

Study plan

Name of study plan: obor Vodní hospodá ství a vodní stavby

Faculty/Institute/Others:

Department:

Branch of study guaranteed by the department: Water Management and Water Structures

Garantor of the study branch: prof. Dr. Ing. Václav Matoušek

Program of study: Civil Engineering

Type of study: Follow-up master full-time

Required credits: 90

Elective courses credits: 0

Sum of credits in the plan: 90

Note on the plan: tento studijní plán platí od nástupu 2016

Name of the block: Compulsory courses

Minimal number of credits of the block: 40

The role of the block: Z

Code of the group: NV20160100

Name of the group: obor Vodní hospodá ství a vodní stavby, 1. semestr

Requirement credits in the group: In this group you have to gain at least 20 credits

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

Credits in the group: 20

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
141APHD	Applied Hydrology Jaromír Dušek, Jana Votrubová, Tomáš Vogel, Michal Dohnal Michal Dohnal Tomáš Vogel (Gar.)	Z,ZK	5	2P+2C	Z	z
141HY3V	Hydraulics 3 Václav Matoušek, Jan Krupička, Mikoláš Kesely, Daniel Mattas Václav Matoušek	Z,ZK	5	2P+2C	Z	z
142VHSO	Water-management Schemes Pavel Fošumpaur, Martin Horský Martin Horský Pavel Fošumpaur (Gar.)	Z,ZK	5	3P+2C	Z	z
143HPVO	Groundwater Hydraulics Jana Valentová, Martina Sobotková, Tomáš Princ, Petr Koudelka Jana Valentová (Gar.)	Z,ZK	5	2P+2C	Z	z

Characteristics of the courses of this group of Study Plan: Code=NV20160100 Name=obor Vodní hospodá ství a vodní stavby, 1. semestr

141APHD	Applied Hydrology	Z,ZK	5
Transport processes in the atmosphere. Methods for estimating the intensity of evaporation. Snowmelt. Subsurface water. Soil-plant-atmosphere system. Hillslope hydrology. Watershed hydrology. Deterministic and stochastic modeling in hydrology.			
141HY3V	Hydraulics 3	Z,ZK	5
142VHSO	Water-management Schemes	Z,ZK	5
143HPVO	Groundwater Hydraulics	Z,ZK	5
Classification of aquifers. Fundamental principles of water flow in saturated porous media. Darcy's equation. The Dupuit approximation. Unconfined flow in aquifer, well hydraulics. Unsteady flow in aquifers. Numerical modelling of steady and unsteady groundwater flow, boundary conditions. Methods of hydraulic conductivity determination.			

Code of the group: NV20160200

Name of the group: obor Vodní hospodá ství a vodní stavby, 2. semestr

Requirement credits in the group: In this group you have to gain 20 credits

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

Credits in the group: 20

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
142PRVD	Management of Hydraulic Schemes Milan Zukal	Z,ZK	5	3P+2C	L	Z
144CIV	Water quality	Z,ZK	5	2P+2C		Z
144OUP	Urban drainage	Z,ZK	5	2P+2C		Z
144VHO4	Urban water management 4 Filip Horký	Z,ZK	5	2P+2C		Z

Characteristics of the courses of this group of Study Plan: Code=N20160200 Name=obor Vodní hospodá ství a vodní stavby, 2. semestr

142PRVD	Management of Hydraulic Schemes	Z,ZK	5
144CIV	Water quality Composition of natural waters. Types of water pollution, its effects and characteristics. Pollution sources. Running waters. Reservoirs. Water quality monitoring. Water quality classification in the Czech Republic. Water quality protection.	Z,ZK	5
144OUP	Urban drainage Field of urban drainage. Concepts and integrated assessment of the urban drainage system. Rainfall and rainfall data. Runoff from urban areas - effective rainfall, concentration and pollution. Discharge, pollutant transport and transformation in the sewer system. Waste water treatment plant during rainfall. Urban streams. Protective measures - stormwater management, tanks. treatment, real time control. Measurement and monitoring. Basics of modelling and simulation programmes.	Z,ZK	5
144VHO4	Urban water management 4 To get acquainted with new technologies in drinking water treatment and supply as well as water quality control at the treatment plant and in the distribution network. Current topics in water intake, accumulation and distribution.	Z,ZK	5

Name of the block: Compulsory elective courses

Minimal number of credits of the block: 20

The role of the block: PV

Code of the group: NV20160200_1

Name of the group: obor Vodní hospodá ství a vodní stavby, povinn volitelné p edm ty

Requirement credits in the group: In this group you have to gain at least 20 credits

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

Credits in the group: 20

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
141YTHH	Methods of modelling in hydraulics nad hydrology Michal Dohnal, Vojt ch Bareš, Aleš Havlík, Petr Sklená Michal Dohnal Michal Dohnal (Gar.)	KZ	5	4C	Z	PV
142YGPV	Geotechnical problems of hydraulic structures Miroslav Brou ek Miroslav Brou ek Miroslav Brou ek (Gar.)	Z,ZK	5	3P+1C	Z	PV
143YOPO	Watershed Management Petr Koudelka, Tomáš Dostál, Josef Krása, Miroslav Bauer, Petr Kavka Tomáš Dostál Tomáš Dostál (Gar.)	Z,ZK	5	2P+2C	Z	PV
144YCOV	Water and Waste Water Treatment Jaroslav Pollert, Jana Náb Iková Jana Náb Iková Jaroslav Pollert (Gar.)	Z,ZK	5	2P+2C	Z	PV
141YRIM	River Morphology and Engineering Petr Sklená	ZK	5	2P+2C	L	PV
142YOKV	Steel Constructions of Water Structures Petr Valenta	Z,ZK	5	3P+1C	L	PV
143YTPR	Transport Processes David Zumr	Z,ZK	5	2P+2C	L	PV
144YMB	Urban engineering and balneology Jana Náb Iková	ZK	5	4P	L	PV

Characteristics of the courses of this group of Study Plan: Code=N20160200_1 Name=obor Vodní hospodá ství a vodní stavby, povinn volitelné p edm ty

141YTHH	Methods of modelling in hydraulics nad hydrology	KZ	5
142YGPV	Geotechnical problems of hydraulic structures	Z,ZK	5
143YOPO	Watershed Management	Z,ZK	5
144YCOV	Water and Waste Water Treatment To learn technology, design and operation of various types of wastewater treatment plants (WWTPs) for different pollution sources.	Z,ZK	5
141YRIM	River Morphology and Engineering	ZK	5
142YOKV	Steel Constructions of Water Structures Loads to hydraulic structures. Dimensioning of construction elements. Combination of loads. Hydraulic valves and gates. Dynamic load and vibrations. Design of gates and valves accessory and facility. Pressure pipe with extreme diameters and special facilities for navigation (boat lifts). Aluminium structures.	Z,ZK	5

143YTPR	Transport Processes	Z,ZK	5
144YMB	Urban engineering and balneology	ZK	5

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

Minimal number of credits of the block: 30

The role of the block: S1

Code of the group: NV20160300_1

Name of the group: obor Vodní hospodá ství a vodní stavby, diplomová práce

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

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

Credits in the group: 30

Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
141DPM	Diploma Thesis Michal Dohnal	Z	30	24C	Z	S1
142DPM	Diploma Thesis Pavel Fošumpaur, Martin Horský, Miroslav Brou ek, Ladislav Satrapa, Petr Valenta, Michal Toman, Vladimír Med ický, Jitka Ku erová, Martin Králík, Miroslav Brou ek Ladislav Satrapa (Gar.)	Z	30	24C	Z,L	S1
143DPM	Diploma Thesis Martina Sobotková Petr Koudelka	Z	30	24C	Z	S1
144DPM	Diploma Thesis Iva iháková Bronislava Rohanová Alexander Grünwald (Gar.)	Z	30	24C	Z	S1

Characteristics of the courses of this group of Study Plan: Code=NV20160300_1 Name=obor Vodní hospodá ství a vodní stavby, diplomová práce

141DPM	Diploma Thesis in accordance with the thesis proposal	Z	30
142DPM	Diploma Thesis The contents of subject is individual study plan and consultation of thesis with head of thesis	Z	30
143DPM	Diploma Thesis in accordance with the thesis proposal	Z	30
144DPM	Diploma Thesis Diploma Thesis concerning sewerage, waste water treatment, water suply, networks and balnology.	Z	30

List of courses of this pass:

Code	Name of the course	Completion	Credits
141APHD	Applied Hydrology Transport processes in the atmosphere. Methods for estimating the intensity of evaporation. Snowmelt. Subsurface water. Soil-plant-atmosphere system. Hillslope hydrology. Watershed hydrology. Deterministic and stochastic modeling in hydrology.	Z,ZK	5
141DPM	Diploma Thesis in accordance with the thesis proposal	Z	30
141HY3V	Hydraulics 3	Z,ZK	5
141YRIM	River Morphology and Engineering	ZK	5
141YTHH	Methods of modelling in hydraulics nad hydrology	KZ	5
142DPM	Diploma Thesis The contents of subject is individual study plan and consultation of thesis with head of thesis	Z	30
142PRVD	Management of Hydraulic Schemes	Z,ZK	5
142VHSO	Water-management Schemes	Z,ZK	5
142YGPV	Geotechnical problems of hydraulic structures	Z,ZK	5
142YOKV	Steel Constructions of Water Structures Loads to hydraulic structures. Dimensioning of construction elements. Combination of loads. Hydraulic valves and gates. Dynamic load and vibrations. Design of gates and valves accessory and facility. Pressure pipe with extreme diameters and special facilities for navigation (boat lifts). Aluminium structures.	Z,ZK	5
143DPM	Diploma Thesis in accordance with the thesis proposal	Z	30

143HPVO	Groundwater Hydraulics	Z,ZK	5
Classification of aquifers. Fundamental principles of water flow in saturated porous media. Darcy's equation. The Dupuit approximation. Unconfined flow in aquifer, well hydraulics. Unsteady flow in aquifers. Numerical modelling of steady and unsteady groundwater flow, boundary conditions. Methods of hydraulic conductivity determination.			
143YOPO	Watershed Management	Z,ZK	5
143YTPR	Transport Processes	Z,ZK	5
144CIV	Water quality	Z,ZK	5
Composition of natural waters. Types of water pollution, its effects and characteristics. Pollution sources. Running waters. Reservoirs. Water quality monitoring. Water quality classification in the Czech Republic. Water quality protection.			
144DPM	Diploma Thesis	Z	30
Diploma Thesis concerning sewerage, waste water treatment, water supply, networks and balneology.			
144OUP	Urban drainage	Z,ZK	5
Field of urban drainage. Concepts and integrated assessment of the urban drainage system. Rainfall and rainfall data. Runoff from urban areas - effective rainfall, concentration and pollution. Discharge, pollutant transport and transformation in the sewer system. Waste water treatment plant during rainfall. Urban streams. Protective measures - stormwater management, tanks. treatment, real time control. Measurement and monitoring. Basics of modelling and simulation programmes.			
144VHO4	Urban water management 4	Z,ZK	5
To get acquainted with new technologies in drinking water treatment and supply as well as water quality control at the treatment plant and in the distribution network. Current topics in water intake, accumulation and distribution.			
144YCOV	Water and Waste Water Treatment	Z,ZK	5
To learn technology, design and operation of various types of wastewater treatment plants (WWTPs) for different pollution sources.			
144YMIB	Urban engineering and balneology	ZK	5

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