



Faculty of
Environmental Sciences

Environmental Data Science

Study plan 2024/2025+

Faculty of Environmental Sciences, Czech University of Life Sciences Prague

1st year, winter term						
Code	Course name	Organization	Verification	ECTS	Guarantor	Course type
ETZ04E	Algorithm development	24L + 12P	Exam, Credit	5	Ing. Jan Pavlík, Ph.D.	
ZGX103E	Geographic Information Systems I	24L + 24P	Exam, Credit	6	doc. Ing. Vítězslav Moudrý, Ph.D.	PZ
ZVX103Z	Introduction to EDS	12L	Credit	1	prof. Ing. Martin Hanel, Ph.D.	
TAZ40E	Mathematics with applications I.	24L + 24P	Exam, Credit	5	doc. Ing. Milan Petřík, Ph.D.	ZT
ZGX118E	Fundamentals of Physical Geography	24L	Exam	5	Ing. Ondřej Lagner, Ph.D.	PZ
ZVX104Z	Productivity Tools	24L + 12P	Credit	4	Ing. Filip Strnad, Ph.D.	
	Programming in R fundamentals	12L	Credit	1	Mgr. Marta Martínková, Ph.D.	
ZVX113E	Programming in R	24L + 12P	Exam, Credit	4	Ing. Vojtěch Havlíček, Ph.D.	ZT
1st year, summer term						
Code	Course name	Organization	Verification	ECTS	Guarantor	Course type
ZVX121E	Integrated water resources management	24L + 12P	Exam, Credit	5	Ing. Petra Sychová, Ph.D.	PZ
ZGX105E	Geographic Information Systems II	24L + 24P	Exam, Credit	6	doc. Ing. Vítězslav Moudrý, Ph.D.	PZ
ZVX123E	Sensors and Monitoring Systems	24L + 12P	Exam, Credit	5	Ing. Martin Vokoun, Ph.D.	
	Data manipulation and visualization in R	12L + 24P	Credit	5	prof. Ing. Martin Hanel, Ph.D.	
TAZ41E	Mathematics with applications II.	24L + 24P	Exam	5	doc. Ing. Milan Petřík, Ph.D.	ZT
ZGX109E	Statistics	24L + 24P	Exam, Credit	5	Mgr. Markéta Zikmundová, Ph.D.	

ZT	Fundamental theory
PZ	Profiling course
L	Lecture
P	Practical

2nd year, winter term						
Code	Course name	Organization	Verification	ECTS	Guarantor	Course type
ZVX109E	Global Change and Water Resources	24L + 12P	Exam, Credit	5	prof. Ing. Martin Hanel, Ph.D.	ZT
ZGX107E	Geodatabases	12L + 24P	Exam, Credit	5	prof. Ing. Petra Šímová, Ph.D.	PZ
ZEX101E	Fundamentals of Ecology	24L + 12P	Exam, Credit	5	doc. Federico Morelli, Ph.D.	PZ
	Machine Learning Fundamentals	12L	Credit	1	Mgr. Marta Martínková, Ph.D.	
ZVX116E	Machine Learning	24L + 12P	Exam, Credit	5	Ing. Vojtěch Havlíček, Ph.D.	PZ
ZVX116Z	Big Data Analysis and Cloud Computing in R	24L + 12P	Credit	5	prof. Ing. Martin Hanel, Ph.D.	
	Optionals (see bellow)			4		
2nd year, summer term						
Code	Course name	Organization	Verification	ECTS	Guarantor	Course type
ZVX115E	Meteorology and climatology	24L	Exam, Credit	5	doc. RNDr. Jan Kyselý, Ph.D.	PZ
	Hydrology fundamentals	12P	Credit	1	doc. Ing. Petr Máca, Ph.D.	
ZVX101E	Hydrology	24L + 12P	Exam, Credit	5	doc. Ing. Petr Máca, Ph.D.	PZ
ZGX106E	Remote Sensing I	24L + 24L	Exam, Credit	6	Ing. David Moravec, Ph.D.	
ETZ03E	Programming in Python	12L + 24P	Exam, Credit	4	Ing. Jan Pavlík, Ph.D.	
ZVX114E	Exploratory Data Analysis	24L + 12P	Exam, Credit	5	doc. Mgr. Ing. Ioannis Markonis, Ph.D.	PZ
ZVX114Z	Hydroclimatological Data Analysis	24L + 12P	Credit	5	Ing. Oldřich Rakovec, Ph.D.	PZ

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3rd year, winter term						
Code	Course name	Organization	Verification	ECTS	Guarantor	Course type
	Bachelor Thesis WS	125n	Credit	5	doc. Mgr. Ing. Ioannis Markonis, Ph.D.	
	Optionals (see bellow)			25		
3rd year, summer term						
Code	Course name	Organization	Verification	ECTS	Guarantor	Course type
	Bachelor Thesis SS	500n	Credit	20	doc. Mgr. Ing. Ioannis Markonis, Ph.D.	
	Optionals (see bellow)			10		
State bachelor exam						
	Earth System Sciences					
	based on	Meteorology and Climatology, Hydrology, Integrated water resources management				
	Environmental Data Analysis					
	based on	Exploratory Data Analys, Machine Learning, Geodatabases				
	Thesis defence					

ZT	Fundamental theory
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Optional courses - in total 36 ECTS throughout the study, or replaced by international mobility						
Code	Course name	Organization	Verification	ECTS	Guarantor	Course type
ETZ05E	JavaScript	24L + 12P	Exam, Credit	5	Ing. Jan Masner, Ph.D.	
ETZ08E	Web design	24L + 12P	Exam, Credit	5	doc. Ing. Pavel Šimek, Ph.D.	
ZEX112E	Environmental Data Collection and Processing	24L + 24P	Exam, Credit	6	Ing. Petr Chajma, Ph.D.	
ZBX110E	Land Management	24L + 24P + 6T	Exam, Credit	6	doc. Ing. Kristina Janečková, Ph.D.	
ZEX108E	Fundamentals of Biology	24L	Credit	6	prof. Mgr. Bohumil Mandák, Ph.D.	
ZBX121E	Landscape Ecology	24L + 24P	Exam, Credit	5	doc. Ing. Jan Skaloš, Ph.D.	
ZUX106E	Waste Management	24L + 12P	Exam, Credit	6	Ing. Tereza Hnátková, Ph.D.	
ZEX109E	Zoology	24L + 24P	Exam, Credit	5	prof. Mgr. Jan Růžička, Ph.D.	
ETZ06E	Markup languages	24L + 12P	Exam	5	Ing. Jan Masner, Ph.D.	
ZEX102E	Habitat Ecology	24L + 12P	Exam	5	Ing. Petr Zasadil, Ph.D.	
APZ01E	Soil Science	24L + 24P	Exam	6	prof. Dr. Ing. Luboš Borůvka	
ZVX145E	Air Pollution	2P + 2L	Exam, Credit	5	Mgr. Pavla Dagsson Waldhauserová, Ph.D.	

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