### Study plan

# Name of study plan: Stavební inženýrství - životní prost edí

Faculty/Institute/Others: Department: Branch of study guaranteed by the department: Welcome page Garantor of the study branch: Program of study: Civil Engineering - Environmental 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: platí pro nástup od akad. roku 2023/24

Name of the block: Compulsory courses Minimal number of credits of the block: 38 The role of the block: Z

Code of the group: NZ20230100 Name of the group: Stavební inženýrství - životní prost edí, 1. semestr Requirement credits in the group: In this group you have to gain at least 24 credits Requirement courses in the group: In this group you have to complete at least 5 courses Credits in the group: 24 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.) Stochastic Methods in El 101STMZ Daniela Jarušková, Jozef Bobok Daniela Jarušková Daniela Jarušková Z,ZK 2P+1C Ζ 3 Ζ (Gar.) Applied physics and renewable energy Vít zslav Vydra, Petr Semerák Vít zslav Vydra Petr Semerák (Gar.) 102APOZ Z,ZK 6 2P+4C Ζ Ζ Methods of modelling in hydraulics nad hydrology Marie Uhrová, Michal Dohnal, Josef K e ek Michal Dohnal Michal Dohnal 141EHY Z,ZK 5 2P+2C Ζ z (Gar.) **Groundwater Hydraulics** 143HPVO Z,ZK 5 2P+2C Ζ Ζ Martin Šanda, Martina Sobotková Martin Šanda Martin Šanda (Gar.) Environmental Decision Making Martin Do kal Martin Do kal (Gar.) Ζ 143RPZP Z,ZK 5 2P+2C 7

Characteristics of the courses of this group of Study Plan: Code=NZ20230100 Name=Stavební inženýrství - životní prost edí, 1. semestr 101STMZ Z,ZK Stochastic Methods in EI 3 Basic statistical methods and their application to problems arising in environmental sciences 102APOZ Applied physics and renewable energy Z,ZK 6 Physical monitoring of environmental variables. Measurement theory. Theory of measurement uncertainties. Principles of direct and indirect measurements. Fundamentals of electricity and magnetism. Principles of physical electronics. Measurement of various environmental and material parameters, e.g. noise and vibration, thermal conductivity coefficient, elastic modulus, temperature, etc. Renewable energy sources: use of solar radiation, use of wind, biomass combustion, biofuels. Nuclear energy. 141EHY Methods of modelling in hydraulics nad hydrology Z,ZK 5 The course is oriented mainly on the study of precipitation-runoff genesis in a catchment and related water phenomena at the Earth. In the focus of this subject are environmental impacts of development activities with a special focus of water management in catchment and lakes. 143HPVO Groundwater Hydraulics Z,ZK 5 The course deals with the problem of groundwater flow in saturated rock environments. The introduction of the course is devoted to the theoretical background and mathematical description of groundwater flow. The next part is devoted to simplified solutions of basic problems - flow through phreatic and confined aquifers, seepage through an earth block, flow in the vicinity of wells. At the end of the semester, students will get acquainted with the method of numerical modelling of groundwater flow, using specialized software to solve an individual problem. 143RPZP Z,ZK 5 Environmental Decision Making Decision making in water and environmental management - decision (individual and group decision), operational games

Code of the group: NZ20230200

Name of the group: Stavební inženýrství - životní prost edí, 2. semestr

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

### Requirement courses in the group: In this group you have to complete at least 2 courses Credits in the group: 14 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
144OUUC	Urban Drainage and Water Quality David Stránský, Ivana Kabelková Ivana Kabelková David Stránský (Gar.)	Z,ZK	7	4P+1C	L	Z
155SVPD	<b>Collection and visualization of spatial data</b> Jan Pacina, Jind ich Hoda, Tomáš Janata <b>Tomáš Janata</b> Jind ich Hoda (Gar.)	Z,ZK	7	4P+2C	L	Z

### Characteristics of the courses of this group of Study Plan: Code=NZ20230200 Name=Stavební inženýrství - životní prost edí, 2. semestr

144OUUC	Urban Drainage and Water Quality	Z,ZK	7		
155SVPD	Collection and visualization of spatial data	Z,ZK	7		
* Photogrammetry - introduction * Photographic cameras * Photogrammetric methods * Intersection method, digital orthophoto * Stereophotogrammetry * Analytical aerotriangulation					

### Name of the block: Compulsory elective courses Minimal number of credits of the block: 18 The role of the block: PV

Code of the group: NZ20230100\_1

Name of the group: Stavební inženýrství - životní prost edí, PV p edm ty, 1. semestr Requirement credits in the group: In this group you have to gain at least 6 credits Requirement courses in the group: In this group you have to complete at least 1 course Credits in the group: 6

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
144YDUV	<b>Treatment and Distribution of Water</b> Bohumil Š astný, Kate ina Slaví ková, Filip Horký <b>Filip Horký</b> Bohumil Š astný (Gar.)	Z,ZK	6	4P+1C	z	PV
141YHPM	Hydrological Processes in Urban Catchments Vojt ch Bareš Vojt ch Bareš Vojt ch Bareš (Gar.)	Z,ZK	6	3P+2C	Z	PV
136SSZP	Road Structures and Environment Jan Valentin, Jan Hradil Jan Valentin Jan Valentin (Gar.)	Z,ZK	6	3P+2C	Z	PV
127YNUP	Town and Country Planning Instruments Václav Jetel, František Pospíšil František Pospíšil Václav Jetel (Gar.)	Z,ZK	6	3P+2C	Z	PV
143YPVT	Water Flow and Solute Transport in Soils Milena Císlerová, David Zumr David Zumr Milena Císlerová (Gar.)	Z,ZK	6	3P+2C	Z	PV

# Characteristics of the courses of this group of Study Plan: Code=NZ20230100\_1 Name=Stavební inženýrství - životní prost edí, PV p edm tv. 1. semestr

	7 71/				
144YDUV   Treatment and Distribution of Water	Z,ZK	6			
The course deals with the issue of water supply from the source, through the collection and treatment of raw water, accumulation and distribution of drinking water in the appliance to					
its subsequent use by specific customers (eg balneotechnical and food operations). The course also includes the basics of hydrochemistry and hydrobiology of drinking water and their					
sources.					
141YHPM Hydrological Processes in Urban Catchments	Z,ZK	6			
Fundamental hydrological processes in urbanized catchments and their mathematical description. Rainfall and rainfall data. Impacts of climate chan	ge on rainfall extre	emes and urban			
hydrology. Stormwater runoff from urbanized areas - generation and transport. Water transport in drainage systems. Hydrological processes in blue-	green infrastructu	ire objects.			
Measurement and monitoring of runoff, data processing. Simulation models and system analysis.					
136SSZP Road Structures and Environment	Z,ZK	6			
The objective of the subject is to provide students a more detailed knowledge of environmental issues related to the design, technical solutions, tech	inology and mate	rial base of road			
structures with an emphasis on current needs and trends, which include both practical issues - topsoil management, burial elaboration or externalities of	í the design of trar	nsport structures,			
as well as new approaches such as the progressive development of the application of LCA analyses, approaches to the possibility of assessing the ca	rbon footprint of r	oad construction			
solutions or the use of different types of alternative materials in the framework of an active approach to the circular economy.					
127YNUP Town and Country Planning Instruments	Z,ZK	6			
During the lectures, students will learn about spatial planning techniques, i.e. all spatial planning tools, their acquisition, processing and approval. The	e emphasis in the	e lectures is on			
land-use planning documents and land-use planning documentation as preparation for a special professional qualification or for the practice of a des	signer. As part of	the exercise,			
students will practically verify their theoretical knowledge in the analysis of spatial planning tools and outputs using GIS-based programs.					
143YPVT Water Flow and Solute Transport in Soils	Z,ZK	6			
Flow of water and solute transport in soil profile in engineering practice. Hydraulic properties of soil and rocky materials, methods of data analyses. Aproximation finctions of retention					
curve, retention function parameter optimization, hydraulic conductivity function estimate. Dispersion characteristics determination. Field versus lab measurements. basics of simulation					
modeling.					

Name of the group: Stavební inženýrství - životní prost edí, PV p edm ty, 2. semestr Requirement credits in the group: In this group you have to gain at least 12 credits Requirement courses in the group: In this group you have to complete at least 2 courses Credits in the group: 12

### Note on the group:

Note on the g	loup.					
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
144YISB	<b>Urban networks and balneology</b> Bohumil Š astný, Filip Horký <b>Filip Horký</b> Bohumil Š astný (Gar.)	Z,ZK	6	4P+1C	L	PV
144YECO	Ecotoxicology and Waste Water Treatment Jana Neková ová, Jana Náb Iková, Jaroslav Pollert <b>Jana Náb Iková</b> Jana Náb Iková (Gar.)	Z,ZK	6	4P+1C	L	PV
141YRIF	Project Design 2 Petr Sklená, Václav Matoušek Petr Sklená Petr Sklená (Gar.)	Z,ZK	6	2P+3C	L	PV
127YKRP	Landscape Planning Václav Jetel, Ji í Kupka, Lucie Kramolišová, Tereza Kubištová <b>Ji í Kupka</b> Ji í Kupka (Gar.)	Z,ZK	6	3P+2C	L	PV
127YUZM	Territorial Management Václav Jetel, Jan Cihlá Václav Jetel Václav Jetel (Gar.)	Z,ZK	6	3P+2C	L	PV
137YKSZ	Rail construction and environment Petra Vá ová, Lenka Lomoz Lenka Lomoz Lenka Lomoz (Gar.)	Z,ZK	6	3P+2C	L	PV
143YMPP	Surface processess modelling Petr Kavka Petr Kavka Petr Kavka (Gar.)	Z,ZK	6	3P+2C	L	PV
143YTUV	Technical Structures on Small Watercourses Petr Koudelka, Adam Vokurka Petr Koudelka Adam Vokurka (Gar.)	Z,ZK	6	2P+3C	L	PV

# Characteristics of the courses of this group of Study Plan: Code=NZ20230200\_1 Name=Stavební inženýrství - životní prost edí, PV p edm ty, 2. semestr

144YISB	Urban networks and balneology	Z,ZK	6			
The course is focused of	n the principles of designing engineering networks such as water supply, sewerage, gas, electrical installations and swimmir	ng pool and spas.				
144YECO	Ecotoxicology and Waste Water Treatment	Z,ZK	6			
Ecotoxicology: basic tox	cological and ecological concepts in theory and practice. Groups of substances of toxicological and ecotoxicological significance	e present in differe	nt environmental			
compartments.						
141YRIF	Project Design 2	Z,ZK	6			
The course consists of	two parts: 1. river engineering, where the focus is not only on purely technical structural interventions but also on measures of	close to nature. At	tention is also			
focused on the principles of considerate anthropogenic activities directly in and near watercourses. Such activities are aimed at ensuring the main required functions in the management						
use and disposal of flowing surface waters, while not leading to damage and degradation of the river landscape, but promoting its protection against all relevant risks. 2. fluvial processes,						
which are the most imp	ortant geomorphic manifestations in the river landscape in relation to the activities of flowing water. Their understanding prov	ides the necessar	y basis for the			
successful application a	nd synthesis of available knowledge on alluvial flows in the field of river engineering. The aim is to recognize the different cha	aracteristic channe	el types and flow			
development phases, in	cluding the dynamics of their changes, and to identify the processes shaping the river channel and its floodplain, including ar	n understanding o	their controlling			
mechanisms. It also incl	udes a qualitative and quantitative description of processes such as the onset of sediment particle movement and sediment mov	ement, erosion ar	nd sedimentation			
processes in the channe	el or the formation and development of bed formations, the mechanism of undercutting and bank slumping, deepening or soft	ening of the cross	-flow profile, etc.			
	s is the study of the response of modified watercourses to channel intervention caused by sudden natural changes or anthrop	•				
landscape. The commo	n basis for both parts is a summary of the theoretical knowledge and practical principles of advanced hydraulics of fixed-bed c	hannels in the fiel	d of non-uniform			
and spatially complex fl	ow, turbulent phenomena or resistance caused by granular channel bed or (riparian) vegetation exposed to the flow.					
127YKRP	Landscape Planning	Z,ZK	6			
The aim of the course is	to introduce students to landscape and landscape planning in different processes and phases of planning. The course will introd	duce the genesis of	of our landscape,			
the ways and forms of h	uman influence on the landscape before and now, in the post-agrarian and post-industrial era, which are necessary for unde	erstanding the law	s and processes			
occurring in today's land	Iscape. Students are encouraged to look independently at the landscape, to search for its natural, cultural, historical and civiliza	ational values. The	y are introduced			
to the forms and possib	ilities, mainly legislative, of its protection and to the various ways of landscape planning, including the application of land-use	planning tools in	the protection			
and creation of the land	scape, with emphasis on respect for the ecological, productive, residential, recreational and aesthetic aspects of the territory	. Lectures and exe	ercises will be			
complemented by work	with various information sources, with a focus on their interpretation, as well as specific examples of different types of territo	ries.				
127YUZM	Territorial Management	Z,ZK	6			
During the lectures, stud	ents will acquire knowledge of the organization of territorial self-governing units, especially with an emphasis on understanding	the management	of municipalities.			
In addition to the territo	rial development itself, emphasis is placed on understanding the financial ties in relation to the state budget, on the provision	of necessary ser	vices mainly			
oriented towards public	infrastructure and the economic aspects of territorial development. The lectures are supplemented by at least one excursion to	a selected town h	all and municipal			
office. The exercise is d	esigned as an urban project of a development location with a simulation of real project management with participation.					
137YKSZ	Rail construction and environment	Z,ZK	6			
Negative impacts of noi	se and vibration on human. Assessment of varied transport noise Acoustic levels. Noise maps. Noise study. Traffic noise cha	racteristics of diffe	rent transport			
means. Propagation of	noise. Ways of environment protection before adverse impacts of transport noise (urban, architectural, traffic-organizing, tech	inical).				
143YMPP	Surface processess modelling	Z,ZK	6			
Getting in the principles	of mathematical modeling within watershed management. There will be presented two up to three mathematical simulation r	nodels (dependin	g on progress of			
the work within the sem	inars)of rainfall-runoff relations, soil erosion and sediment transport and possibly also concentrated flow within the channel.					
143YTUV	Technical Structures on Small Watercourses	Z,ZK	6			
Small watercourses have often been modified in recent years. The reason for their modification was usually flood protection of the inner city or drainage works. In recent years, the						
trend towards the modification of watercourses has been reversed, with revitalisation measures and measures to increase water retention in the catchment area and to slow down						
runoff coming to the for	9.					

Name of the block: Povinn volitelné p edm ty, doporu ení S1 Minimal number of credits of the block: 30 Code of the group: NZ20230300 Name of the group: Stavební inženýrství - životní prost edí, diplomová práce 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:

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.) **Diploma Thesis** 101DPM 7 24C Ζ 30 S1 Daniela Jarušková, Michal Beneš, Milan Bo ík, Jakub Šolc, Jana Nosková Michal Beneš Daniela Jarušková (Gar.) **Diploma Thesis** Václav Jetel, František Pospíšil, Jan Mužík, Jan Storch, Ivan Horký, Ivan Ζ 127DPM 30 24C L,Z S1 Vorel, Marek Janatka, Petr Durdík, Ivan Kaplan František Pospíšil František Pospíšil (Gar.) **Diploma Thesis** 133DPM Ζ 24C Ζ 30 S1 Martin Tipka **Diploma Thesis** Ζ Ζ 135DPM 30 24C S1 Jan Pruška, Jan Masopust Jan Pruška Jan Pruška (Gar.) **Diploma Thesis** Ζ Ζ 136DPM 30 24C S1 Petr Mondschein Ludvík Vébr (Gar.) **Diploma Thesis** 137DPM Ζ 30 24C Ζ S1 Leoš Horní ek, Hana Krej i íková Lenka Lomoz Leoš Horní ek (Gar.) **Diploma Thesis** Michal Dohnal, Josef K e ek, Vojt ch Bareš, Petr Sklená, Václav Matoušek, 141DPM Ζ 30 24C Ζ S1 Jaromír Dušek, Aleš Havlík, Tomáš Picek Michal Dohnal Michal Dohnal (Gar.) **Diploma Thesis** Miroslav Brou ek, Ladislav Satrapa, Michal Toman, Martin Horský, Pavel 142DPM Ζ 30 24C Ζ S1 Fošumpaur, Martin Králík, Milan Żukal, Petra Nešvarová Chvojková, Petr Nowak, Martin Horský Ladislav Satrapa (Gar.) **Diploma** Thesis Ζ 143DPM 24C Ζ 30 S1 Martin Šanda Tomáš Dostál (Gar.) **Diploma Thesis** Ζ Ζ 144DPM 30 24C S1 Bronislava Rohanová Filip Horký (Gar.) **Diploma Thesis** 220DPM Ζ 24C Ζ 30 S1 Ji í Svoboda, Radek Vaší ek, Jaroslav Pacovský Ji í Svoboda Ji í Svoboda (Gar.)

### Characteristics of the courses of this group of Study Plan: Code=NZ20230300 Name=Stavební inženýrství - životní prost edí, diplomová

prace			
101DPM	Diploma Thesis	Z	30
Please contact your tea	cher or guarantor of this subject.		
127DPM	Diploma Thesis	Z	30
Qualifying thesis complete	eting the Master's degree. The Department of Urban Design, Town and Regional Planning enters theses in the study programmed and the study programm	ne Architecture a	and Building
Sciences (majoring in A	rchitecture and Urbanism) and Civil Engineering, majoring in Environmental Engineering.		
133DPM	Diploma Thesis	Z	30
In accordance with a the	esis proposal.		
135DPM	Diploma Thesis	Z	30
In the diploma thesis, th	e student deals with a topic chosen by the department from those regularly announced by the department. It addresses, for ex	kample, problem	s related to the
design and construction	of geotechnical structures, civil engineering structures, special foundations for industrial, transport, housing and water manag	ement structures	, earth and rock
structures in complex ca	ases and waste disposal structures. The thesis builds on and develops the findings of the thesis project.		
136DPM	Diploma Thesis	Z	30
The assigned topic of di	ploma theses can be a project, traffic surveys, research of selected issues with application in practice for various technical solution	ons of road struct	tures, laboratory
	onality of various materials for pavements, etc. In terms of design, the most common topics of theses are, for example, the des	•	
	cted section of a road (bypass, flyover), the design of a road network in a selected area of the city, the design of a new constru		
	n of an airport, heliport, etc. In terms of pavement structures and road construction technologies, the most frequent topics of wo		
	tions for asphalt or concrete pavements, including the relevant composite materials or input components (binders, aggregates, et	c.), assessment	of the behaviour
	or type of structure by laboratory methods, or carrying out simulations, etc.		
137DPM	Diploma Thesis	Z	30
	e final complex work prepared by students at the end of their university studies. The diploma thesis describes the given issue in		
	he ability to work independently and an engineering approach. The diploma thesis takes the form of either a project (reconstruc		
	es), a research (processing of an overview in a certain area) or a laboratory (including the execution and evaluation of specified	laboratory tests)	), or a combined
one.			
141DPM	Diploma Thesis	Z	30
The course enables the the person of the super-	student to prepare, write and submit a diploma thesis. The Department of Hydraulics and Hydrology provides consultations in visor of the thesis.	the selected top	ic, especially in
142DPM	Diploma Thesis	Z	30
The work is an individua	al activity of the student in the preparation of the topic of the final thesis for the period of study on the assigned professional to	pic.	

143DPM	Diploma Thesis	Z	30	
Diploma thesis is selected by the student at one of departments, involved within study program, according to his specific interest.				
144DPM	Diploma Thesis	Z	30	
Diploma Thesis concerning sewerage, waste water treatment, water suply, networks and balnology.				
220DPM	Diploma Thesis	Z	30	
Diploma thesis elaboration with possible use of geotechnical laboratory and underground facility the Josef underground laboratory (http://ceg.fsv.cvut.cz).				

Name of the block: Povinn volitelné p edm ty, doporu ení S4 Minimal number of credits of the block: 4 The role of the block: S4

Code of the group: NZ20230200\_2 Name of the group: Stavební inženýrství - životní prost edí, projekt 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
101DISZ	Project Jozef Bobok Jozef Bobok Jozef Bobok (Gar.)	KZ	4	3C	L	S4
127DISZ	<b>Project</b> Václav Jetel, František Pospíšil, Ji í Kupka, Marek Janatka, Simona Vondrá ková <b>Václav Jetel</b> Václav Jetel (Gar.)	КZ	4	3C	L	S4
133DISZ	Project Jitka Vašková	KZ	4	3C	L	S4
135DISZ	Project Jan Salák	KZ	4	3C	L	S4
136DISZ	Project Jaromíra Ježková Petr Mondschein Jaromíra Ježková (Gar.)	KZ	4	3C	L	S4
137DISZ	Project Petra Vá ová, Lenka Lomoz Lenka Lomoz Lenka Lomoz (Gar.)	KZ	4	3C	L	S4
141DISZ	<b>Project</b> Michal Dohnal, Josef K e ek, Petr Sklená <b>Michal Dohnal</b> Petr Sklená (Gar.)	КZ	4	3C	L	S4
142DISZ	Project Ladislav Satrapa, Martin Horský, Martin Králík Martin Králík Ladislav Satrapa (Gar.)	КZ	4	3C	L	S4
143DISZ	Project Martin Šanda, Martina Sobotková, Martin Do kal, Milena Císlerová, David Zumr, Petr Kavka, Petr Koudelka, Adam Vokurka, Pavla Schwarzová, Miroslav Bauer Tomáš Dostál (Gar.)	КZ	4	3C	L	S4
144DISZ	Project Filip Horký Bohumil Šastný (Gar.)	KZ	4	3C	L	S4
220DISZ	Project Ji í Svoboda, Radek Vaší ek <b>Radek Vaší ek</b> Ji í Svoboda (Gar.)	KZ	4	3C	L	S4

#### Characteristics of the courses of this group of Study Plan: Code=NZ20230200\_2 Name=Stavební inženýrství - životní prost edí, projekt

101DISZ	Project	KZ	4		
Please, contact the gua	rantor of this subject.				
127DISZ	Project	KZ	4		
Semester project for the purpose of preparing for the preparation of a diploma thesis in the field of Environmental Engineering.					
133DISZ	Project	KZ	4		
The subject is focused of	on concrete and masonry structures and materials in relation with the impact on the environment, aspects of sustainable cor	struction, energy	consumption,		
renewable sources, etc.	The content of the work can be the elaboration of a research study comprising the processing of discoveries from the literat	ure, the execution	and analysis of		
experiments, etc.					
135DISZ	Project	KZ	4		
136DISZ	Project	KZ	4		
Preparation of the basic	documents for the assignment of a master thesis and their processing. Lectures by experts from the practice (road design, co	instruction techno	logy, information		
about new procedures a	and software)				
137DISZ	Project	KZ	4		
As part of the project, ir	tensive preparation for the diploma thesis is already taking place. In After agreement with the teacher, a preliminary thesis to	pic is determined	. The student		
should responsibly prepare for the creation of the work itself by studying the documents, creating research, and obtaining background materials (e.g. maps). Furthermore, he should					
determine the outline of the work and master the work with any measuring technique, etc.					
141DISZ	Project	KZ	4		
Not applicable.					

142DISZ	Project	KZ	4		
The diploma seminar is	focused on the preparation of the student's final thesis. It is an independent work of the student under the guidance of the th	esis supervisor. T	he student's		
activity is focused on re-	search, preparation of documents and data and carrying out his/her own creative work with the obtained documents so that t	he actual prepara	tion of the thesis		
plan and documentatior	proceeds smoothly and at the appropriate professional level. In the case of studies, this involves the preparation, processin	g and evaluation of	of data from		
various data sources. In	the case of design work, the preparation of documents and data is even broader by the field work (site survey and any additional	al work - surveying	, documentation		
of any changes compar	ed to the documents, etc.).				
143DISZ	Project	KZ	4		
collection and preparati	on of data and sources for diploma thesis according to individual specification				
144DISZ	Project	KZ	4		
SEWERAGE: Data colle	ection and processing for a given site, design of scenarios of foul water drainage and storm water drainage or infiltration. WA	FER SUPPLY: De:	sign of water		
supply of a given site. D	ata collection, determination of the way of water supply. Design of feeding pipelines, water storage and main distribution pipe	elines. Drawing of	situation and		
longitudinal profile.					
220DISZ	Project	KZ	4		
Preparatory works on diploma thesis elaboration. Literature review, study on problematics to be solved - practical cases in geotechnical laboratory and the Josef underground laboratory					
(http://ceg.fsv.cvut.cz).					

## List of courses of this pass:

101DISZ         Project         KZ         4           101DPM         Diploma Thesis         Z         30           101STMZ         Basic statistic Methods in EI         Z,ZK         3           102APOZ         Applied physics and renewable energy.         Z,ZK         6           Physical monitoring of environmental variables. Messurement theory: Theory of messurement uncertainlise. Principles of direct messurements. Fundamentals of electricity: discussment of variable energy.         Z,ZK         6           Physical monitoring of environmental auxiables. Messurement theory: Theory of messurement uncertainlise. Principles of direct messurements. Fundamentals of electricity: discussmentor of variable energy.         Z,ZK         6           127DISZ         Semester project for the purpose of prepariting for the preparation of a diploma thesis in the field of Environmental Engineering.         Z         30           127DPM         Diploma Thesis         Diploma Thesis         7         30           127VER         Landscape Planning         Z,ZK         6           The aim of the course is to introduce students to landscape and panning in different processes and phases of panning. The course will introduce the genesis of our landscape.         2         30           127VERP         Landscape Planning         Z,ZK         6           The aim of the course is to introduce students to landscape and anning in different processes and phases	Code	Name of the course	Completion	Credits
101DPM         Diploma Thesis         Z         30           101STMZ         Basic statistical methods and their application to problems arising in environmental sciences.         Z,ZK         3           102APOZ         Applied Dypisics and renewable energy         Z,ZK         6           Physical monitoring of environmental variables. Measurement theory. Theory of measurements, e.g. noise and vhorison, thermal conductivity cellification, elessic modulus, emperature, etc. Renewable energy sources: use of solar radiation, use of wind, biomass combustion, biofuels. Nuclear energy.         Z         4           127DPM         Semester project for the purpose of preparing for the preparation of a diploma thesis in the field of Environmental Engineering.         Z         30           127DPM         Semester project for the purpose of preparing for the preparation of a diploma thesis in the field of Environmental Engineering.         Z         30           127YKRP         Landscape Planning         Z, ZK         6           The ways and Kompa the Master's degree. The Department of Utaon Design, Town and Regional Planning. The ocurse will introduce the genesis of our landscape, the ways and Kompa the month term and cape and and scape planning in different processes and phases of planning. The ocurse will introduce the genesis of our landscape, the ways and Kompa the and scape, bioma and possibilities, mainting the laws and possind the andinding the laws and possind the andicape, the andicape	101DISZ	Project	KZ	4
Please contact your teacher or guarantor of this subject.         Image: Contact your teacher or guarantor of this subject.           101STMZ         Basic statistical methods and their application to problems arising in environmental sciences.         Z,Z,K         6           102APOZ         Applied physics and renewable energy         Z,Z,K         6           Physical molitoring of environmental variables. Messurement theory: Theoropy of messurement uncertaintes. Phriciples of direct and indirect messurements. Fundamentals of electricity and magnetism. Principles of physical electronics. Messurement theory: Theory of messurement uncertaintes. Phriciples of physical electronics. Messurement to various environmental and material parameters. e.g. onice and vibration, thermal conductivity coefficient, elestic modulus, temperature, etc. Renewable energy sources: use of solar relation, use of wind, biomass combustion, biofuels. Nucleer energy.         Z         30           127DPM         Semester project for the purpose of preparing for the preparation of a diploma thesis in the field of Environmental Engineering.         Z         30           127DPM         Chandscape Planning         Z,ZK         6           127TKRP         Landscape planning in different processes and phases of planning. The course will introduce the generation or all andscape, the ways and forms of human influence on the landscape planning on their interpretation, and esciption of and-use planning tools in the protection and rescape planning in the status and untrake planning tools in the protection and rescape planning on the interpretation of the landscape, will enruboto set dup thrankes and escinate and possibilities, ma		Please, contact the guarantor of this subject.		
101STMZ         Stochastic Methods in El         Z,ZK         3           102APOZ         Applied physics and renewable energy         Z,ZK         6           Physical monitoring of environmental variabes. Measurement theory. Theory of measurement uncertainties. Principles of physical electronics. Measurement drusce works environmental and material parameters, e.g. noise and vibration, thermal conductivity coefficient, elastic modulus, temperature, etc. Renewable energy sources: use of solar radiation, use of wind, biomass combustion, biofuels. Nuclear energy.         KZ         4           127DISZ         Semester project for the purpose of preparation of a dploma thesis in the field of Environmental Engineering.         Z         30           Qualifying thesis completing the Master's degree. The Department of Urban Design, Tow and Regional Planning enters theses in the study programe Architecture and Building Sciences (majoring in Architecture and Urban Design, Tow and Regional Planning. The course will introduce the genesis of our landscape, to search for its natural, cultural, historical and vicilitational values. They are introduced to the forms and possibilities, mainly legislative, of its protection and to the various ways of landscape planning. Infolding the application of land-use planning tools in the protection and creation of the landscape, with warkous information sources, with a locus on their interpretation, as well a specific on of the represain of the course is different types of degreenting.         Z,ZK         6           127YKRP         Town and Regional Planning (most human influence on the landscape bear and now, in the post-agrarian and post-industrite, wich are decessed or the anstropic and the second and scape	101DPM	Diploma Thesis	Z	30
Basic statistical methods and their application to problems arising in environmental sciences.         Viron           102APOZ         Applied physics and renewable energy         Z,ZK         6           Physical molitoring of environmental variables. Measurement di various environmental and material parameters, e.g. noise and vibration, thermal conductivity coefficient, elastic modulus, termevable energy sources: use of solar radiatori, use of wind. biomass combuston, biotelist. Nuclear energy.           127DISZ         Project         KZ         4           127DPM         Diploma Thesis         Z         30           Qualifying thesis completing the Master's degree. The Department of Urban Design, Tow and Regional Planning enters theses in the study programme Architecture and Building Sciences (majoring in Architecture and Building Sciences to introduce students to indaccepe period and Urban main discepe. to search toris in sturical and Vice the genesis of our landscepe, the ways and forms of human influence on the landscape balaning in different processes and phases of planning. The occurse will introduce the genesis of our landscepe and and sciences.         2,ZK         6           Torms of human influence on the landscape balaning in different processes and phases of planning in diffusculare halo and science in and one science (majoring to halo ways of landscape planning in diffusculare) and assistic assepties of the errorized on and or the various ways of landscape planning in diffusculare) and assistic assepties of the errorized and assistic assepties of the errorize.      <		Please contact your teacher or guarantor of this subject.		
102APOZ         Applied physics and renewable energy         Z,ZK         6           Physical monitoring of environmental variables. Measurement theory. Theory of measurement uncertainties. Principles of direct and indirect measurements. Fundamentals of electricity and magnetism. Principles of physical electronics. Measurement of various environmental and material parameters, e.g. noise and vibration, thermal conductivity coefficient, elastic modulus, temperature, etc. Renewable energy sources: use of solar radiation, use of wind, biomass combustion, bioludes. Nuclear energy.         Image: Comparison of the programme of the solar metal to and scape period in the programina of the solar metal of and scape period in the programican and passibilities, mainty legislative, of its protection and to the various ways of landscape. Sudents are encouraged to look independently at the landscape, to search for its natural, cultural, historical and civilizational values. They are introduced to the forms and possibilities, mainly legislative, of its protection and to the various ways of landscape petitoring in the protection and civilizational values. They are introduced to the forms and possibilities, mainly legislative, of its protection and to the various ways of landscape petitor of or for the protection and civilization and uses petitoris and civilizational values. The special protocitics, leader of the exercises will be complemented by work with various information sources, with a locus on their interpretation, as well a special protocitic, leader and exercise and period of land-use planning tools in the protection and and the explanation for a special protocitic, procesing and approvit. The emplasis in the fectures. Students will pr	101STMZ	Stochastic Methods in El	Z,ZK	3
Physical monitoring of environmental variables. Measurement theory. Theory of measurements in uncertainties. Principles of direct and indirect measurements. Fundamentals of electricity and magnetism. Principles of physical electronics. Measurement of various environmental and material parameters, e.g., noise and vibration, thermal conductivity coefficient, elastic modulus, temperature, etc. Renewable energy sources: use of solar radiation, use of vind, biomass combustion, biofuels. Nuclear energy.       127DISZ    Project    KZ    4      127DPM    Diploma Thesis    Z    30      Qualitying thesis completing the Master's degree. The Department of Urban Design, Town and Regional Planning enters theses in the study programme Architecture and Building Sciences (majoring in Architecture and Urbanism) and CVII Engineering, majoring in Environmental Engineering.    Z/X    6      The aim of the course is to inforduce students to landscape planning in different processes and phases of planning. The course will inforduce the genesits of curindscape, the ways and forms of human influence on the landscape planning in different processes and phases of planning. Including the and-use planning includies the processes or ourses is on information sciences, with o book andpendently at the landscape, to search for its natural, cultural, historical and vibilizational values. They are introduced to the dome stude interation, as well as specific examples of different processes.      127YNUP    Town and Country Planning Instruments    Z/K    6      During the lectures, students will learn about spatial planning toots, their acquisition, or the practice of a designer. As a rol to the various ways of landscape, in the specific examples of different processing and approval. The epinterionis.    Z/K		Basic statistical methods and their application to problems arising in environmental sciences.		
and magnetism. Principles of physical electronics. Measurement of various environmental and material parameters, e.g., noise and vibration, thermal conductivity coefficient, elasties modulus, temperature, etc. Renewable energys surces: use of solar radiation, use of wind, biomass combustion, biofuels. Nuclear energy:           127DINS         KZ         4           Sensets project for the purpose of preparing for the preparation of a diploma thesis in the field of Environmental Engineering.         Z         30           Qualitying thesis completing the Master's degree. The Operatment of Urban Design. Town and Regional Planning enters theses in the study programme Architecture and Building Sciences (majoring in Architecture and Urbanism) and Civil Engineering, majoring in Environmental Engineering.         Z,ZK         6           127YKRP         Landscape Planning         Res of the own of the own in the post-agaratin and post-industrial era, which are necessary for understanding the leavs and processes occurring in todays landscape. Students are encouraged to look independently at the landscape, to search for its narule, clutrul, historical and civilizational values. They are introduced to the form and possibilities, mainly legislaties, row as of the opscale planning, including the application of land-use planning tools in the protection and creation of the landscape, with emphasis on respect for the ecological, productive, residential, recreational and aesthetic aspects of the territory. Lectures and exercises will be complemented by work with various information sources, with a locus on their interpretation, as well as specific examples of different types of territories.         127YKIP         CX         6           During the lectures, students will paracinally decomments are opposition is man	102APOZ	Applied physics and renewable energy	Z,ZK	6
modulus, temperature, etc. Renewable energy sources: use of solar radiation, use of wind, biomass combustion, bioluels. Nuclear energy.           127DISZ         Semester project for the purpose of preparing for the preparation of a diptoma thesis in the field of Environmental Engineering.         X         30           Qualitying thesis completing the Master's degree. The Department of Uthan Disploma Thesis         Z         30           During the sis completing the Master's degree. The Department of Uthan Disploma Thesis         Z.K         6           Text with the course is to introduce students to indiscape patienting in different processes and phases of planning. The course will introduce the genesis do ut andscape, the ways and forms of human influence on the landscape before and now, in the post-agrarian and post-industrial rea, which are necessary for understanding the laws and processes accurring in today's landscape, Students are encoursed to look independently at the landscape, to search for its natural. Auditural. Instorical and dividizational values. They are introduced to the forms and possibilities, mainly legislative, of its protection and to the various ways of landscape planning, including the application of land-use planning tools in the protection and the landscape. Is and such as preparation for a special productive, residential, recreation and a asthetic aspecific examples of term torins.         Z/Z K         6           During the lectures, students will para belanting tools in the analysis of spatial planning tools, their acquisition, processing and approval. The emphasis in the lectures is on land-use planning documentias and preparation for a special productive, residential protestonal qualification or for the practice of a designer. As part of the exer	Physical monitoring	of environmental variables. Measurement theory. Theory of measurement uncertainties. Principles of direct and indirect measurement	nts. Fundamentals	of electricity
127DISZ         Project         KZ         4           Semester project for the purpose of preparing for the preparation of a diploma thesis in the field of Environmental Engineering.         X         30           Qualitying thesis completing the Master's degree. The Department of Urban Design, Tom and Regional Planning enters theses in the study programme Architecture and Building Sciences (majoring in Architecture and Urbanism) and Civil Engineering, majoring in Environmental Engineering.         Z/ZK         6           Tore sim of the course is to introduce students to landscape planning in different processes and proses of planning. The course will introduce the genesis of our landscape, the ways and forms of human influence on the landscape planning in different processes and post-industrial era, which are necessary for understanding the laws and processes courring in dody's landscape. Students are encouraged to look independently at the landscape, to search for its natural, cultural, historical and civilizational values. They are introduced to the forms and possibilities, mainly legislative, of its protection and to the various ways of landscape planning, including the application of land-use planning tools in the protection and acesses will be complemented by work with various information sources, with a focus on their interpretation, as well as specific examples of different types of territories.         Z/K         6           127YNUP         Town and Country Planning tools, their acquisition, processing and approval. The emphasis in the lectures is on land-use planning documentation as preparation for a special professional qualification or for the praviso of the graces will be counces any soft ways and the exercise.         Z/K         6	and magnetism. P	rinciples of physical electronics. Measurement of various environmental and material parameters, e.g. noise and vibration, thermal c	onductivity coeffici	ent, elastic
Semester project for the purpose of preparing for the preparation of a diploma thesis in the field of Environmental Engineering.         Z         30           127DPM         Diploma Thesis         Z         30           Oualifying thesis completing the Master's degree. The Department of Utban Design, Town and Regional Planning enters theses in the study programme Architecture and Building Sciences (majoring in Architecture and Urbanism) and Civil Engineering, majoring in Environmental Engineering.         Z,ZK         6           The aim of the course is to introduce students to landscape pelanning in different processes and phases of planning. The course will introduce the genesis of our landscape, the ways and forms of human influence on the landscape before and now, in the post-agrarian and post-inductival era, which are necessary for understanding the laws and processes occurring in today's landscape. Students are encouraged to look independently at the landscape hanning, including the application of land-use planning tools in the protection and to the various ways of landscape planning. Including the application of land-use planning tools in the protection and possibilities, mainly legislative, of its protection and country Planning Instruments         Z,ZK         6           During the lectures, students will learn about spatial planning tochitemer prevision on particle and advises planning including the application or tor the practice and advises in the exercises is on land-use planning documents and land-use planning documents.         Z,ZK         6           During the lectures, students will learn about spatial planning tochitemer application or the transidiation as preparation for a specically with an emphasis on understanding the exercins and proves		modulus, temperature, etc. Renewable energy sources: use of solar radiation, use of wind, biomass combustion, biofuels. Nuclear	r energy.	
127DPM         Diploma Thesis         Z         30           Qualifying thesis completing the Master's degree. The Department of Urban Design, Town and Regional Planning enters theses in the study programme Architecture and Urbanins) and Civil Engineering, majoring in Environmental Engineering.         Z         30           127YKRP         Landscape Planning         Z,ZK         6           The ain of the course is to introduce students to landscape and landscape planning in different processes and phases of planning. The ourse will introduce the genesis of our landscape.         7         K         6           The ain of the course is to introduce students to landscape e planning in different processes and post-industrial era. which are necessary for understanding the laws and processes occurring in today's landscape. Students are encouraged to look independently at the landscape planning. Including the application of land-use planning tools in the protection and creation of the landscape, with emphasis on respect for the ecological, productive, residential, recreational and aesthetic aspects of the territory. Lectures and exercises will be complemented by work with various information sources, with a focus on their interpretation, as well as specific examples of different types of territories.           127YNUP         Town and Country Planning Instruments         Z,ZK         6           During the lectures, students will acrea about spatial planning toching, their acquisition, processing and approval. The emphasis in the lectures is on land-use planning docidents will acquire knowledge of the organization for a special professional qualification of the teracice is designed as an urban project of a special p	127DISZ	Project	KZ	4
Qualifying thesis completing the Master's degree. The Department of Urban Design, Town and Regional Planning enters theses in the study programme Architecture and Building Sciences (majoring in Architecture and Urbanism) and Civil Engineering, majoring in Environmental Engineering.         127YKRP       Landscape Planning       Z,ZK       6         The aim of the course is to introduce students to landscape before and now, in the post-agarain and post-industrial era, which are necessary for understanding the laws and processes courring in toddy's landscape, Students are necoursed to took independently at the landscape, to search for its natural, cutural, historical and visitational and post-industrial era, which are necessary for understanding the laws and processes courring in toddy's landscape, by entrodices. They are introduced to the forms and possibilities, mainly legislative, of its protection and to the various ways of landscape planning, including the application of land-use planning tools in the protection and to the various ways of landscape planning. Including the application of land-use planning tools in the protection and to the various ways of landscape planning. Including the application of the erritories.       127 KIMP       C       Z/ZK       6         During the lectures, students will learn about spatial planning tools, their integretation, as well as specific examples of different types of territories.       127 KIMP       C       Z/ZK       6         During the lectures, students will acquire knowledge of the organization or tor the practice of a designer. As part of the exercise, students will acquire knowledge of the organization or territorial Management       Z,ZK       6         During the lectures,		Semester project for the purpose of preparing for the preparation of a diploma thesis in the field of Environmental Engineeri	ng.	
Sciences (majoring in Architecture and Urbanism) and Civil Engineering, majoring in Environmental Engineering.         Z,ZK         6           127YKRP         Landscape Planning         Z,ZK         6           The aim of the course is to introduce students to landscape and landscape planning in different processes and phases of planning. The ocurse will introduce the genesis of our landscape, the ways and forms of human influence on the landscape before and now, in the post-agrarian and post-industrial ard civilizational values. They are introduced to the forms and possibilities, of its protection and to the various ways of landscape planning, including the application of land-use planning indifferent types of the territory. Lectures and exercises will be complemented by work with various information sources, with a focus on their interpretation, as well as specific examples of different types of territories.         6           127YNUP         Town and Country Planning Instruments         Z,ZK         6           During the lectures, students will para about spatial planning toch, use planning documentation as preparation for a special professional qualification or for the practice of a designer. As part of the exercise, students will practically verify their theoretical knowledge in the analysis of spatial planning tools and outputs using GIS-based programs.         2,ZK         6           During the lectures, students will acquire knowledge of therritorial self-governing units, especially with an emphasis on understanding the management of municipalities. In addition to the territorial development itself, emphasis is placed on understanding the financial ties in relation to the state budget, on the provision to a selected town hall and municipal office. The	127DPM	Diploma Thesis	Z	30
127YKRP       Landscape Planning       Z,ZK       6         The aim of the course is to introduce students to landscape, and landscape, planning in different processes and phases of planning. The course will introduce the genesis of our landscape, the ways and forms of human influence on the landscape before and now, in the post-industrial era, which are necessary for understanding the laws and processes occurring in today's landscape, students are encouraged to look independently at the landscape, to search for its natural, cultural, historical and civilizational values. They are introduced to the forms and possibilities, mainly legislative, of its protection and to the various ways of landscape planning, including the application of land-use planning tools in the protection and or the encological, productive, residential, recreational and aesthetic sapects of the territory. Lectures and excrises will be complemented by work with various information sources, with a focus on their interpretation, as well as specific examples of different types of territories.         127YNUP       Town and Country Planning Instruments       Z,ZK       6         During the lectures, students will learn about spatial planning tools, their acquisition, processing and approval. The emphasis in the lectures is on land-use planning documentation as preparation for a special professional qualification or for the practice of a designer. As part of the exercise, students will acquire knowledge of the organization of territorial Management       Z,ZK       6         127YUZM       Territorial Management       Z,ZK       6         0uring the lectures, students will pachicing he project of a development location with a simulation of real project management with participation.	Qualifying thesis	completing the Master's degree. The Department of Urban Design, Town and Regional Planning enters theses in the study program	me Architecture an	d Building
The aim of the course is to introduce students to landscape and landscape planning in different processes and phases of planning. The course will introduce the genesis of our landscape, the ways and forms of human influence on the landscape before and now, in the post-agaraian and post-industrial era, which are necessary for understanding the laws and processes occurring in today's landscape. Students are encouraged to look independently at the landscape, to search for its natural, cultural, historical and civilizational values. They are introduced to the forms and possibilities, mainly legislative, of its protection and to the various ways of landscape planning, including the application of land-use planning tools in the protection and treation of the landscape, with emphasis on respect for the ecological, productive, residential, recreational and aesthetic aspects of the territory. Lectures and exercises will be complemented by work with various information sources, with a focus on their interpretation, as well as specific examples of lifferent types of territorise. <ul> <li><b>127YNUP</b></li> <li><b>Town and Country Planning Instruments</b></li> <li><b>Z,ZK</b></li> <li><b>6</b></li> </ul> <li>During the lectures, students will learn about spatial planning tools, their acquisition, processing and approval. The emphasis in the lectures is on land-use planning documentation as perparation for a special proteinal qualification or for the practice of a designer. As part of the exercise, students will acquire knowledge of the organization of territorial Barl approximing units, especially with an emphasis on understanding the management of municipalities. In addition to the territorial development itself, emphasis is placed on understanding the financial ties in relation to the state budget, on the provision of a cesseary services mainly oriented towards public infrastructure and the econonic aspects o</li>		Sciences (majoring in Architecture and Urbanism) and Civil Engineering, majoring in Environmental Engineering.		
the ways and forms of human influence on the landscape before and now, in the post-agrarian and post-industrial era, which are necessary for understanding the laws and processes occurring in today's landscape. Students are encouraged to look independently at the landscape, to search for its natural, cultural, historical and civilizational values. They are introduced to the forms and possibilities, mainly legislative, of its protection and to the various ways of landscape planning, including the application of land-use planning tools in the protections and to the various ways of landscape planning, including the application of land-use planning tools in the protections and to the various ways of landscape planning, including the application of land-use planning tools in the protections and to the various ways of landscape planning, including the application of the territory. Lectures and exercises will be complemented by work with various information sources, with a focus on their interpretation, as well as specific examples of different types of territories.          127YNUP       Town and Country Planning tools, their acquisition, processing and approval. The emphasis in the lectures is understanding techniques, i.e. all spatial planning tools and outputs using GIS-based programs.         127YUZM       Territorial Management       Z,ZK       6         During the lectures, students will acquire knowledge of the organization of territorial self governing units, especially with an emphasis on understanding the management of municipalities. In addition to the territorial development tiself, emphasis is placed on understanding the financial tise in relation to the state budget, on the provision of necessary services mainly oriented towards public infrastructure and masonry structures and materials in relation with the impact on the environment, aspects of sustainable construction, energy consumption, renewa	127YKRP	Landscape Planning	Z,ZK	6
occurring in today's landscape. Students are encouraged to look independently at the landscape, to search for its natural, cultural, historical and civilizational values. They are introduced to the forms and possibilities, mainly legislative, of its protection and to the various ways of landscape planning, including the application of land-use planning tools in the protection and creation of the landscape, with emphasis on respect for the ecological, productive, residential, recreational and asthetic aspects of the territory. Lectures and exercises will be complemented by work with various information sources, with a focus on their interpretation, as well as specific examples of different types of territories.       6 <b>127YNUP</b> Town and Country Planning Instruments       Z,ZK       6         During the lectures, students will learn about spatial planning tools, i.e. all spatial planning tools, their acquisition, processing and approval. The emphasis in the lectures is utdents will acquire knowledge of the organization of theritorial Management       Z,ZK       6         During the lectures, students will acquire knowledge of the territorial development itself, emphasis is placed on understanding the financial ties in relation to the state budget, on the provision of necessary services mainly oriented towards public infrastructure and the economic aspects of territorial development. The lectures are supplemented by at least one excursion to a selected town hall and municipal office. The exercise is designed as an urban project a development location with a simulation of real project management with participation.       KZ       4         133DISZ       Project       KZ       4         133DISZ       Diploma Thesis       Z	The aim of the cour	se is to introduce students to landscape and landscape planning in different processes and phases of planning. The course will introduc	e the genesis of ou	r landscape,
to the forms and possibilities, mainly legislative, of its protection and to the various ways of landscape planning, including the application of land-use planning tools in the protection and creation of the landscape, with emphasis on respect for the ecological, productive, residential, recreational and aesthetic aspects of the territory. Lectures and exercises will be complemented by work with various information sources, with a focus on their interpretation, as well as specific examples of different types of territories. <b>127YUUP</b> Town and Country Planning Instruments Z,ZK 6 During the lectures, students will earn about spatial planning tochniques, i.e. all spatial planning tools, their acquisition, processing and approval. The emphasis in the lectures is on land-use planning documents and land-use planning documentation as preparation for a special professional qualification or for the practice of a designer. As part of the exercise, students will practically verify their theoretical knowledge in the analysis of spatial planning tools and outputs using GIS-based programs. <b>127YUZM</b> Territorial Management Territorial Management Z,ZK 6 During the lectures, students will acquire knowledge of the organization of territorial self-governing units, especially with an emphasis on understanding the management of municipal oriented towards public infrastructure and the economic spects of territorial development. The lectures are supplemented by at least one excursion to a selected town hall and municipal office. The exercise is designed as an urban project of a development location with a simulation of real project management with participation. <b>133DISZ</b> Project KZ 4 The subject is focused on concrete and masonry structures and materials in relation with the inspect of discoveries from the literature, the execution and anysis of experiments, etc. <b>133DIPM</b> Diploma Theesis Z 30 In the diploma thesis, the student deals with a topic chosen by the department from those regularly announced by the department. I	the ways and forms	of human influence on the landscape before and now, in the post-agrarian and post-industrial era, which are necessary for understa	anding the laws an	d processes
and creation of the landscape, with emphasis on respect for the ecological, productive, residential, recreational and aesthetic aspects of the territory. Lectures and exercises will be complemented by work with various information sources, with a focus on their interpretation, as well as specific examples of different types of territories.          127YNUP       Town and Country Planning Instruments       Z,ZK       6         During the lectures, students will lean about spatial planning dochiques, i.e. all spatial planning tools, their acquisition, processing and approval. The emphasis in the lectures is students will practically verify their theoretical knowledge in the analysis of spatial planning tools and outputs using GIS-based programs.         127YUZM       Territorial Management       Z,ZK       6         During the lectures, students will acquise knowledge of the organization of territorial self-governing units, especially with an emphasis on understanding the management of municipalities. In addition to the territorial development itself, emphasis is placed on understanding the financial lies in relation to the state budget, on the provision of necessary services mainly oriented towards public infrastructure and the economic aspects of territorial development. The lectures are supplemented by at least one excursion to a selected town hall and municipal office. The exercise is designed as an urban project of a development the environment, aspects of sustainable construction, energy consumption, renewable sources, etc. The content of the work can be the elaboration of a research study comprising the processing of discoveries from the literature, the execution and analysis of acypriments, etc.         133DPM       Diploma Thesis       Z       30         1435DPM <t< td=""><td>occurring in today's</td><td>landscape. Students are encouraged to look independently at the landscape, to search for its natural, cultural, historical and civilization</td><td>nal values. They are</td><td>e introduced</td></t<>	occurring in today's	landscape. Students are encouraged to look independently at the landscape, to search for its natural, cultural, historical and civilization	nal values. They are	e introduced
complemented by work with various information sources, with a focus on their interpretation, as well as specific examples of different types of territories.           127YNUP         Town and Country Planning Instruments         Z,ZK         6           During the lectures, students will learn about spatial planning techniques, i.e. all spatial planning tools, their acquisition, processing and approval. The emphasis in the lectures is on land-use planning documentation as preparation for a special professional qualification or for the practice of a designer. As part of the exercise, students will practically verify their theoretical knowledge in the analysis of spatial planning tools and outputs using GIS-based programs.           127YUZM         Territorial Management         Z,ZK         6           During the lectures, students will acquire knowledge of the organization of territorial self-governing units, especially with an emphasis on understanding the financial les in relation to the stretovision of necessary services mainly oriented towards public infrastructure and the economic aspects of territorial development. The lectures are supplemented by at least one excursion to a selected town hall and municipal office. The exercise is designed as an urban project of a development location with a simulation of real project management with participation.         KZ         4           133DISZ         Project         KZ         4           133DPM         Diploma Thesis         2         30           In accordance with a thesis proposal.         In accordance with a thesis proposal.         2         30           133DPM <td< td=""><td>to the forms and p</td><td>ossibilities, mainly legislative, of its protection and to the various ways of landscape planning, including the application of land-use p</td><td>lanning tools in the</td><td>protection</td></td<>	to the forms and p	ossibilities, mainly legislative, of its protection and to the various ways of landscape planning, including the application of land-use p	lanning tools in the	protection
127YNUP         Town and Country Planning Instruments         Z,ZK         6           During the lectures, students will learn about spatial planning techniques, i.e. all spatial planning tools, their acquisition, processing and approval. The emphasis in the lectures is on land-use planning documents and land-use planning documentation as preparation for a special professional qualification or for the practice of a designer. As part of the exercise, students will practically verify their theoretical knowledge in the analysis of spatial planning tools and outputs using GIS-based programs.           127YUZM         Territorial Management         Z,ZK         6           During the lectures, students will acquire knowledge of the organization of territorial self-governing units, especially with an emphasis on understanding the management of municipalities. In addition to the territorial development itself, emphasis is placed on understanding the financial ties in relation to the state budget, on the provision of necessary services mainly oriented towards public infrastructure and the economic aspects of territorial development. The lectures are supplemented by at least one excursion to a selected town hall and municipal office. The exercise is designed as an urban project of a development. The lectures are supplemented by at least one excursion, energy consumption, renewable sources, etc. The content of the work can be the elaboration of a research study comprising the processing of discoveries from the literature, the execution and analysis of experiments, etc.           133DPM         Diploma Thesis In accordance with a thesis proposal.         Z         30           135DISZ         Project         KZ         4           135DPM </td <td>and creation of the</td> <td>e landscape, with emphasis on respect for the ecological, productive, residential, recreational and aesthetic aspects of the territory. L</td> <td>ectures and exerci</td> <td>ses will be</td>	and creation of the	e landscape, with emphasis on respect for the ecological, productive, residential, recreational and aesthetic aspects of the territory. L	ectures and exerci	ses will be
During the lectures, students will learn about spatial planning techniques, i.e. all spatial planning tools, their acquisition, processing and approval. The emphasis in the lectures is on land-use planning documents and land-use planning documentation as preparation for a special professional qualification or for the practice of a designer. As part of the exercise, students will practically verify their theoretical knowledge in the analysis of spatial planning tools and outputs using GIS-based programs.         127YUZM       Image: Comparison of the practical special planning tools and outputs using GIS-based programs.       Z,ZK       6         During the lectures, students will acquire knowledge of the organization of territorial self-governing units, especially with an emphasis on understanding the management of municipal ities. In addition to the territorial development itself, emphasis is placed on understanding the financial ties in relation to the state budget, on the provision of necessary services mainly oriented towards public infrastructure and the economic aspects of territorial development. The lectures are supplemented by at least one excursion to a selected town hall and municipal office. The exercise is designed as an urban project of a development location with a simulation of real project management of the work can be the elaboration of a research study comprising the processing of discoveries from the literature, the execution and analysis of experiments, etc.         133DPM       Diploma Thesis       Z       30         133DPM       Diploma Thesis       Z       30         133DPM       Diploma Thesis       Z       30         In accordance with a thepichones by the department from those regularly announce	com	plemented by work with various information sources, with a focus on their interpretation, as well as specific examples of different typ	es of territories.	
Iand-use planning documents and land-use planning documentation as preparation for a special professional qualification or for the practice of a designer. As part of the exercise, students will practically verify their theoretical knowledge in the analysis of spatial planning tools and outputs using GIS-based programs.         127YUZM       Crititorial Management       Z,ZK       6         During the lectures, students will acquire knowledge of the organization of territorial self-governing units, especially with an emphasis on understanding the financial ties in relation to the state budget, on the provision of necessary services mainly oriented towards public infrastructure and the economic aspects of territorial development. The lectures are supplemented by at least one excursion to a selected town hall and municipal office. The exercise is designed as an urban project of a development location with a simulation of real project management with participation.       KZ       4         133DISZ       Project       KZ       4         The subject is focused on concrete and masonry structures and materials in relation to with the impact on the environment, aspects of sustainable construction, energy consumption, renewable sources, etc. The content of the work can be the elaboration of a research study comprising the processing of discoveries from the literature, the execution and analysis of an accordance with a thesis proposal.       30         133DISZ       Diploma Thesis       Z       30         133DPM       Diploma Thesis       Z       30         In accordance with a thesis proposal.       Z       30         In the diploma the	127YNUP	Town and Country Planning Instruments	Z,ZK	6
students will practically verify their theoretical knowledge in the analysis of spatial planning tools and outputs using GIS-based programs.         127YUZM       Territorial Management       Z,ZK       6         During the lectures, students will acquire knowledge of the organization of territorial self-governing units, especially with an emphasis on understanding the management of municipalities. In addition to the territorial development titself, emphasis is placed on understanding the financial ties in relation to the state budget, on the provision of necessary services mainly oriented towards public infrastructure and the economic aspects of territorial development. The lectures are supplemented by at least one excursion to a selected town hall and municipal office. The exercise is designed as an urban project of a development to lecation with a simulation of real project management with participation.       KZ       4         133DISZ       Project       KZ       4         The subject is focused on concrete and masonry structures and materials in relation with the impact on the environment, aspects of sustainable construction, energy consumption, renewable sources, etc. The content of the work can be the elaboration of a research study comprising the processing of discoveries from the literature, the execution and analysis of experiments, etc.       30         133DISZ       Diploma Thesis       Z       30         135DISZ       Project       KZ       4         135DISZ       Project       KZ       4       30         In the diploma thesis, the student deals with a topic chosen by the department	During the lecture	s, students will learn about spatial planning techniques, i.e. all spatial planning tools, their acquisition, processing and approval. The	emphasis in the lea	ctures is on
127YUZM       Territorial Management       Z,ZK       6         During the lectures, students will acquire knowledge of the organization of territorial self-governing units, especially with an emphasis on understanding the management of municipalities. In addition to the territorial development itself, emphasis is placed on understanding the financial ties in relation to the state budget, on the provision of necessary services mainly oriented towards public infrastructure and the economic aspects of territorial development. The lectures are supplemented by at least one excursion to a selected town hall and municipal office. The exercise is designed as an urban project of a development location with a simulation of real project management with participation.       KZ       4         133DISZ       Project       KZ       4         The subject is focused on concrete and masonry structures and materials in relation with the impact on the environment, aspects of sustainable construction, energy consumption, renewable sources, etc. The content of the work can be the elaboration of a research study comprising the processing of discoveries from the literature, the execution and analysis of experiments, etc.       Z       30         133DISZ       Diploma Thesis       Z       30         135DISZ       Project       KZ       4         135DISZ       Project       Z       30         In accordance with a thesis proposal.       Z       30         135DISZ       Project       KZ       4         135DISZ       Diploma Thesis       Z	land-use planning	g documents and land-use planning documentation as preparation for a special professional qualification or for the practice of a desi-	gner. As part of the	exercise,
During the lectures, students will acquire knowledge of the organization of territorial self-governing units, especially with an emphasis on understanding the management of municipalities. In addition to the territorial development itself, emphasis is placed on understanding the financial ties in relation to the state budget, on the provision of necessary services mainly oriented towards public infrastructure and the economic aspects of territorial development. The lectures are supplemented by at least one excursion to a selected town hall and municipal office. The exercise is designed as an urban project of a development location with a simulation of real project management with participation.       KZ       4         133DISZ       Project       KZ       4         The subject is focused on concrete and masonry structures and materials in relation with the impact on the environment, aspects of sustainable construction, energy consumption, renewable sources, etc. The content of the work can be the elaboration of a research study comprising the processing of discoveries from the literature, the execution and analysis of experiments, etc.         133DPM       Diploma Thesis       Z       30         135DISZ       Project       KZ       4         135DPM       Diploma Thesis       Z       30         In the diploma thesis, the student deals with a topic chosen by the department from those regularly announced by the department. It addresses, for example, problems related to the design and construction of geotechnical structures, civil engineering structures, special foundations for industrial, transport, housing and water management structures, earth and rock structures in complex cases and waste disposal struct		students will practically verify their theoretical knowledge in the analysis of spatial planning tools and outputs using GIS-based pr	ograms.	
In addition to the territorial development itself, emphasis is placed on understanding the financial ties in relation to the state budget, on the provision of necessary services mainly oriented towards public infrastructure and the economic aspects of territorial development. The lectures are supplemented by at least one excursion to a selected town hall and municipal office. The exercise is designed as an urban project of a development location with a simulation of real project management with participation.          133DISZ       Project       KZ       4         The subject is focused on concrete and masonry structures and materials in relation with the impact on the environment, aspects of sustainable construction, energy consumption, renewable sources, etc. The content of the work can be the elaboration of a research study comprising the processing of discoveries from the literature, the execution and analysis of experiments, etc.         133DPM       Diploma Thesis       Z       30         135DISZ       Project       KZ       4         133DPM       Diploma Thesis       Z       30         135DISZ       Project       KZ       4         135DISZ       Project       KZ       4         135DISZ       Objeloma Thesis       Z       30         In accordance with a thesis proposal.       Z       30         In the diploma thesis, the student deals with a topic chosen by the department from those regularly announced by the department. It addresses, for example, problems related to the design and construction of geotechnical structures, civil engineering structures,	127YUZM	Territorial Management	Z,ZK	6
oriented towards public infrastructure and the economic aspects of territorial development. The lectures are supplemented by at least one excursion to a selected town hall and municipal office. The exercise is designed as an urban project of a development location with a simulation of real project management with participation.         133DISZ       Project       KZ       4         The subject is focused on concrete and masonry structures and materials in relation with the impact on the environment, aspects of sustainable construction, energy consumption, renewable sources, etc. The content of the work can be the elaboration of a research study comprising the processing of discoveries from the literature, the execution and analysis of experiments, etc.         133DISZ       Diploma Thesis       Z       30         135DISZ       Project       KZ       4         135DISZ       Project       Z       30         In accordance with a thesis proposal.       In accordance with a thesis proposal.       Z       30         In the diploma thesis, the student deals with a topic chosen by the department from those regularly announced by the department. It addresses, for example, problems related to the design and construction of geotechnical structures, civil engineering structures, special foundations for industrial, transport, housing and water management structures, earth and rock structures in complex cases and waste disposal structures. The thesis builds on and develops the findings of the thesis project.         135DISZ       Project       KZ       4         136DISZ       Project <t< td=""><td>During the lectures,</td><td>students will acquire knowledge of the organization of territorial self-governing units, especially with an emphasis on understanding the</td><td>management of m</td><td>unicipalities.</td></t<>	During the lectures,	students will acquire knowledge of the organization of territorial self-governing units, especially with an emphasis on understanding the	management of m	unicipalities.
office. The exercise is designed as an urban project of a development location with a simulation of real project management with participation.         133DISZ       Project       KZ       4         The subject is focused on concrete and masonry structures and materials in relation with the impact on the environment, aspects of sustainable construction, energy consumption, renewable sources, etc. The content of the work can be the elaboration of a research study comprising the processing of discoveries from the literature, the execution and analysis of experiments, etc.         133DPM       Diploma Thesis       Z       30         135DISZ       Project       KZ       4         135DPM       Diploma Thesis       Z       30         135DISZ       Project       KZ       4         135DPM       Diploma Thesis       Z       30         In accordance with a thesis proposal.       Z       30         In the diploma thesis, the student deals with a topic chosen by the department from those regularly announced by the department. It addresses, for example, problems related to the design and construction of geotechnical structures, civil engineering structures, special foundations for industrial, transport, housing and water management structures, earth and rock structures in complex cases and waste disposal structures. The thesis builds on and develops the findings of the thesis project.         136DISZ       Project       KZ       4				-
133DISZ       Project       KZ       4         The subject is focused on concrete and masonry structures and materials in relation with the impact on the environment, aspects of sustainable construction, energy consumption, renewable sources, etc. The content of the work can be the elaboration of a research study comprising the processing of discoveries from the literature, the execution and analysis of experiments, etc.         133DPM       Diploma Thesis       Z       30         135DISZ       Project       KZ       4         135DPM       Diploma Thesis       Z       30         In accordance with a thesis proposal.       Imaccordance with a thesis proposal.       Z       30         In the diploma thesis, the student deals with a topic chosen by the department from those regularly announced by the department. It addresses, for example, problems related to the design and construction of geotechnical structures, civil engineering structures, special foundations for industrial, transport, housing and water management structures, earth and rock structures in complex cases and waste disposal structures. The thesis builds on and develops the findings of the thesis project.         136DISZ       Project       KZ       4	oriented towards pu			nd municipal
The subject is focused on concrete and masonry structures and materials in relation with the impact on the environment, aspects of sustainable construction, energy consumption, renewable sources, etc. The content of the work can be the elaboration of a research study comprising the processing of discoveries from the literature, the execution and analysis of experiments, etc.         133DPM       Diploma Thesis       Z       30         In accordance with a thesis proposal.       Imaccordance with a thesis proposal.       Imaccordance with a thesis proposal.       Imaccordance with a thesis proposal.         135DISZ       Project       KZ       4         135DPM       Diploma Thesis       Z       30         In the diploma thesis, the student deals with a topic chosen by the department from those regularly announced by the department. It addresses, for example, problems related to the design and construction of geotechnical structures, civil engineering structures, special foundations for industrial, transport, housing and water management structures, earth and rock structures in complex cases and waste disposal structures. The thesis builds on and develops the findings of the thesis project.         136DISZ       Project       KZ       4		office. The exercise is designed as an urban project of a development location with a simulation of real project management with pa		1
renewable sources, etc. The content of the work can be the elaboration of a research study comprising the processing of discoveries from the literature, the execution and analysis of experiments, etc.          133DPM       Diploma Thesis       Z       30         In accordance with a thesis proposal.         135DISZ       Project       KZ       4         135DPM       Diploma Thesis       Z       30         In the diploma thesis, the student deals with a topic chosen by the department from those regularly announced by the department. It addresses, for example, problems related to the design and construction of geotechnical structures, civil engineering structures, special foundations for industrial, transport, housing and water management structures, earth and rock structures in complex cases and waste disposal structures. The thesis builds on and develops the findings of the thesis project.         136DISZ       Project       KZ       4				
experiments, etc.         133DPM       Diploma Thesis In accordance with a thesis proposal.       Z       30         135DISZ       Project       KZ       4         135DPM       Diploma Thesis       Z       30         In the diploma thesis, the student deals with a topic chosen by the department from those regularly announced by the department. It addresses, for example, problems related to the design and construction of geotechnical structures, civil engineering structures, special foundations for industrial, transport, housing and water management structures, earth and rock structures in complex cases and waste disposal structures. The thesis builds on and develops the findings of the thesis project.       KZ       4         136DISZ       Project       KZ       4				
133DPM       Diploma Thesis In accordance with a thesis proposal.       Z       30         135DISZ       Project       KZ       4         135DPM       Diploma Thesis       Z       30         In the diploma thesis, the student deals with a topic chosen by the department from those regularly announced by the department. It addresses, for example, problems related to the design and construction of geotechnical structures, civil engineering structures, special foundations for industrial, transport, housing and water management structures, earth and rock structures in complex cases and waste disposal structures. The thesis builds on and develops the findings of the thesis project.         136DISZ       Project       KZ       4	renewable sources		, the execution and	i analysis of
In accordance with a thesis proposal.         135DISZ       Project       KZ       4         135DPM       Diploma Thesis       Z       30         In the diploma thesis, the student deals with a topic chosen by the department from those regularly announced by the department. It addresses, for example, problems related to the design and construction of geotechnical structures, civil engineering structures, special foundations for industrial, transport, housing and water management structures, earth and rock structures in complex cases and waste disposal structures. The thesis builds on and develops the findings of the thesis project.         136DISZ       Project       KZ       4				1
135DISZ     Project     KZ     4       135DPM     Diploma Thesis     Z     30       In the diploma thesis, the student deals with a topic chosen by the department from those regularly announced by the department. It addresses, for example, problems related to the design and construction of geotechnical structures, civil engineering structures, special foundations for industrial, transport, housing and water management structures, earth and rock structures in complex cases and waste disposal structures. The thesis builds on and develops the findings of the thesis project.       136DISZ     Project     KZ     4	133DPM	Diploma Thesis	Z	30
135DPM       Diploma Thesis       Z       30         In the diploma thesis, the student deals with a topic chosen by the department from those regularly announced by the department. It addresses, for example, problems related to the design and construction of geotechnical structures, civil engineering structures, special foundations for industrial, transport, housing and water management structures, earth and rock structures in complex cases and waste disposal structures. The thesis builds on and develops the findings of the thesis project.       KZ       4		In accordance with a thesis proposal.		
In the diploma thesis, the student deals with a topic chosen by the department from those regularly announced by the department. It addresses, for example, problems related to the design and construction of geotechnical structures, civil engineering structures, special foundations for industrial, transport, housing and water management structures, earth and rock structures in complex cases and waste disposal structures. The thesis builds on and develops the findings of the thesis project.           136DISZ         Project         KZ         4	135DISZ	Project	KZ	4
design and construction of geotechnical structures, civil engineering structures, special foundations for industrial, transport, housing and water management structures, earth and rock structures in complex cases and waste disposal structures. The thesis builds on and develops the findings of the thesis project.         136DISZ       Project       KZ       4	135DPM	Diploma Thesis	Z	30
structures in complex cases and waste disposal structures. The thesis builds on and develops the findings of the thesis project.         136DISZ       Project       KZ       4	In the diploma the	sis, the student deals with a topic chosen by the department from those regularly announced by the department. It addresses, for exa	ample, problems re	lated to the
136DISZ Project KZ 4	design and constru	ction of geotechnical structures, civil engineering structures, special foundations for industrial, transport, housing and water manager	nent structures, ea	rth and rock
		structures in complex cases and waste disposal structures. The thesis builds on and develops the findings of the thesis projection	ect.	
Propagation of the basis desumants for the assignment of a master thesis and their processing. Lastures by expects from the practice (read design construction technology) information	136DISZ	Project	KZ	4
reparation of the basic documents for the assignment of a master mesis and their processing. Lectures by experts norm the practice (road design, construction technology, miormation	Preparation of the b	basic documents for the assignment of a master thesis and their processing. Lectures by experts from the practice (road design, const	ruction technology	information
about new procedures and software)		about new procedures and software)		

126001	Diplomo Theorie	7	20
136DPM	Diploma Thesis c of diploma theses can be a project, traffic surveys, research of selected issues with application in practice for various technical solution	∠ ∠	30
	e functionality of various materials for pavements, etc. In terms of design, the most common topics of theses are, for example, the des		
-	of a selected section of a road (bypass, flyover), the design of a road network in a selected area of the city, the design of a new const	-	
	design of an airport, heliport, etc. In terms of pavement structures and road construction technologies, the most frequent topics of worl		
of different materia	I solutions for asphalt or concrete pavements, including the relevant composite materials or input components (binders, aggregates, etc.	), assessment of th	e behaviour
	of a particular material or type of structure by laboratory methods, or carrying out simulations, etc.		
136SSZP	Road Structures and Environment	Z,ZK	6
The objective of th	e subject is to provide students a more detailed knowledge of environmental issues related to the design, technical solutions, technol	ogy and material b	ase of road
	emphasis on current needs and trends, which include both practical issues - topsoil management, burial elaboration or externalities of the	• ·	
as well as new app	proaches such as the progressive development of the application of LCA analyses, approaches to the possibility of assessing the carbo	•	construction
	solutions or the use of different types of alternative materials in the framework of an active approach to the circular econom		
137DISZ	Project	KZ	4
	pject, intensive preparation for the diploma thesis is already taking place. In After agreement with the teacher, a preliminary thesis top		
should responsible	y prepare for the creation of the work itself by studying the documents, creating research, and obtaining background materials (e.g. m	aps). Furthermore	, he should
	determine the outline of the work and master the work with any measuring technique, etc.		
137DPM	Diploma Thesis	Z	30
	s is the final complex work prepared by students at the end of their university studies. The diploma thesis describes the given issue in a		
	ttes the ability to work independently and an engineering approach. The diploma thesis takes the form of either a project (reconstruction		-
study of new railwa	ay lines), a research (processing of an overview in a certain area) or a laboratory (including the execution and evaluation of specified la	boratory tests), or	a combined
	one.		
137YKSZ	Rail construction and environment	Z,ZK	6
	of noise and vibration on human. Assessment of varied transport noise Acoustic levels. Noise maps. Noise study. Traffic noise charac		t transport
	ns. Propagation of noise. Ways of environment protection before adverse impacts of transport noise (urban, architectural, traffic-organ	<b>.</b>	
141DISZ	Project	KZ	4
	Not applicable.	_	
141DPM	Diploma Thesis	Z	30
I he course enable	es the student to prepare, write and submit a diploma thesis. The Department of Hydraulics and Hydrology provides consultations in the	ne selected topic, e	especially in
	the person of the supervisor of the thesis.		-
141EHY	Methods of modelling in hydraulics nad hydrology	Z,ZK	5
The course is or	iented mainly on the study of precipitation-runoff genesis in a catchment and related water phenomena at the Earth. In the focus of the	is subject are envir	ronmental
	impacts of development activities with a special focus of water management in catchment and lakes.		
141YHPM	Hydrological Processes in Urban Catchments	Z,ZK	6
-	ological processes in urbanized catchments and their mathematical description. Rainfall and rainfall data. Impacts of climate change		
hydrology. Storr	nwater runoff from urbanized areas - generation and transport. Water transport in drainage systems. Hydrological processes in blue-g	reen infrastructure	objects.
	Measurement and monitoring of runoff, data processing. Simulation models and system analysis.	771	
141YRIF	Project Design 2	Z,ZK	6
	ists of two parts: 1. river engineering, where the focus is not only on purely technical structural interventions but also on measures clo		
	nciples of considerate anthropogenic activities directly in and near watercourses. Such activities are aimed at ensuring the main requirec f flowing surface waters, while not leading to damage and degradation of the river landscape, but promoting its protection against all rele		-
	st important geomorphic manifestations in the river landscape in relation to the activities of flowing water. Their understanding provide		-
	tion and synthesis of available knowledge on alluvial flows in the field of river engineering. The aim is to recognize the different charac		
	es, including the dynamics of their changes, and to identify the processes shaping the river channel and its floodplain, including an un		
	o includes a qualitative and quantitative description of processes such as the onset of sediment particle movement and sediment movem		
	hannel or the formation and development of bed formations, the mechanism of undercutting and bank slumping, deepening or softenir		
	art of this is the study of the response of modified watercourses to channel intervention caused by sudden natural changes or anthrop	-	
landscape. The co	mmon basis for both parts is a summary of the theoretical knowledge and practical principles of advanced hydraulics of fixed-bed char	nels in the field of r	non-uniform
	and spatially complex flow, turbulent phenomena or resistance caused by granular channel bed or (riparian) vegetation exposed to	the flow.	
142DISZ	Project	KZ	4
	ninar is focused on the preparation of the student's final thesis. It is an independent work of the student under the guidance of the the	I I	
activity is focused	on research, preparation of documents and data and carrying out his/her own creative work with the obtained documents so that the a	actual preparation of	of the thesis
plan and docum	entation proceeds smoothly and at the appropriate professional level. In the case of studies, this involves the preparation, processing	and evaluation of o	data from
various data sourc	es. In the case of design work, the preparation of documents and data is even broader by the field work (site survey and any additional w	ork - surveying, doo	cumentation
	of any changes compared to the documents, etc.).		
142DPM	Diploma Thesis	Z	30
The	work is an individual activity of the student in the preparation of the topic of the final thesis for the period of study on the assigned pre-	ofessional topic.	
143DISZ	Project	KZ	4
	collection and preparation of data and sources for diploma thesis according to individual specification	·	
143DPM	Diploma Thesis	Z	30
	Diploma thesis is selected by the student at one of departments, involved within study program, according to his specific inter	est.	
143HPVO	Groundwater Hydraulics	Z,ZK	5
The course deal	s with the problem of groundwater flow in saturated rock environments. The introduction of the course is devoted to the theoretical ba	ckground and math	nematical
description of grou	undwater flow. The next part is devoted to simplified solutions of basic problems - flow through phreatic and confined aquifers, seepag	e through an earth	block, flow
in the vicinity of	wells. At the end of the semester, students will get acquainted with the method of numerical modelling of groundwater flow, using spe	cialized software to	solve an
	individual problem.		
143RPZP	Environmental Decision Making	Z,ZK	5
	Decision making in water and environmental management - decision (individual and group decision), operational games	· · · · · ·	
143YMPP			
	Surface processess modelling	Z,ZK	6
Getting in the princ	Surface processess modelling ciples of mathematical modeling within watershed management. There will be presented two up to three mathematical simulation mod	· · ·	
		els (depending on	

143YPVT	Water Flow and Solute Transport in Soils	Z,ZK	6
Flow of water amd	solute transport in soil profile in engineering practice. Hydraulic properties of soil and rocky materials, methods of data analyses. Aprox	,	-
	nction parameter optimization, hydraulic conductivity function estimate. Dispersion characteristics determination. Field versus lab measu		
	modeling.		
143YTUV	Technical Structures on Small Watercourses	Z,ZK	6
Small watercours	ses have often been modified in recent years. The reason for their modification was usually flood protection of the inner city or drainage	works. In recent	years, the
trend towards the	e modification of watercourses has been reversed, with revitalisation measures and measures to increase water retention in the catchn	nent area and to	slow down
	runoff coming to the fore.		
144DISZ	Project	KZ	4
SEWERAGE: Da	ata collection and processing for a given site, design of scenarios of foul water drainage and storm water drainage or infiltration. WATER	R SUPPLY: Desig	n of water
supply of a given	site. Data collection, determination of the way of water supply. Design of feeding pipelines, water storage and main distribution pipeline	es. Drawing of sit	uation and
	longitudinal profile.		
144DPM	Diploma Thesis	Z	30
	Diploma Thesis concerning sewerage, waste water treatment, water suply, networks and balnology.		1
1440UUC	Urban Drainage and Water Quality	Z,ZK	7
144YDUV	Treatment and Distribution of Water	Z.ZK	6
		∠,∠r∖	0
The course deals	with the issue of water supply from the source, through the collection and treatment of raw water, accumulation and distribution of drink	,	-
	with the issue of water supply from the source, through the collection and treatment of raw water, accumulation and distribution of drink by specific customers (eg balneotechnical and food operations). The course also includes the basics of hydrochemistry and hydrobiolo	king water in the	appliance to
		king water in the	appliance to
	by specific customers (eg balneotechnical and food operations). The course also includes the basics of hydrochemistry and hydrobiolo	king water in the	appliance to
its subsequent use	by specific customers (eg balneotechnical and food operations). The course also includes the basics of hydrochemistry and hydrobiolo sources.	king water in the sogy of drinking water in the sogy of drinking wa	appliance to iter and thei
its subsequent use	by specific customers (eg balneotechnical and food operations). The course also includes the basics of hydrochemistry and hydrobiolo sources.  Ecotoxicology and Waste Water Treatment	king water in the sogy of drinking water in the sogy of drinking wa	appliance to iter and thei
its subsequent use	by specific customers (eg balneotechnical and food operations). The course also includes the basics of hydrochemistry and hydrobiolo sources. Ecotoxicology and Waste Water Treatment ic toxicological and ecological concepts in theory and practice. Groups of substances of toxicological and ecotoxicological significance pres	king water in the sogy of drinking water in the sogy of drinking wa	appliance to iter and their
its subsequent use 144YECO Ecotoxicology: bas 144YISB	by specific customers (eg balneotechnical and food operations). The course also includes the basics of hydrochemistry and hydrobiolo sources. Ecotoxicology and Waste Water Treatment ic toxicological and ecological concepts in theory and practice. Groups of substances of toxicological and ecotoxicological significance pres- compartments.	king water in the a gy of drinking wa Z,ZK sent in different er Z,ZK	appliance to tter and thei 6 nvironmenta
its subsequent use 144YECO Ecotoxicology: bas 144YISB	by specific customers (eg balneotechnical and food operations). The course also includes the basics of hydrochemistry and hydrobiolo sources. Ecotoxicology and Waste Water Treatment ic toxicological and ecological concepts in theory and practice. Groups of substances of toxicological and ecotoxicological significance pres- compartments. Urban networks and balneology	king water in the a gy of drinking wa Z,ZK sent in different er Z,ZK	appliance to tter and their 6 nvironmenta
its subsequent use 144YECO Ecotoxicology: basi 144YISB The cours 155SVPD	by specific customers (eg balneotechnical and food operations). The course also includes the basics of hydrochemistry and hydrobiolo sources. Ecotoxicology and Waste Water Treatment ic toxicological and ecological concepts in theory and practice. Groups of substances of toxicological and ecotoxicological significance pres- compartments. Urban networks and balneology e is focused on the principles of designing engineering networks such as water supply, sewerage, gas, electrical installations and swim	king water in the ggy of drinking wa Z,ZK sent in different er Z,ZK ming pool and s Z,ZK	appliance to tter and their 6 hvironmenta 6 pas. 7
its subsequent use 144YECO Ecotoxicology: basi 144YISB The cours 155SVPD	by specific customers (eg balneotechnical and food operations). The course also includes the basics of hydrochemistry and hydrobiolo sources. Ecotoxicology and Waste Water Treatment ic toxicological and ecological concepts in theory and practice. Groups of substances of toxicological and ecotoxicological significance pres- compartments. Urban networks and balneology e is focused on the principles of designing engineering networks such as water supply, sewerage, gas, electrical installations and swime Collection and visualization of spatial data	king water in the ggy of drinking wa Z,ZK sent in different er Z,ZK ming pool and s Z,ZK	appliance to tter and their 6 hvironmenta 6 pas. 7
its subsequent use 144YECO Ecotoxicology: bas 144YISB The cours 155SVPD * Photogrammetry 220DISZ	by specific customers (eg balneotechnical and food operations). The course also includes the basics of hydrochemistry and hydrobiolo sources.  Ecotoxicology and Waste Water Treatment ic toxicological and ecological concepts in theory and practice. Groups of substances of toxicological and ecotoxicological significance pres compartments. Urban networks and balneology e is focused on the principles of designing engineering networks such as water supply, sewerage, gas, electrical installations and swim Collection and visualization of spatial data - introduction * Photographic cameras * Photogrammetric methods * Intersection method, digital orthophoto * Stereophotogrammetry	king water in the a ggy of drinking water Z,ZK sent in different er Z,ZK ming pool and s Z,ZK * Analytical aeroo KZ	appliance to tter and thei ovironmenta pas. 7 triangulation 4
its subsequent use 144YECO Ecotoxicology: bas 144YISB The cours 155SVPD * Photogrammetry 220DISZ	by specific customers (eg balneotechnical and food operations). The course also includes the basics of hydrochemistry and hydrobiolo sources.  Ecotoxicology and Waste Water Treatment ic toxicological and ecological concepts in theory and practice. Groups of substances of toxicological and ecotoxicological significance pres compartments. Urban networks and balneology e is focused on the principles of designing engineering networks such as water supply, sewerage, gas, electrical installations and swim Collection and visualization of spatial data - introduction * Photographic cameras * Photogrammetric methods * Intersection method, digital orthophoto * Stereophotogrammetry Project	king water in the a ggy of drinking water Z,ZK sent in different er Z,ZK ming pool and s Z,ZK * Analytical aeroo KZ	appliance to tter and their 6 hvironmenta pas. 7 triangulation 4
its subsequent use 144YECO Ecotoxicology: bas 144YISB The cours 155SVPD * Photogrammetry 220DISZ	by specific customers (eg balneotechnical and food operations). The course also includes the basics of hydrochemistry and hydrobiolo sources.	king water in the a ggy of drinking water Z,ZK sent in different er Z,ZK ming pool and s Z,ZK * Analytical aeroo KZ	appliance to tter and thei ovironmenta pas. 7 triangulation 4

For updated information see <u>http://bilakniha.cvut.cz/en/FF.html</u> Generated: day 2025-07-19, time 18:05.