge structures), dynamic load tests and dynamic	informative tests	(civil engineering
structures, industrial	structures, bridge structures, footbridges, effects of technical seismicity, assessment of adverse effects of vibrations on the hun	nan body, assessr	nent of the effect
of vibrations of the str	ucture on installed technological equipment).		
133CM04	Concrete Structures 4	Z,ZK	5
The course is focused	l on the following areas: New approach to the design of bending, shear, torsion, punching Application of plastic theory in the co	oncrete design Co	mputer analysis
of concrete structures	Non-linear analysis of concrete structures Probabilistic design Advanced concrete structures		
134TS02	Timber Structures 2	Z,ZK	4
The course brings an	integrative approach to structural wood design that considers the design of the individual wood members in the context of the	complete wood s	ructure so that
all of the structural co	mponents and connectors work together in providing strength.		
135FS02	Foundation of Structures 2	Z,ZK	4
Advanced design app	roaches for selected types of foundation pits and footings, design based on soil - structure interaction.	•	•

Name of the block: Compulsory elective courses

Minimal number of credits of the block: 8

The role of the block: S

Code of the group: ND20230100\_2

Name of the group: Civil Engineering, Optional subjects, 1st semester

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 2 courses

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
102FTB	Thermomechanics Vit zslav Vydra Vit zslav Vydra (Gar.)	Z	2	2P	Z	S
124DSHB	Diagnosis and Surveying of Historical Buildings Eva Burgetová Eva Burgetová (Gar.)	Z	2	1P+1C	Z	S
124EOB1	Seminar on Energy-optimized Buildings 1 Jan Tywoniak Jan Tywoniak Jan Tywoniak (Gar.)	ZK	3	1P+1C	Z	S
124IBUD	Integrated Building Design Antonín Lupíšek Antonín Lupíšek (Gar.)	Z	2	2P	Z	S
132MMO	<b>Modern Methods of Optimization</b> Jan Zeman, Mat j Lepš <b>Jan Zeman</b> Mat j Lepš (Gar.)	Z	2	1P+1C	Z	S
133YBBD	Basis of Bridges Design Roman Lenner Roman Lenner (Gar.)	Z	2	1P+1C	Z	S
134FRST	Fire Resistance of Steel and Timber Structures Petr Kuklík, František Wald František Wald František Wald (Gar.)	Z	2	1P+1C	Z	S
134STB	Steel bridges Pavel Ryjá ek Pavel Ryjá ek (Gar.)	Z	2	1P+1C	Z	S

## Characteristics of the courses of this group of Study Plan: Code=ND20230100\_2 Name=Civil Engineering, Optional subjects, 1st

semester			
102FTB	Thermomechanics	Z	2
This course will conce	intrate on basic principles of transport of heat and mass (conduction, convection, radiation, heat pumps; transport of moist in b	building materials)	with practical
examples such as hea	at loss of a pipe, solar heating/cooling systems and heat loss thru a window (two plates of glass with a gas between). An excur	sion to a large so	lar-cooling
installation with a sola	r-powered heat pump is a part of the course.		
124DSHB	Diagnosis and Surveying of Historical Buildings	Z	2
Course sets out key c	onsideratons and implications which require structure assessment. The course provides an objective framework and methodic	al and systematic	approach to
surveying of historic b	uildings. (structural diagnosis, preliminary and comprehensive survey, visual inspection, site inspections, laboratory tests, inve	stigation kits, type	es of defects and
damages, symptoms,	manifestation, significance, criticality, reason for failures case studies)		
124EOB1	Seminar on Energy-optimized Buildings 1	ZK	3
Introduction in the the	ory and practice of the design of low-energy buildings of different categories. Lectures and workshops		•
124IBUD	Integrated Building Design	Z	2
The main objective of	the subject Integrated Building Design is to get an complex overview of the principles of integrated buildings design, life cycle a	ssessment of buil	dings, evaluation
of building performance	ce, green/sustainable certificaition systems and understand environmental, social and economic aspects of the built environmental	ent.	
132MMO	Modern Methods of Optimization	Z	2
The course is aimed a	t an overview of numerical optimization methods applicable not only in the Civil Engineering area. The emphasis is put more on the	ie introduction of a	riving principles,
however, practical app	lications in MATLAB environment are also conducted during exercises.		
133YBBD	Basis of Bridges Design	Z	2
The course Basis of E	ridge Design is focused on principal problems related to design of bridges - spatial arrangement and equipment of road and ra	ailway bridges, tyr	pes of bridge
structures and techno	logies of construction of concrete bridges.		
134FRST	Fire Resistance of Steel and Timber Structures	Z	2
The aim of this course	is to give students an understanding of the design methods of structures at accidental situations, fire and explosion. The cour	se is focussed on	design methods
involved in fire design:	prediction of fire scenario, evaluation of fire load, calculation of gas temperatures in the fire compartment and structural analys	is at elevated tem	perature. Special
attention is paid to fire	modelling when several design models is presented including nominal temperature curves, simple models and advanced mo	dels.	
134STB	Steel bridges	Z	2
The subject describes	the basics of the design of steel and composite bridges.	•	•

Code of the group: ND20230200\_2

Name of the group: Civil Engineering, Optional subjects, 2nd semester

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 2 courses

Credits in the group: 4

Note on the group.

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Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
101NMT	Numerical Methods Petr Mayer Petr Mayer (Gar.)	Z	2	1P+1C	L	S
124BRA	BIM - Revit Architecture CE Pavel Chour, Renáta Ho ánková Pavel Chour Pavel Chour (Gar.)	Z	2	1P+1C	L	S
125TIE	Energy and Indoor Environment Karel Kabele, Zuzana Veverková, Pavla Dvo áková Karel Kabele Karel Kabele (Gar.)	ZK	2	2P	L	S
125YATH	Applied Thermomechanics Daniel Adamovský Daniel Adamovský (Gar.)	Z	2	1P+1C	Z,L	S
128PMDB	Process Modeling and Data Formats for BIM Ji í Kaiser Ji í Kaiser (Gar.)	Z,ZK	4	1P+2C	Z,L	S
132MAC	Microscopy and Phase Analysis of Construction Mat. Lubomír Kopecký Lubomír Kopecký Lubomír Kopecký (Gar.)	Z	2	1P+1C	Z,L	S
133CASD	Computer Aided Structural Design Josef Novák Josef Novák Josef Novák (Gar.)	Z	2	1P+1C	Z,L	S
133YCB	Concrete Bridges Roman Lenner Roman Lenner (Gar.)	Z,ZK	4	2P+2C	L	S
134GSTR	Glass Structures Martina Eliášová Martina Eliášová (Gar.)	Z	2	1P+1C	L	S
134SAL	Stainless Steel and Aluminium Structures Michal Jandera Michal Jandera (Gar.)	Z	2	1P+1C	L	S
135CMGE	Computing and Computer Modelling in Geotechnical Eng.  Jan Salák, Matouš Hilar, Alena Zemanová Matouš Hilar	Z	2	1P+1C	L	S

#### Characteristics of the courses of this group of Study Plan: Code=ND20230200\_2 Name=Civil Engineering, Optional subjects, 2nd semester

101NMT	Numerical Methods	Z	2
The introduction to the I	asic numerical methods. Great attention is paid to methods for solving systems of linear equations. Further we will study met	hods of approxima	ation of functions
and numerical quadratu	re. Finally, methods for solving ordinary and partial differential equations, will be studied.		
124BRA	BIM - Revit Architecture CE	Z	2

The seminar introduces the basic principles of building design as an information model. Teaching takes place on the Autodesk platform. Teaching is focused on the interpretation of the principle of modeling building elements, their relationships and properties. During the exercise, students will create a simple BIM model, they will learn to work with other SW - data export and import, they will learn basic principles of creating 2D documentation, scheduling, 3D presentation - render, animation.

125TIE | Energy and Indoor Environment | ZK | 2 |
The course introduces students to the theoretical knowledge of aspects of indoor environmental quality (IEQ) in relation to the energy performance of buildings. During the lectures,

the basic principles of technical systems of heating, ventilation, air conditioning, water management and electricity supply and the different components of the indoor environment are presented and described. The lectures are complemented by seminars where students learn about the development of the HVAC concept and have a hands-on experience with IEQ measurement and evaluation.

125YATH Applied Thermomechanics

Z |

The course contains three basic groups, in which the student is gradually introduced to selected chapters on moist air, vapour thermodynamics and heat sharing. The aim of each chapter is to introduce students to the principles of equipment common in heating, ventilation and cooling systems that they will encounter in practice. The chapter on humid air will discuss typical and lesser used processes occurring in air handling units. The vapor thermodynamics section focuses on the familiar compressor and absorption chillers and heat pumps. The final chapter will explain the processes and principles related to heat exchangers.

128PMDB Process Modeling and Data Formats for BIM

Z,ZK

4

Fundamental terms from fields of information management, business process management, and BIM. General business process modeling using Business Process Model and Notation (BPMN) and Unified Modeling Language (UML). Advanced Business Process models - collaboration of processes and choreography diagrams, Adaptation of business process modeling languages for modeling of BIM processes in BIM Execution Plan (BEP) - using BPMN for modeling of BIM overview map and detailed BIM uses map, process modeling for Information Delivery Manual (IDM). Other uses of process modeling methods in civil engineering. Basics of data formats for BIM - IFC/STEP, Express modeling language.

132MAC Microscopy and Phase Analysis of Construction Mat.

7

2

Fundamentals of transmission and reflexion optical microscopy. Polarization of light and its application in the phase study of materials. The sample preparation for microscopical research. Fundamentals of scannig electron microscopy and microanalysis. X-ray phase diffraction and structural analysis. The fundamentals of XRD analysis and its application in the structural and phase exploration of building materials.

133CASD Computer Aided Structural Design

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2

Computer-Aided Structural Design has been implemented as an optional compulsory course which provides students to gain knowledge in a computer-aided design and analysis of reinforced concrete structures. The objective of the course is to demonstrate the practical use of selected FEM software for the limit state design of various concrete structures. Namely, the focus is on computational models, reinforcement design, numerical modelling, crack control, deformation control and internal forces distribution.

133YCB Concrete Bridges

7K

1

The course of Concrete Bridges is focused on design and construction of this type of bridge structures. Lectures are devoted to spatial arrangement and equipment of road and railway bridges, bridge substructure, effects and realization of prestressing, types of concrete bridge structures and technologies of their construction. Seminars are split into interesting issues and provide an opportunity to apply the learnt principles.

134GSTR Glass Structures

2

The course is intending to introduce the students the field of structural applications of glass and to give them some specific skills for calculation and detailing of for basic glass structures: panes beams and fins, columns and walls, point-supported glass, as well as for glazing systems such as glass facades, canopies and roofs, stairs and floors. On this purpose the properties of glass as structural material will be presented in comparison with other basic building materials, together with selected examples of glass/glazing applications. Design details and connecting technology, relevant technical regulations, specification and current methods applied in design will be described. Worked examples will accompany the lectures for better understanding, and design project will help to fix specific knowledge.

134SAL Stainless Steel and Aluminium Structures

2

The course covers two parts, design of aluminium and stainless steel structures. The first part covers evolution of stainless steel materials/structures and examples of realized structures. Stainless steels suitable for structures are described in a detail, including their properties. Dissimilarities in assessments of members under common loadings with respect to low-carbon steels is described for both ultimate and serviceability limit states. In the end the possibilities concerning connections of stainless steel members, erection and installation of stainless steel members are described. In the second part of the subject, the same topics are covered for aluminium structures. Welding and heat-affected zones are discussed in detail in terms of weld design, section design and local welds effect in members.

135CMGE Computing and Computer Modelling in Geotechnical Eng.

Z

2

Students get familiar with the Finite Element Method, the currently dominant tool for numerical modeling in geotechnics. Emphasis is placed on introducing the basic principles of the Finite Element Method and their subsequent application to selected problems of Geotechnical Engineering. The course summarises the types of finite elements used in geotechnical applications, material models suitable for the description of ground deformation, and selected specifics associated with numerical modeling in geotechnics. This knowledge is further applied in the modelling of foundation, embedded walls, and stability problems.

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

Minimal number of credits of the block: 40

The role of the block: S1

Code of the group: ND20230100\_1

Name of the group: Civil Engineering, Project, 1st semester

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:

Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their Code Completion Credits Scope Semester Role members) Tutors, authors and guarantors (gar.) Structural Design Project 3 122SDP3 ΚZ 5 4C Ζ S1 Alexander Ilkström Kravcov, Vja eslav Usmanov Structural Design Project 3 Ζ 124SDP3 ΚZ 5 4C Tomáš Vlach Tomáš Vlach Tomáš Vlach (Gar.) Structural Design Project 3 132SDP3 ΚZ 5 4C Ζ S1 Jan Zeman Structural Design Project 3 Ζ 133SDP3 ΚZ 5 4C S1 Iva Broukalová Structural Design Project 3 Ζ 134SDP3 K7 5 4C S1 Michal Jandera Michal Jandera (Gar.)

135SDP3	Structural Design Project 3 Jan Salák (Gar.)	KZ	5	4C	Z	S1
haracteristics of t	he courses of this group of Study Plan: Code=ND20230100_1	Name=Civil En	gineering	յ, Projec	t, 1st seme	ster
122SDP3 S	Structural Design Project 3				KZ	5
	ich to practic design, analysis and optimalization of multi-storey or long-span building			-		
- ·	design of load-bearing system alternatives including foundations, preliminary bearing					
<del>-</del>	chosen version, calculation, technical report and drawings. Check of bearing and nor	n-bearing structures	interaction a	ind assemb	ly techniques. F	Public
presentation. 124SDP3	Structural Decima Project 2			1	KZ	5
	Structural Design Project 3 provides a complex approach to practice design, analysis and optimalization of advan-	ced multistorey or lo	na enan huil	ı	I	
-	on a specific part of the building, construction. General analysis of load, functional and	-		-		
•	ents dimensions calculation, choice of most suitable version. Closer focus on the proble		_			
, ,	view of building physics - conducted heat and humidity, detailed static action of select	•				
preferences and focus.						
132SDP3 S	Structural Design Project 3				KZ	5
Focus on complex approa	ich to practic design, analysis and optimalization of multi-storey or long-span building	structures, or their re	econstruction	n. Analysis	of load, function	nal and
- ·	, design of load-bearing system alternatives including foundations, preliminary bearing					
	chosen version, calculation, technical report and drawings. Check of bearing and nor	n-bearing structures	interaction a	ind assemb	ly techniques. F	Public
oresentation.	2				147	
· ·	Structural Design Project 3			1	KZ	5
	concrete and masonry structures. The assignment can be: elaboration of the structure I literature retrieval, the numerical analysis of the selected element or part of the struc	-		-		
=	tudents on one assignments is also possible. Consultation with participating departme				=	
	/pe of assignment and the decision of the leading teacher.	and result and result		a.o., .o. a		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
	Structural Design Project 3				KZ	5
	ad bearing building structure according to external requirements in relation to interaction	on of load bearing ar	nd final com	ı		-
s assigned by the semina	ar leader.	_				
135SDP3 S	Structural Design Project 3				KZ	5
Design, static calculation	and drawing documentation of the building substructure			'	'	
•	edits in the group: In this group you have to gain a purses in the group: In this group you have to comp			rse		
Credits in the gr	ourses in the group: In this group you have to comproup: 5			rse		
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Credits in the gro Note on the gro Code	ourses in the group: In this group you have to comproup: 5  up:  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.)  Structural Design Project 4  Alexander Ilkström Kravcov Alexander Ilkström Kravcov (Gar.)  Structural Design Project 4	Completion	t 1 coul	Scope		
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Credits in the gro Note on the gro Code  122SDP4  124SDP4  132SDP4  133SDP4  134SDP4	Purses in the group: In this group you have to comproup: 5  Up:  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.)  Structural Design Project 4  Alexander Ilkström Kravcov Alexander Ilkström Kravcov (Gar.)  Structural Design Project 4  Eva Burgetová, Tomáš Vlach Tomáš Vlach Eva Burgetová (Gar.)  Structural Design Project 4  Jan Zeman, Tomáš Janda  Structural Design Project 4  Structural Design Project 4  Structural Design Project 4  Michal Jandera Michal Jandera (Gar.)	Completion  KZ  KZ  KZ  KZ  KZ	Credits 5 5 5 5 5 5 5	4C 4C 4C 4C 4C	L L L	\$1 \$1 \$1 \$1 \$1
Credits in the gro Note on the gro Code  122SDP4  124SDP4  132SDP4  133SDP4  134SDP4	Purses in the group: In this group you have to comproup: 5  up:  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.)  Structural Design Project 4  Alexander Ilkström Kravcov Alexander Ilkström Kravcov (Gar.)  Structural Design Project 4  Eva Burgetová, Tomáš Vlach Tomáš Vlach Eva Burgetová (Gar.)  Structural Design Project 4  Jan Zeman, Tomáš Janda  Structural Design Project 4  Structural Design Project 4	Completion  KZ  KZ  KZ  KZ	Credits 5 5 5 5	4C 4C 4C 4C	L L L	\$1 \$1 \$1 \$1
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Credits in the grollote on the	Purses in the group: In this group you have to comproup: 5  up:  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.)  Structural Design Project 4  Alexander Ilkström Kravcov Alexander Ilkström Kravcov (Gar.)  Structural Design Project 4  Eva Burgetová, Tomáš Vlach Tomáš Vlach Eva Burgetová (Gar.)  Structural Design Project 4  Jan Zeman, Tomáš Janda  Structural Design Project 4  Structural Design Project 4  Michal Jandera Michal Jandera (Gar.)  Structural Design Project 4  Jan Salák Jan Salák (Gar.)  he courses of this group of Study Plan: Code=ND20230200_1	Completion  KZ  KZ  KZ  KZ  KZ  KZ  KZ  KZ  KZ  K	Credits 5 5 5 5 5 gineering	4C 4C 4C 4C 4C 4C 4C	L L L L t, 2nd seme	\$1 \$1 \$1 \$1 \$1 \$1 \$1
Credits in the grollote on the	Purses in the group: In this group you have to comproup: 5  up:  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.)  Structural Design Project 4  Alexander Ilkström Kravcov Alexander Ilkström Kravcov (Gar.)  Structural Design Project 4  Eva Burgetová, Tomáš Vlach Tomáš Vlach Eva Burgetová (Gar.)  Structural Design Project 4  Jan Zeman, Tomáš Janda  Structural Design Project 4  Structural Design Project 4  Michal Jandera Michal Jandera (Gar.)  Structural Design Project 4  Jan Salák Jan Salák (Gar.)  he courses of this group of Study Plan: Code=ND20230200_1  Structural Design, analysis and optimalization of multi-storey or long-span building structural design, analysis and optimalization of multi-storey or long-span building structural design, analysis and optimalization of multi-storey or long-span building structural design, analysis and optimalization of multi-storey or long-span building structural design, analysis and optimalization of multi-storey or long-span building structural design, analysis and optimalization of multi-storey or long-span building structural design, analysis and optimalization of multi-storey or long-span building structural design.	Completion  KZ  KZ  KZ  KZ  KZ  KZ  KZ  KZ  KZ  K	Credits 5 5 5 5 construction	Scope  4C  4C  4C  4C  4C  4C  ac  4C  4C  Ac  4C	L L L L t, 2nd seme	\$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1
Credits in the grollote on the	Purses in the group: In this group you have to comproup: 5  up:  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.)  Structural Design Project 4  Alexander Ilkström Kravcov Alexander Ilkström Kravcov (Gar.)  Structural Design Project 4  Eva Burgetová, Tomáš Vlach Tomáš Vlach Eva Burgetová (Gar.)  Structural Design Project 4  Structural Design Project 4  Structural Design Project 4  Michal Jandera Michal Jandera (Gar.)  Structural Design Project 4  Jan Salák Jan Salák (Gar.)  Structural Design Project 4  Jan Salák Jan Salák (Gar.)  Structural Design Project 4  Jan Salák Jan Salák (Gar.)	Completion  KZ  KZ  KZ  KZ  KZ  KZ  KZ  KZ  KS  KZ  KZ	Credits  5 5 5 5 constructions calculations	Scope  4C 4C 4C 4C 4C 4C ac, Projec Analysis on, choice o	L L L L t, 2nd seme	S1 S1 S1 S1 S1 S1 s1 and version.
Credits in the grollote on the	Purses in the group: In this group you have to comproup: 5  up:  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.)  Structural Design Project 4  Alexander Ilkström Kravcov Alexander Ilkström Kravcov (Gar.)  Structural Design Project 4  Eva Burgetová, Tomáš Vlach Tomáš Vlach Eva Burgetová (Gar.)  Structural Design Project 4  Jan Zeman, Tomáš Janda  Structural Design Project 4  Structural Design Project 4  Michal Jandera Michal Jandera (Gar.)  Structural Design Project 4  Jan Salák Jan Salák (Gar.)  he courses of this group of Study Plan: Code=ND20230200_1  Structural Design, analysis and optimalization of multi-storey or long-span building structural design, analysis and optimalization of multi-storey or long-span building structural design, analysis and optimalization of multi-storey or long-span building structural design, analysis and optimalization of multi-storey or long-span building structural design, analysis and optimalization of multi-storey or long-span building structural design, analysis and optimalization of multi-storey or long-span building structural design, analysis and optimalization of multi-storey or long-span building structural design.	Completion  KZ  KZ  KZ  KZ  KZ  KZ  KZ  KZ  KS  KZ  KZ	Credits  5 5 5 5 constructions calculations	Scope  4C  4C  4C  4C  4C  4C  accuracy and a second and	L L L L t, 2nd seme	S1 S1 S1 S1 S1 S1 s1 and version.
Credits in the grollote on the	Purses in the group: In this group you have to comproup: 5  Up:  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.)  Structural Design Project 4 Alexander Ilkström Kravcov Alexander Ilkström Kravcov (Gar.)  Structural Design Project 4 Eva Burgetová, Tomáš Vlach Tomáš Vlach Eva Burgetová (Gar.)  Structural Design Project 4 Michal Jandera Michal Jandera (Gar.)  Structural Design Project 4 Jan Salák Jan Salák (Gar.)  he courses of this group of Study Plan: Code=ND20230200_1 Structural Design Project 4 Ich to practic design, analysis and optimalization of multi-storey or long-span building in design of load-bearing system alternatives including foundations, preliminary bearing in chosen version, calculation, technical report and drawings. Check of bearing and nor	Completion  KZ  KZ  KZ  KZ  KZ  KZ  KZ  KZ  KS  KZ  KZ	Credits  5 5 5 5 constructions calculations	Scope  4C  4C  4C  4C  4C  4C  and Analysis on, choice on assemble and	L L L L t, 2nd seme KZ of load, functior f most suitable ly techniques. F	S1 S1 S1 S1 S1 S1 ester 5 nal and version. Public
Credits in the grover Note on the grover Code  122SDP4 124SDP4 132SDP4 133SDP4 134SDP4 135SDP4 Characteristics of the state of the stat	Purses in the group: In this group you have to comproup: 5  up:  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.)  Structural Design Project 4  Alexander Ilkström Kravcov Alexander Ilkström Kravcov (Gar.)  Structural Design Project 4  Eva Burgetová, Tomáš Vlach Tomáš Vlach Eva Burgetová (Gar.)  Structural Design Project 4  Jan Zeman, Tomáš Janda  Structural Design Project 4  Structural Design Project 4  Michal Jandera Michal Jandera (Gar.)  Structural Design Project 4  Jan Salák Jan Salák (Gar.)  Structural Design Project 4  Jan Salák Jan Salák (Gar.)  Structural Design Project 4  Jan Salák Jan Salák (Gar.)  Structural Design Project 4  John to practic design, analysis and optimalization of multi-storey or long-span building of design of load-bearing system alternatives including foundations, preliminary bearing inchosen version, calculation, technical report and drawings. Check of bearing and nor Structural Design Project 4	Completion  KZ  KZ  KZ  KZ  KZ  KZ  KZ  KZ  KZ  K	Credits  5 5 5 5 construction as calculation interaction as	Scope  4C  4C  4C  4C  4C  4C  4C  and Analysis on, choice of ond assemble of the control of the	L L L L t, 2nd seme KZ of load, functior f most suitable ly techniques. F	S1 S1 S1 S1 S1 S1 S1 Pester 5 nal and version. Public
Credits in the grollote on the	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.)  Structural Design Project 4 Alexander Ilkström Kravcov Alexander Ilkström Kravcov (Gar.)  Structural Design Project 4 Eva Burgetová, Tomáš Vlach Tomáš Vlach Eva Burgetová (Gar.)  Structural Design Project 4 Jan Zeman, Tomáš Janda  Structural Design Project 4 Structural Design Project 4 Michal Jandera Michal Jandera (Gar.)  Structural Design Project 4 Jan Salák Jan Salák (Gar.)  Structural Design Project 4 Jan Salák Jan Salák (Gar.)  Structural Design Project 4 Jan Salák Jan Salák (Gar.)  Structural Design Project 4 Jan Salák Jan Salák (Gar.)  Structural Design Project 4 Jan Salák Jan Salák (Gar.)  Structural Design Project 4 Jan Salák Jan Salák (Gar.)  Structural Design Project 4 Jan Salák Jan Salák (Gar.)  Structural Design Project 4 Jan Salák Jan Salák (Gar.)	Completion  KZ  KZ  KZ  KZ  KZ  KZ  KZ  KZ  KZ  K	Credits  5 5 5 5 5 construction as calculation interaction as all project re-	Scope  4C 4C 4C 4C 4C 4C and AC 4C	L L L L L L L L L L L L L L L L L L L	S1 Storial and version. Public
Credits in the grollote on the	Purses in the group: In this group you have to comproup: 5  up:  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.)  Structural Design Project 4  Alexander Ilkström Kravcov Alexander Ilkström Kravcov (Gar.)  Structural Design Project 4  Eva Burgetová, Tomáš Vlach Tomáš Vlach Eva Burgetová (Gar.)  Structural Design Project 4  Jan Zeman, Tomáš Janda  Structural Design Project 4  Structural Design Project 4  Michal Jandera Michal Jandera (Gar.)  Structural Design Project 4  Jan Salák Jan Salák (Gar.)  Structural Design Project 4  Jan Salák Jan Salák (Gar.)  Structural Design Project 4  Jan Salák Jan Salák (Gar.)  Structural Design Project 4  John to practic design, analysis and optimalization of multi-storey or long-span building of design of load-bearing system alternatives including foundations, preliminary bearing inchosen version, calculation, technical report and drawings. Check of bearing and nor Structural Design Project 4	Completion  KZ  KZ  KZ  KZ  KZ  KZ  KZ  KZ  KZ  K	Credits  5 5 5 5 5 construction all project reconstruction all project reconstruction	Scope  4C	L L L L t, 2nd seme KZ of load, function f most suitable ly techniques. F KZ , then focus on a erical modeling	S1 S
Credits in the grollote on the	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.)  Structural Design Project 4 Alexander Ilkström Kravcov Alexander Ilkström Kravcov (Gar.)  Structural Design Project 4 Eva Burgetová, Tomáš Vlach Tomáš Vlach Eva Burgetová (Gar.)  Structural Design Project 4 Jan Zeman, Tomáš Janda  Structural Design Project 4  Structural Design Project 4 Michal Jandera Michal Jandera (Gar.)  Structural Design Project 4 Jan Salák Jan Salák (Gar.)  he courses of this group of Study Plan: Code=ND20230200_1 Structural Design Project 4 Ich to practic design, analysis and optimalization of multi-storey or long-span building of design of load-bearing system alternatives including foundations, preliminary bearing in chosen version, calculation, technical report and drawings. Check of bearing and nor structural Design Project 4 is closer focus on the problematic and difficult part of the construction. In the first half of from the point of view of building physics - conducted heat and humidity, detailed static from the point of view of building physics - conducted heat and humidity, detailed static	Completion  KZ  KZ  KZ  KZ  KZ  KZ  KZ  KZ  KZ  K	Credits  5 5 5 5 5 construction all project reconstruction all project reconstruction	Scope  4C	L L L L t, 2nd seme KZ of load, function f most suitable ly techniques. F KZ , then focus on a erical modeling	S1 S
Credits in the grolote on the grolote on the grolote on the grolote 122SDP4 124SDP4 133SDP4 134SDP4 135SDP4 15 Focus on complex approaechnologic requirements, Detailed statical design of presentation. 124SDP4 15 The subject of the course idetails, detailed analysis for the student's preference aboratory work. It is possi	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.)  Structural Design Project 4 Alexander Ilkström Kravcov Alexander Ilkström Kravcov (Gar.)  Structural Design Project 4 Eva Burgetová, Tomáš Vlach Tomáš Vlach Eva Burgetová (Gar.)  Structural Design Project 4 Jan Zeman, Tomáš Janda  Structural Design Project 4 Structural Design Project 4 Michal Jandera Michal Jandera (Gar.)  Structural Design Project 4 Jan Salák Jan Salák (Gar.)  Structural Design Project 4 Jan Salák Jan Salák (Gar.)  Structural Design Project 4 Ich to practic design, analysis and optimalization of multi-storey or long-span building is chosen version, calculation, technical report and drawings. Check of bearing and nor Structural Design Project 4 Ich to practic design, analysis and optimalization of multi-storey or long-span building is chosen version, calculation, technical report and drawings. Check of bearing and nor Structural Design Project 4 Is closer focus on the problematic and difficult part of the construction. In the first half of the point of view of building physics - conducted heat and humidity, detailed static and focus. By prior arrangement, it is also possible to experimentally verify selected.	Completion  KZ  KZ  KZ  KZ  KZ  KZ  KZ  KZ  KZ  K	Credits  5 5 5 5 5 construction all project reconstruction all project reconstruction	Scope  4C	L L L L t, 2nd seme KZ of load, function f most suitable ly techniques. F KZ , then focus on a erical modeling	S1 S

Detailed statical design of chosen version, calculation, technical report and drawings. Check of bearing and non-bearing structures interaction and assembly techniques. Public

presentation.

133SDP4	Structural Design Project 4	KZ	5
The subject is focused of	on concrete and masonry structures. The assignment can be: elaboration of the structural design documentation, the analysi	s of the given prob	olem requiring
subject matter search a	nd literature retrieval, the numerical analysis of the selected element or part of the structure, the preparation, execution and	evaluation of expe	riments, etc.
Collaboration of several	students on one assignments is also possible. Consultation with participating departments K124 and K135 is not mandatory	for all students. T	he extent of
outputs depends on the	type of assignment and the decision of the leading teacher.		
134SDP4	Structural Design Project 4	KZ	5
Design of steel / timber	oad bearing building structure according to external requirements in relation to interaction of load bearing and final completic	on structural elem	ents. The project
is assigned by the semi	nar leader.		
135SDP4	Structural Design Project 4	KZ	5
Design, static calculation	n and drawing documentation of the building substructure	'	

Code of the group: ND20230300

Name of the group: Civil Engineering, Diploma Project

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 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, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
122DPP	Diploma Project en k Jarský, Pavel Svoboda, Mária Párová en k Jarský (Gar.)	Z	30	24C	z	S1
123DPP	Diploma Project Michal Jandera (Gar.)	Z	30	24C	Z	S1
124DPP	Diploma Project Tomáš Vlach, Pavel Kopecký, Malila Noori, Tomáš ejka, František Kulhánek Tomáš Vlach František Kulhánek (Gar.)	Z	30	24C	L,Z	S1
132DPP	Diploma Project Jan Zeman, Milan Jirásek, Bo ek Patzák, Michal Šejnoha, Pavel Kuklík	Z	30	24C	Z	S1
133DPP	Diploma Project Michaela Frantová Lukáš Vráblík (Gar.)	Z	30	24C	Z	S1
134DPP	Diploma Project Michal Jandera Michal Jandera (Gar.)	Z	30	24C	Z	S1
135DPP	Diploma Project  Jan Salák	Z	30	24C	Z	S1
210DPP	Diploma Project	Z	30	24C	Z	S1
220DPP	Diploma Project Ji í Svoboda, Radek Vaší ek Radek Vaší ek Ji í Svoboda (Gar.)	Z	30	24C	Z	S1

122DPP	Diploma Project	Z	30
In this thesis, the st	tudent deals with the theme of preparation, construction and operation of buildings. How to solve problems of operating practic	es and areas of dev	elopment and
research. It contain	s a part of text, drawing and possibly documentation. At the end of the work, the student picks up his own contribution to the gi	iven topic.	
123DPP	Diploma Project	Z	30
In accordance with	the thesis proposal		
124DPP	Diploma Project	Z	30
The topics of diplon	ma theses are based on the needs of practice or the scientific research activity of the department, the scope and difficulty corre	esponds to the stud	ent's knowledge
acquired during the	e master's studies. The supervisor of the thesis can designate additional consultants to the student.		
132DPP	Diploma Project	Z	30
-	the final thesis is always individual based on the agreement of the teacher and the student. The vast majority of assignments a	are connected with t	he scientific and
The assignment of			
The assignment of	the final thesis is always individual based on the agreement of the teacher and the student. The vast majority of assignments a of the respective employee. The output of the solution may be a brief research study of the given problem, experimental activity		
The assignment of research activities of	the final thesis is always individual based on the agreement of the teacher and the student. The vast majority of assignments a of the respective employee. The output of the solution may be a brief research study of the given problem, experimental activity		
The assignment of research activities of the respective as	the final thesis is always individual based on the agreement of the teacher and the student. The vast majority of assignments a of the respective employee. The output of the solution may be a brief research study of the given problem, experimental activity assignment.	y, programming and	others according
The assignment of research activities of to the respective as 133DPP	the final thesis is always individual based on the agreement of the teacher and the student. The vast majority of assignments a of the respective employee. The output of the solution may be a brief research study of the given problem, experimental activity assignment.	y, programming and	others according
The assignment of research activities of to the respective as 133DPP Master's thesis.	the final thesis is always individual based on the agreement of the teacher and the student. The vast majority of assignments a of the respective employee. The output of the solution may be a brief research study of the given problem, experimental activity ssignment.  Diploma Project	y, programming and	30
The assignment of research activities of to the respective as 133DPP Master's thesis. 134DPP Design of steel / tim	the final thesis is always individual based on the agreement of the teacher and the student. The vast majority of assignments a of the respective employee. The output of the solution may be a brief research study of the given problem, experimental activity assignment.  Diploma Project  Diploma Project	y, programming and  Z  Z  letion structural eler	30
The assignment of research activities of to the respective as 133DPP Master's thesis. 134DPP Design of steel / tim	the final thesis is always individual based on the agreement of the teacher and the student. The vast majority of assignments a of the respective employee. The output of the solution may be a brief research study of the given problem, experimental activity ssignment.  Diploma Project  Diploma Project  Diploma Project  Diploma Project  Diploma Project	y, programming and  Z  Z  letion structural eler	30
The assignment of research activities of to the respective as 133DPP Master's thesis. 134DPP Design of steel / timfocused on research 135DPP	the final thesis is always individual based on the agreement of the teacher and the student. The vast majority of assignments a of the respective employee. The output of the solution may be a brief research study of the given problem, experimental activity assignment.  Diploma Project	, programming and  Z  Z  letion structural elerually.	30 30 nents. A study
The assignment of research activities of to the respective as 133DPP Master's thesis. 134DPP Design of steel / timfocused on research 135DPP In the diploma thes	the final thesis is always individual based on the agreement of the teacher and the student. The vast majority of assignments a of the respective employee. The output of the solution may be a brief research study of the given problem, experimental activity assignment.  Diploma Project	, programming and  Z  letion structural eler ually.  Z  for example, problem	30 30 30 30 nents. A study 30 ns related to the
The assignment of research activities of to the respective as 133DPP Master's thesis. 134DPP Design of steel / timfocused on research 135DPP In the diploma thes design and construits.	the final thesis is always individual based on the agreement of the teacher and the student. The vast majority of assignments a of the respective employee. The output of the solution may be a brief research study of the given problem, experimental activity assignment.  Diploma Project  Diploma Project superisor individual bearing structures may be also the topic of the the project. The project is assigned by a final project superisor individual Diploma Project  Diploma Project  Diploma Project  Diploma Project  Diploma Project	, programming and  Z  letion structural eler ually.  Z  for example, problem	30 30 30 30 nents. A study 30 ns related to the
The assignment of research activities of to the respective as 133DPP Master's thesis. 134DPP Design of steel / timfocused on research 135DPP In the diploma thes design and construits.	the final thesis is always individual based on the agreement of the teacher and the student. The vast majority of assignments a of the respective employee. The output of the solution may be a brief research study of the given problem, experimental activity assignment.  Diploma Project  Diploma Project is assigned by a final project superisor individual Diploma Project  Diploma Project  Sis, the student deals with a topic chosen by the department from those regularly announced by the department. It addresses, foction of geotechnical structures, civil engineering structures, special foundations for industrial, transport, housing and water magnetic from the student deals with a structures, civil engineering structures, special foundations for industrial, transport, housing and water magnetic from the student deals with a structures, civil engineering structures, special foundations for industrial, transport, housing and water magnetic from the student deals with a structure of the structures, special foundations for industrial, transport, housing and water magnetic from the structure of the struct	, programming and  Z  letion structural eler ually.  Z  for example, problem	30 30 30 30 nents. A study 30 ns related to the
The assignment of research activities of to the respective as 133DPP Master's thesis. 134DPP Design of steel / time focused on research 135DPP In the diploma thesing design and constructures in complete.	the final thesis is always individual based on the agreement of the teacher and the student. The vast majority of assignments a of the respective employee. The output of the solution may be a brief research study of the given problem, experimental activity assignment.  Diploma Project  Diploma Project structures may be also the topic of the the project. The project is assigned by a final project superisor individed Diploma Project  Diploma Proj	z    Z  letion structural elerually.   Z for example, problenanagement structure	30 30 30 ments. A study 30 ns related to the ss, earth and roc

# List of courses of this pass:

Code	Name of the course	Completion	Credits
101MTST	Mathematical Statistics	Z,ZK	3
	s of mathematical statistics, notions of probability, discrete and continuous random variables, multidimensional distributions and estimal regression and submodel testing. Different types of continuous distributions. Multidimensional distribution. Time series, especially statistics of the study in time and frequency domain.		
101NMT	Numerical Methods	Z	2
	the basic numerical methods. Great attention is paid to methods for solving systems of linear equations. Further we will study method and numerical quadrature. Finally, methods for solving ordinary and partial differential equations, will be studied.		l
102FTB	Thermomechanics	Z	2
This course will o	oncentrate on basic principles of transport of heat and mass (conduction, convection, radiation, heat pumps; transport of moist in bui as heat loss of a pipe, solar heating/cooling systems and heat loss thru a window (two plates of glass with a gas between). An excursion installation with a solar-powered heat pump is a part of the course.	-	•
122DPP	Diploma Project	Z	30
	student deals with the theme of preparation, construction and operation of buildings. How to solve problems of operating practices a arch. It contains a part of text, drawing and possibly documentation. At the end of the work, the student picks up his own contribution to		oment and
122SDP3	Structural Design Project 3	KZ	5
technologic requ	ex approach to practic design, analysis and optimalization of multi-storey or long-span building structures, or their reconstruction. Ana irements, design of load-bearing system alternatives including foundations, preliminary bearing elements dimensions calculation, cho il design of chosen version, calculation, technical report and drawings. Check of bearing and non-bearing structures interaction and a presentation.	pice of most suitabl	e version.
122SDP4	Structural Design Project 4	KZ	5
_	ex approach to practic design, analysis and optimalization of multi-storey or long-span building structures, or their reconstruction. Ana		
technologic requ	irements, design of load-bearing system alternatives including foundations, preliminary bearing elements dimensions calculation, choosen version, calculation, technical report and drawings. Check of bearing and non-bearing structures interaction and a presentation.	pice of most suitabl	e version.
123DPP	Diploma Project In accordance with the thesis proposal	Z	30
124BRA	BIM - Revit Architecture CE	Z	2
	bduces the basic principles of building design as an information model. Teaching takes place on the Autodesk platform. Teaching is for	_	_
	deling building elements, their relationships and properties. During the exercise, students will create a simple BIM model, they will lear export and import, they will learn basic principles of creating 2D documentation, scheduling, 3D presentation - render, anima	n to work with othe	
124BS04	Building Structures 4	Z,ZK	4
The subject is foc	used on the complex design of load-bearing structures, their interaction with the surrounding environment. In the first part of the subjection	ct, the attention is	focused o
	mutual interaction of load-bearing structures and the negative interactions between load-bearing and non-load-bearing systems. The		
•	volume changes, properties of structural materials are discussed. The second part of the subject is focused on the design of load-bead, the effects of non-rigid support of walkable structures and the issue of expansion of non-load-bearing structures. The last part is de water and the protection of the building from its effects.	-	-
124DPP	Diploma Project	Z	30
	oma theses are based on the needs of practice or the scientific research activity of the department, the scope and difficulty corresponsive acquired during the master's studies. The supervisor of the thesis can designate additional consultants to the student.	_	
124DSHB	Diagnosis and Surveying of Historical Buildings	Z	2
	key consideratons and implications which require structure assessment. The course provides an objective framework and methodical ic buildings. (structural diagnosis, preliminary and comprehensive survey, visual inspection, site inspections, laboratory tests, investig damages, symptoms, manifestation, significance, criticality, reason for failures case studies)		-
124EOB1	Seminar on Energy-optimized Buildings 1 Introduction in the theory and practice of the design of low-energy buildings of different categories. Lectures and workshop	ZK s	3
124IBUD	Integrated Building Design	Z	2
	of the subject Integrated Building Design is to get an complex overview of the principles of integrated buildings design, life cycle asse building performance, green/sustainable certificaition systems and understand environmental, social and economic aspects of the bui	-	s, evaluation
124SDP3	Structural Design Project 3	KZ	5
	course provides a complex approach to practice design, analysis and optimalization of advanced multistorey or long span building stru	l	
	at focus on a specific part of the building, construction. General analysis of load, functional and technologic requirements, design of ba		
	g elements dimensions calculation, choice of most suitable version. Closer focus on the problematic and difficult part of the constructior point of view of building physics - conducted heat and humidity, detailed static action of selected construction detail, numerical model preferences and focus.		
124SDP4	Structural Design Project 4	KZ	5
details, detailed ar	course is closer focus on the problematic and difficult part of the construction. In the first half of the semester general project requiremenalysis from the point of view of building physics - conducted heat and humidity, detailed static action of selected construction detail, representations of the construction details are constructed and difficult part of the construction. In the first half of the semester general project requirements of the construction details are constructed as a construction detail of the construction details.	numerical modeling	g, accordin
o the student's pre	eferences and focus. By prior arrangement, it is also possible to experimentally verify selected material or construction properties and	combine theoretic	al work wi
40CT!C	laboratory work. It is possible especially when student is focused on new types of materials and applications.	71/	
125TIE	Energy and Indoor Environment	ZK	2
	luces students to the theoretical knowledge of aspects of indoor environmental quality (IEQ) in relation to the energy performance of s of technical systems of heating, ventilation, air conditioning, water management and electricity supply and the different components		
	sortectrifical systems of reading, ventilation, all containming, water management and electricity supply and the different components scribed. The lectures are complemented by seminars where students learn about the development of the HVAC concept and have a l		

measurement and evaluation.

125YATH	Applied Thermomechanics	Z	2
	ains three basic groups, in which the student is gradually introduced to selected chapters on moist air, vapour thermodynamics and h	-	
	oduce students to the principles of equipment common in heating, ventilation and cooling systems that they will encounter in practice.  and lesser used processes occurring in air handling units. The vapor thermodynamics section focuses on the familiar compressor and		
discuss typical t	pumps. The final chapter will explain the processes and principles related to heat exchangers.	absorption crimers	and near
128PMDB	Process Modeling and Data Formats for BIM	Z,ZK	4
	s from fields of information management, business process management, and BIM. General business process modeling using Busines		
	ed Modeling Language (UML). Advanced Business Process models - collaboration of processes and choreography diagrams, Adaptation		
	leling of BIM processes in BIM Execution Plan (BEP) - using BPMN for modeling of BIM overview map and detailed BIM uses map, process my Manual (IDM). Other uses of process modeling methods in civil engineering. Basics of data formats for BIM - IFC/STEP, Express my		Information
132DPP	Diploma Project	Z	30
	f the final thesis is always individual based on the agreement of the teacher and the student. The vast majority of assignments are co		
	of the respective employee. The output of the solution may be a brief research study of the given problem, experimental activity, prog		
	to the respective assignment.		
132DS01	Dynamics of Structures	Z,ZK	5
132EXAN	The course is devoted to vibration of structures caused by various types of load.	KZ	3
	Experimental Analysis d at monitoring the magnitude of climatic loads on building structures (wind, snow, temperature loads), diagnostics of building structure	1	_
-	ng structures (laws of model similarity, simulation of earthquakes on shake tables, simulation of wind effects in wind tunnels, static loa		
monitoring of build	ing structures, static load tests (civil engineering structures, industrial structures, bridge structures), dynamic load tests and dynamic info	ormative tests (civil o	engineering
structures, industr	ial structures, bridge structures, footbridges, effects of technical seismicity, assessment of adverse effects of vibrations on the human	body, assessment	of the effect
4001440	of vibrations of the structure on installed technological equipment).		
132MAC	Microscopy and Phase Analysis of Construction Mat. of transmission and reflexion optical microscopy. Polarization of light and its application in the phase study of materials. The sample p	Z	2 reconical
	mentals of scannig electron microscopy and microanalysis. X-ray phase diffraction and structural analysis. The fundamentals of XRD is		-
	the structural and phase exploration of building materials.	, , , , , ,	
132MMO	Modern Methods of Optimization	Z	2
The course is aime	ed at an overview of numerical optimization methods applicable not only in the Civil Engineering area. The emphasis is put more on the in	troduction of driving	g principles,
400NA OT	however, practical applications in MATLAB environment are also conducted during exercises.	7.71/	-
132NAST	Numerical Analysis of Structures stiffness method of structural mechanics. Weak solution of one-dimensional elasticity equations. Galerkin method, Gauss integration,	Z,ZK	5 ite Flement
	state heat conduction in one dimension. Two-dimensional heat conduction problem, triangular finite elements. Two-dimensional elastic		
,	FEM, error estimates.	, .	J
132SDP3	Structural Design Project 3	KZ	5
-	lex approach to practic design, analysis and optimalization of multi-storey or long-span building structures, or their reconstruction. And	=	
	irements, design of load-bearing system alternatives including foundations, preliminary bearing elements dimensions calculation, cho al design of chosen version, calculation, technical report and drawings. Check of bearing and non-bearing structures interaction and a		
Botanoa otatiot	presentation.	occinisty toothinquo.	o. i abiio
132SDP4	Structural Design Project 4	KZ	5
-	ex approach to practic design, analysis and optimalization of multi-storey or long-span building structures, or their reconstruction. Analysis	=	
	irements, design of load-bearing system alternatives including foundations, preliminary bearing elements dimensions calculation, cho		
Detailed Statica	al design of chosen version, calculation, technical report and drawings. Check of bearing and non-bearing structures interaction and a presentation.	ssembly techniques	S. PUDIIC
133CASD	Computer Aided Structural Design	Z	2
	Structural Design has been implemented as an optional compulsory course which provides students to gain knowledge in a computer	1	
einforced concret	e structures. The objective of the course is to demonstrate the practical use of selected FEM software for the limit state design of various	is concrete structur	es. Namely,
	ne focus is on computational models, reinforcement design, numerical modelling, crack control, deformation control and internal force		
133CM03	Concrete and Masonry Structures 3	Z,ZK	5
Frestressed con	crete structures, shell structures, prestressed cable structures, shear and torsion, load carrying capacity of bridges, design according provisions	to older standards	and code
133CM04	Concrete Structures 4	Z,ZK	5
	used on the following areas: New approach to the design of bending, shear, torsion, punching Application of plastic theory in the conci		
	of concrete structures Non-linear analysis of concrete structures Probabilistic design Advanced concrete structures		
133DPP	Diploma Project	Z	30
1000000	Master's thesis.	1/7	_
133SDP3	Structural Design Project 3 cused on concrete and masonry structures. The assignment can be: elaboration of the structural design documentation, the analysis of	KZ KZ	5 n requiring
	earch and literature retrieval, the numerical analysis of the selected element or part of the structure, the preparation, execution and every		
•	several students on one assignments is also possible. Consultation with participating departments K124 and K135 is not mandatory	•	
	outputs depends on the type of assignment and the decision of the leading teacher.		
133SDP4	Structural Design Project 4	KZ	5
	cused on concrete and masonry structures. The assignment can be: elaboration of the structural design documentation, the analysis of		
=	earch and literature retrieval, the numerical analysis of the selected element or part of the structure, the preparation, execution and ex- several students on one assignments is also possible. Consultation with participating departments K124 and K135 is not mandatory be	=	
	outputs depends on the type of assignment and the decision of the leading teacher.		-
133YBBD	Basis of Bridges Design	Z	2
The course Bas	is of Bridge Design is focused on principal problems related to design of bridges - spatial arrangement and equipment of road and rail	way bridges, types	of bridge
400\/05	structures and technologies of construction of concrete bridges.	7 71/	4
133YCB The course of Cor	Concrete Bridges  crete Bridges is focused on design and construction of this type of bridge structures. Lectures are devoted to spatial arrangement and	Z,ZK equipment of road	4 and railway
	bstructure, effects and realization of prestressing, types of concrete bridge structures and technologies of their construction. Seminars		- 1
· •	and provide an opportunity to apply the learnt principles.		-

134DPP	Diploma Project	Z	30
Design of steel / f	imber load bearing building structure according to external requirements in relation to interaction of load bearing and final completion		
-	used on research of load bearing structures may be also the topic of the the project. The project is assigned by a final project superisi		o., r. otaa,
134FRST	Fire Resistance of Steel and Timber Structures	Z	2
	rse is to give students an understanding of the design methods of structures at accidental situations, fire and explosion. The course is	<del>-</del>	
	gn: prediction of fire scenario, evaluation of fire load, calculation of gas temperatures in the fire compartment and structural analysis at		-
	ntion is paid to fire modelling when several design models is presented including nominal temperature curves, simple models and adv		
134GSTR	Glass Structures	Z	2
The course is inten-	ding to introduce the students the field of structural applications of glass and to give them some specific skills for calculation and detailin	g of for basic glas	ss structures:
panes beams and	d fins, columns and walls, point-supported glass, as well as for glazing systems such as glass facades, canopies and roofs, stairs and	floors. On this p	urpose the
properties of glas	s as structural material will be presented in comparison with other basic building materials, together with selected examples of glass/	glazing application	ons. Design
details and connect	ting technology, relevant technical regulations, specification and current methods applied in design will be described. Worked example	s will accompany	the lectures
	for better understanding, and design project will help to fix specific knowledge.		
134SAL	Stainless Steel and Aluminium Structures	Z	2
The course covers	wo parts, design of aluminium and stainless steel structures. The first part covers evolution of stainless steel materials/structures and ex	camples of realize	ed structures.
	table for structures are described in a detail, including their properties. Dissimilarities in assessments of members under common loadii		
	for both ultimate and serviceability limit states. In the end the possibilities concerning connections of stainless steel members, erection		
steel members are	described. In the second part of the subject, the same topics are covered for aluminium structures. Welding and heat-affected zones a	re discussed in d	etail in terms
10.100.00	of weld design, section design and local welds effect in members.	177	
134SDP3	Structural Design Project 3	KZ	5
Design of steel / tim	nber load bearing building structure according to external requirements in relation to interaction of load bearing and final completion st	ructural elements	s. The project
	is assigned by the seminar leader.		
134SDP4	Structural Design Project 4	KZ	5
Design of steel / tim	nber load bearing building structure according to external requirements in relation to interaction of load bearing and final completion st	ructural elements	s. The project
10.10700	is assigned by the seminar leader.	7 717	
134ST02	Steel Structures 2	Z,ZK	4
The course gives	the basic information to steel structural design including detailing and advanced materials and ctructural solutions. The main focus is	on the industrial	structures
4040TD	including pipelines, silos, cranes, masts and towers.		
	0414		
134STB	Steel bridges	Z	2
	The subject describes the basics of the design of steel and composite bridges.		
134TS02	The subject describes the basics of the design of steel and composite bridges.  Timber Structures 2	Z,ZK	4
134TS02	The subject describes the basics of the design of steel and composite bridges.	Z,ZK	4
134TS02 The course brings	The subject describes the basics of the design of steel and composite bridges.  Timber Structures 2  an integrative approach to structural wood design that considers the design of the individual wood members in the context of the conall of the structural components and connectors work together in providing strength.	Z,ZK	4
134TS02 The course brings	The subject describes the basics of the design of steel and composite bridges.  Timber Structures 2 an integrative approach to structural wood design that considers the design of the individual wood members in the context of the co	Z,ZK nplete wood strud Z	4 cture so that
134TS02 The course brings 135CMGE Students get famili	The subject describes the basics of the design of steel and composite bridges.  Timber Structures 2 an integrative approach to structural wood design that considers the design of the individual wood members in the context of the conall of the structural components and connectors work together in providing strength.  Computing and Computer Modelling in Geotechnical Eng.	Z,ZK nplete wood struct Z ing the basic prir	4 cture so that 2 cciples of the
134TS02 The course brings 135CMGE Students get famili Finite Element Met	The subject describes the basics of the design of steel and composite bridges.  Timber Structures 2  an integrative approach to structural wood design that considers the design of the individual wood members in the context of the conall of the structural components and connectors work together in providing strength.  Computing and Computer Modelling in Geotechnical Eng.  ar with the Finite Element Method, the currently dominant tool for numerical modeling in geotechnics. Emphasis is placed on introductions.	Z,ZK nplete wood struct Z ing the basic printlements used in	4 cture so that 2 nciples of the
134TS02 The course brings 135CMGE Students get famili Finite Element Met	The subject describes the basics of the design of steel and composite bridges.  Timber Structures 2  an integrative approach to structural wood design that considers the design of the individual wood members in the context of the conall of the structural components and connectors work together in providing strength.  Computing and Computer Modelling in Geotechnical Eng.  ar with the Finite Element Method, the currently dominant tool for numerical modeling in geotechnics. Emphasis is placed on introducthod and their subsequent application to selected problems of Geotechnical Engineering. The course summarises the types of finite element Method.	Z,ZK nplete wood struct Z ing the basic printlements used in	4 cture so that 2 nciples of the geotechnical
134TS02 The course brings 135CMGE Students get famili Finite Element Met	The subject describes the basics of the design of steel and composite bridges.  Timber Structures 2  an integrative approach to structural wood design that considers the design of the individual wood members in the context of the conall of the structural components and connectors work together in providing strength.  Computing and Computer Modelling in Geotechnical Eng.  ar with the Finite Element Method, the currently dominant tool for numerical modeling in geotechnics. Emphasis is placed on introducthod and their subsequent application to selected problems of Geotechnical Engineering. The course summarises the types of finite erial models suitable for the description of ground deformation, and selected specifics associated with numerical modeling in geotechnic	Z,ZK nplete wood struct Z ing the basic printlements used in	4 cture so that 2 nciples of the
134TS02 The course brings  135CMGE Students get famili Finite Element Met applications, mater	The subject describes the basics of the design of steel and composite bridges.  Timber Structures 2  an integrative approach to structural wood design that considers the design of the individual wood members in the context of the context all of the structural components and connectors work together in providing strength.  Computing and Computer Modelling in Geotechnical Eng.  ar with the Finite Element Method, the currently dominant tool for numerical modeling in geotechnics. Emphasis is placed on introduct hod and their subsequent application to selected problems of Geotechnical Engineering. The course summarises the types of finite erial models suitable for the description of ground deformation, and selected specifics associated with numerical modeling in geotechnical public in the modelling of foundation, embedded walls, and stability problems.	Z,ZK nplete wood struct Z ing the basic printlements used in ics. This knowled	4 cture so that  2 ciples of the geotechnical tige is further
134TS02 The course brings  135CMGE Students get famili Finite Element Met applications, mater  135DPP In the diploma thes	The subject describes the basics of the design of steel and composite bridges.  Timber Structures 2  an integrative approach to structural wood design that considers the design of the individual wood members in the context of the conall of the structural components and connectors work together in providing strength.  Computing and Computer Modelling in Geotechnical Eng.  ar with the Finite Element Method, the currently dominant tool for numerical modeling in geotechnics. Emphasis is placed on introduct hod and their subsequent application to selected problems of Geotechnical Engineering. The course summarises the types of finite erial models suitable for the description of ground deformation, and selected specifics associated with numerical modeling in geotechnical applied in the modelling of foundation, embedded walls, and stability problems.  Diploma Project	Z,ZK nplete wood struct Z ing the basic printer lements used in ics. This knowled Z mple, problems r	4 cture so that  2 ciples of the geotechnical to ge is further  30 elated to the
134TS02 The course brings  135CMGE Students get famili Finite Element Met applications, mater  135DPP In the diploma thes	The subject describes the basics of the design of steel and composite bridges.  Timber Structures 2  an integrative approach to structural wood design that considers the design of the individual wood members in the context of the conall of the structural components and connectors work together in providing strength.  Computing and Computer Modelling in Geotechnical Eng.  ar with the Finite Element Method, the currently dominant tool for numerical modeling in geotechnics. Emphasis is placed on introduct hod and their subsequent application to selected problems of Geotechnical Engineering. The course summarises the types of finite erial models suitable for the description of ground deformation, and selected specifics associated with numerical modeling in geotechnical applied in the modelling of foundation, embedded walls, and stability problems.  Diploma Project  sis, the student deals with a topic chosen by the department from those regularly announced by the department. It addresses, for examples of the design of the individual wood members in the context of	Z,ZK nplete wood struct  Z ing the basic printerents used in ics. This knowled  Z mple, problems relent structures, e	4 cture so that  2 ciples of the geotechnical to ge is further  30 elated to the
134TS02 The course brings  135CMGE Students get famili Finite Element Met applications, mater  135DPP In the diploma thes	The subject describes the basics of the design of steel and composite bridges.  Timber Structures 2  an integrative approach to structural wood design that considers the design of the individual wood members in the context of the conall of the structural components and connectors work together in providing strength.  Computing and Computer Modelling in Geotechnical Eng.  ar with the Finite Element Method, the currently dominant tool for numerical modeling in geotechnics. Emphasis is placed on introduct hod and their subsequent application to selected problems of Geotechnical Engineering. The course summarises the types of finite erial models suitable for the description of ground deformation, and selected specifics associated with numerical modeling in geotechnical explicit in the modelling of foundation, embedded walls, and stability problems.  Diploma Project  sis, the student deals with a topic chosen by the department from those regularly announced by the department. It addresses, for exaction of geotechnical structures, civil engineering structures, special foundations for industrial, transport, housing and water management.	Z,ZK nplete wood struct  Z ing the basic printer lements used in ics. This knowled  Z mple, problems relent structures, e	4 cture so that  2 ciples of the geotechnical to ge is further  30 elated to the
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134TS02 The course brings  135CMGE Students get famili Finite Element Met applications, mater  135DPP In the diploma thes design and constru	The subject describes the basics of the design of steel and composite bridges.  Timber Structures 2  an integrative approach to structural wood design that considers the design of the individual wood members in the context of the conall of the structural components and connectors work together in providing strength.  Computing and Computer Modelling in Geotechnical Eng.  ar with the Finite Element Method, the currently dominant tool for numerical modeling in geotechnics. Emphasis is placed on introduct hod and their subsequent application to selected problems of Geotechnical Engineering. The course summarises the types of finite erial models suitable for the description of ground deformation, and selected specifics associated with numerical modeling in geotechnical modeling of foundation, embedded walls, and stability problems.  Diploma Project  sis, the student deals with a topic chosen by the department from those regularly announced by the department. It addresses, for exaction of geotechnical structures, civil engineering structures, special foundations for industrial, transport, housing and water managem structures in complex cases and waste disposal structures. The thesis builds on and develops the findings of the thesis project.	Z,ZK nplete wood struct  Z ing the basic print lements used in ics. This knowled  Z mple, problems r nent structures, ect.  Z,ZK	4 cture so that  2 nciples of the geotechnical lige is further  30 elated to the arth and rock
134TS02 The course brings  135CMGE Students get famili- Finite Element Met applications, mater  135DPP In the diploma thes design and construe	The subject describes the basics of the design of steel and composite bridges.  Timber Structures 2  an integrative approach to structural wood design that considers the design of the individual wood members in the context of the conall of the structural components and connectors work together in providing strength.  Computing and Computer Modelling in Geotechnical Eng.  ar with the Finite Element Method, the currently dominant tool for numerical modeling in geotechnics. Emphasis is placed on introduct hod and their subsequent application to selected problems of Geotechnical Engineering. The course summarises the types of finite erial models suitable for the description of ground deformation, and selected specifics associated with numerical modeling in geotechnical models suitable for the description of ground deformation, embedded walls, and stability problems.  Diploma Project  sis, the student deals with a topic chosen by the department from those regularly announced by the department. It addresses, for exaction of geotechnical structures, civil engineering structures, special foundations for industrial, transport, housing and water managem structures in complex cases and waste disposal structures. The thesis builds on and develops the findings of the thesis project Foundation of Structures 2  Advanced design approaches for selected types of foundation pits and footings, design based on soil - structure interaction	Z,ZK nplete wood struct Z ing the basic print lements used in ics. This knowled Z mple, problems r ient structures, ect. Z,ZK	4 cture so that  2 nciples of the geotechnical lige is further  30 elated to the arth and rock
134TS02 The course brings  135CMGE Students get famili Finite Element Met applications, mater  135DPP In the diploma thes design and construe  135FS02	The subject describes the basics of the design of steel and composite bridges.  Timber Structures 2  an integrative approach to structural wood design that considers the design of the individual wood members in the context of the conall of the structural components and connectors work together in providing strength.  Computing and Computer Modelling in Geotechnical Eng.  ar with the Finite Element Method, the currently dominant tool for numerical modeling in geotechnics. Emphasis is placed on introduce the finite subsequent application to selected problems of Geotechnical Engineering. The course summarises the types of finite extraction of ground deformation, and selected specifics associated with numerical modeling in geotechnical models suitable for the description of ground deformation, embedded walls, and stability problems.  Diploma Project  Sis, the student deals with a topic chosen by the department from those regularly announced by the department. It addresses, for exaction of geotechnical structures, civil engineering structures, special foundations for industrial, transport, housing and water managem structures in complex cases and waste disposal structures. The thesis builds on and develops the findings of the thesis project Foundation of Structures 2  Advanced design approaches for selected types of foundation pits and footings, design based on soil - structure interaction Structural Design Project 3	Z,ZK nplete wood struct Z ing the basic print lements used in ics. This knowled Z mple, problems r ient structures, ect. Z,ZK	4 cture so that  2 nciples of the geotechnical lige is further  30 elated to the arth and rock
134TS02 The course brings  135CMGE Students get famili Finite Element Met applications, matei  135DPP In the diploma thes design and constru  135FS02  135SDP3	The subject describes the basics of the design of steel and composite bridges.  Timber Structures 2  an integrative approach to structural wood design that considers the design of the individual wood members in the context of the conall of the structural components and connectors work together in providing strength.  Computing and Computer Modelling in Geotechnical Eng.  are with the Finite Element Method, the currently dominant tool for numerical modeling in geotechnics. Emphasis is placed on introduct hod and their subsequent application to selected problems of Geotechnical Engineering. The course summarises the types of finite erial models suitable for the description of ground deformation, and selected specifics associated with numerical modeling in geotechnical suitable for the description of ground deformation, embedded walls, and stability problems.  Diploma Project  sis, the student deals with a topic chosen by the department from those regularly announced by the department. It addresses, for exaction of geotechnical structures, civil engineering structures, special foundations for industrial, transport, housing and water managem structures in complex cases and waste disposal structures. The thesis builds on and develops the findings of the thesis proje  Foundation of Structures 2  Advanced design approaches for selected types of foundation pits and footings, design based on soil - structure interaction  Structural Design Project 3  Design, static calculation and drawing documentation of the building substructure	Z,ZK nplete wood struct Z ing the basic print lements used in ics. This knowled Z mple, problems r ident structures, e.ct. Z,ZK . KZ	4 cture so that  2 nciples of the geotechnical ge is further  30 elated to the arth and rock  4
134TS02 The course brings  135CMGE Students get famili Finite Element Met applications, mater  135DPP In the diploma thes design and constru  135FS02  135SDP3  135SDP4	The subject describes the basics of the design of steel and composite bridges.  Timber Structures 2  an integrative approach to structural wood design that considers the design of the individual wood members in the context of the conall of the structural components and connectors work together in providing strength.  Computing and Computer Modelling in Geotechnical Eng.  ar with the Finite Element Method, the currently dominant tool for numerical modeling in geotechnics. Emphasis is placed on introducthod and their subsequent application to selected problems of Geotechnical Engineering. The course summarises the types of finite erial models suitable for the description of ground deformation, and selected specifics associated with numerical modeling in geotechnical models suitable for the description of ground deformation, embedded walls, and stability problems.  Diploma Project  sis, the student deals with a topic chosen by the department from those regularly announced by the department. It addresses, for exaction of geotechnical structures, civil engineering structures, special foundations for industrial, transport, housing and water managem structures in complex cases and waste disposal structures. The thesis builds on and develops the findings of the thesis project and the summary of the building substructure.  Structural Design Project 4  Design, static calculation and drawing documentation of the building substructure	Z,ZK nplete wood struct Z ing the basic print lements used in ics. This knowled Z mple, problems repent structures, e.ct. Z,ZK KZ	4 cture so that  2 ciciples of the geotechnical ge is further  30 clated to the arth and rock  4  5
134TS02 The course brings  135CMGE Students get famili Finite Element Met applications, mater  135DPP In the diploma thes design and constru  135FS02  135SDP3  135SDP4  210DPP	The subject describes the basics of the design of steel and composite bridges.  Timber Structures 2  an integrative approach to structural wood design that considers the design of the individual wood members in the context of the conall of the structural components and connectors work together in providing strength.  Computing and Computer Modelling in Geotechnical Eng.  are with the Finite Element Method, the currently dominant tool for numerical modeling in geotechnics. Emphasis is placed on introduce had and their subsequent application to selected problems of Geotechnical Engineering. The course summarises the types of finite erial models suitable for the description of ground deformation, and selected specifics associated with numerical modeling in geotechnical explicit applied in the modelling of foundation, embedded walls, and stability problems.  Diploma Project  sis, the student deals with a topic chosen by the department from those regularly announced by the department. It addresses, for exaction of geotechnical structures, civil engineering structures, special foundations for industrial, transport, housing and water managem structures in complex cases and waste disposal structures. The thesis builds on and develops the findings of the thesis project  Foundation of Structures 2  Advanced design approaches for selected types of foundation pits and footings, design based on soil - structure interaction  Structural Design Project 3  Design, static calculation and drawing documentation of the building substructure  Structural Design Project 4  Design, static calculation and drawing documentation of the building substructure	Z,ZK nplete wood struct Z ing the basic print lements used in ics. This knowled  Z mple, problems repent structures, eact. Z,ZK KZ KZ	4 cture so that  2 ciciples of the geotechnical ge is further  30 elated to the arrth and rock  4  5  30
134TS02 The course brings  135CMGE Students get famili Finite Element Met applications, mater  135DPP In the diploma thes design and constru  135FS02  135SDP3  135SDP4  210DPP 220DPP	The subject describes the basics of the design of steel and composite bridges.  Timber Structures 2  an integrative approach to structural wood design that considers the design of the individual wood members in the context of the conall of the structural components and connectors work together in providing strength.  Computing and Computer Modelling in Geotechnical Eng.  ar with the Finite Element Method, the currently dominant tool for numerical modeling in geotechnics. Emphasis is placed on introducthod and their subsequent application to selected problems of Geotechnical Engineering. The course summarises the types of finite erial models suitable for the description of ground deformation, and selected specifics associated with numerical modeling in geotechnical models suitable for the description of ground deformation, embedded walls, and stability problems.  Diploma Project  sis, the student deals with a topic chosen by the department from those regularly announced by the department. It addresses, for exaction of geotechnical structures, civil engineering structures, special foundations for industrial, transport, housing and water managem structures in complex cases and waste disposal structures. The thesis builds on and develops the findings of the thesis project and the summary of the building substructure.  Structural Design Project 4  Design, static calculation and drawing documentation of the building substructure	Z,ZK nplete wood struct Z ing the basic print lements used in ics. This knowled  Z mple, problems repent structures, eact. Z,ZK KZ KZ	4 cture so that  2 ciciples of the geotechnical ge is further  30 clated to the arrth and rock  4  5  30  30  30

For updated information see <a href="http://bilakniha.cvut.cz/en/FF.html">http://bilakniha.cvut.cz/en/FF.html</a> Generated: day 2024-05-18, time 09:12.