

Study programme: **Environmental Data Science**

Specialization: **Hydrology**

Type of study: **Bachelor study program**

Study form: **full time form of study**

Guarantor: **doc. Markonis, Ph.D.**

St. year: 1		2023/2024													
Code	Compulsory subjects	1st Semester winter						2nd Semester summer						Guarantee	
		Le	Pr	FE	ECTS	Cr	Ex	Le	Pr	FE	ECTS	Cr	Ex		
ETZ04E	Algorithm Development	2	1	-	5	z	zk							Ing. Havránek, Ph.D.	
ZEX101E	Fundamentals of Ecology	2	1	-	5	z	zk							doc. Morelli	
ZGX118E	Fundamentals of Physical Geography	2	-	-	5	z	zk							Ing. Lagner, Ph.D.	
ZVX103Z	Introduction to EDS	1	-	-	1	z								prof. Hanel	
TAZ40E	Mathematics with Applications I	2	2	-	5	z	zk							doc. Jedlička	
ZVX104Z	Productivity Tools	2	1	-	4	z								prof. Hanel	
ZVX113E	Programming in R	2	1	-	4	z	zk							Mgr. Martínková, Ph.D.	
ZVX112E	Earth System Sciences							2	2	-	5	z	zk	Ing. Mgr. Markonis, Ph.D.	
ZVX114E	Exploratory Data Analysis							2	1	-	5	z	zk	Ing. Mgr. Markonis, Ph.D.	
ZVX116E	Machine Learning							2	1	-	5	cr	ex	Ing. Havlíček, Ph.D.	
TAZ41E	Mathematics with Applications II							2	2	-	5	z	zk	doc. Jedlička	
ZVX115E	Meteorology and Climatology							2	-	-	5	z	zk	doc. Kyselý	
ETZ03E	Programming in Python							1	2	-	4			Ing. Stočes, Ph.D.	
Σ		13	6	0	29	0	0	11	8	0	29	1	1	58	

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St. year: 2	2023/2024														
Code	Compulsory subjects	3rd Semester winter						4th Semester summer						Guarantee	
		Le	Pr	FE	ECTS	Cr	Ex	Le	Pr	FE	ECTS	Cr	Ex		
ZVX105Z	Advanced R Programming	1	2	-	5	cr								prof. Hanel	
ZVX107E	Air Pollution	2	2	-	6	cr	ex							Mgr. D. Waldhauserová, Ph.D.	
ZGX103E	Geographic Information Systems I	2	2	-	6	cr	ex							doc. Moudrý	
ZVX108E	Hydrology	2	1	-	6	cr	ex							doc. Máca	
ZVX115Z	EDS Seminar							2	-	-	3	cr		prof. Hanel	
ZGX106E	Remote Sensing I							2	2	-	6	cr	ex	Ing. Moravec, Ph.D.	
ZVX117E	River Basin Management							2	1	-	5	cr	ex	doc. Máca	
ZGX109E	Statistics							2	2	-	6	cr	ex	Mgr. Zikmundová, Ph.D.	
ZVX118E	Stochastic Hydrology							2	1	-	5	cr	ex	Ing. Mgr. Markonis, Ph.D.	
	Optional subjects (min. 15 ECTS)										15				
Σ		7	7	0	23	4	3	10	6	0	40	5	4	63	

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St. year: 3	2023/2024														
Code	Compulsory subjects	3rd Semester winter						4th Semester summer						Guarantee	
		Le	Pr	FE	ECTS	Cr	Ex	Le	Pr	FE	ECTS	Cr	Ex		
ZVX119E	Urban Hydroinformatics	2	1	-	5	cr	ex							doc. Zeman	
ZVX120E	Water Quality	2	1	-	5	cr	ex							Ing. Sychová, Ph.D.	
ZXX101Z	Bachelor Thesis WS	-	-	-	5	cr								Supervisor	
ZXX109Z	Bachelor Thesis SS							-	-	-	25	cr		Supervisor	
	Optional subjects (min. 25 ECTS)				15						10				
Σ		4	2	0	30	3	2	0	0	0	35	1	0	65	

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Code	Optional subjects	3rd Semester winter						4th Semester summer						Guarantee
		Le	Pr	FE	ECTS	Cr	Ex	Le	Pr	FE	ECTS	Cr	Ex	
ZVX124E	Applied Environmental Statistics							2	1	-	5	cr	ex	Ing. Mgr. Markonis, Ph.D.
ZVX107Z	Big data analysis and cloud computing in R							2	1	-	5	cr		prof. Hanel
ZVX114Z	Hydroclimatological Data Analysis							2	1	-	5	cr	ex	Ing. Rakovec, Ph.D.
ZVX121E	Integrated water resources management							2	1	-	5	cr	ex	Mgr. Martínková, Ph.D.
ZVX151E	Multiphysics in Mathematical Modeling							2	1	-	5	cr	ex	doc. Kuráž
ETZ06E	Markup Languages							2	1	-	5	cr	ex	Ing. Vasilenko, Ph.D.
ETZ07E	Programming							2	1	-	5	cr	ex	Ing. Stočes, Ph.D.
ZVX123E	Sensors and Monitoring Systems							2	1	-	5	cr	ex	Ing. Vokoun

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St. year: 3		2023/2024													
Code	Optional subjects	5th Semester winter						6th Semester summer						Guarantee	
		Le	Pr	FE	ECTS	Cr	Ex	Le	Pr	FE	ECTS	Cr	Ex		
ZVX125E	Hydraulics	2	2	-	5	cr	ex							prof. Pech	
ZVX110Z	Interactive Web Visualization for Hydroclimatological Data	2	1	-	5	cr								Ing. Horáček, Ph.D.	
ETZ05E	JavaScript	2	1	-	5	cr	ex							Ing. Masner, Ph.D.	
ETZ08E	Web Design	2	1	-	5	cr	ex							Ing. Šimek, Ph.D.	
ZOX103E	Environmental Chemistry							2	2	-	6	cr	ex	prof. Chrástný	
ZVX109E	Global Change and Water Resources							2	1	-	5	cr	ex	Mgr. Martínková, Ph.D.	