

Faculty of Environmental, Geomatic and Energy Engineering

Field of study: **Environmental Engineering**

Second-cycle full-time programme

passed by the Council of the Faculty of Environmental, Geomatic and Energy Engineering

Specialism: Environmental Protection Systems

Core modules: 135 hours; 13 ECTS credits

Compulsory field modules: 60 hours; 6 ECTS credits

l – lectures, c – classes, p – project work, lab – laboratory classes, E – examination

Semester 1

Module Code	Module title	Σ	l	c	lab	p	ECTS credits
	Statistics	30	1E	1	-	-	4
	Environmental Chemistry	30	2	-	-	-	2
	Environmental Monitoring	15	1	-	-	-	1
	Environmental Physics	30	1	1	-	-	2
	Air Protection Technologies	30	1	1	-	-	2
	Environmental Control Methods	45	3E	-	-	-	4
	Toxicology	30	1	1	-	-	2
	Renewable Energy Sources	45	1	1		1	3
	Environmental Geoengineering	60	2E	-	1	1	5
	Electives (incl. a module conducted in English)	60	2	-	-	2	4
	Protection of Intellectual Property	15	1	-	-	-	1
	Total	390	16	5	1	4	30

	Electives (sem. 1)	l	p	ECTS credits
	Biotechnology in Environmental Protection	1	1	2
	Special-Purpose Processes in Water and Sewage Technologies	1	1	2
	Flood Prevention	1	1	2

	Electives conducted in English	l	p	ECTS credits
	Principles of Waste Management	1	1	2
	Rehabilitation of Sewers and Water Supply Systems	1	1	2

Semester 2

Module Code	Module title	Σ	l	c	lab	p	ECTS credits
	Entrepreneurship and Innovations	30	1	-	-	1	3
	Environmental Management	30	1	-	-	1	2
	Sustainable Technologies	30	1		-	1	3
	Environmental Control Methods	30			2	-	2
	Biomass Production and Incineration	30	1	-	-	1	2
	Computer Science in Environmental Protection	15	-	-	1	-	1
	Groundwater and Soil Protection Technologies	30	1E		1		3
	Solar and Wind Power Systems	60	2E			2	5
	Small Hydroelectric Power Stations	45	1			2	3
	Biotreatment of Solid Waste	30	1	-	-	1	2
	Electives (incl. a module conducted in English)	60	2	-	-	2	4
	Total	390	11	-	4	11	30
26/390							

	Electives (sem. 2)	l	p	ECTS credits
	Geothermal Energy	1	1	2
	Maintenance of Renewable Energy Systems	1	1	2
	Feasibility Study of Environmental Engineering Projects	1	1	2
	Small Retention Reservoirs	1	1	2

Semester 3

Module Code	Module title	Σ	l	c	lab	p	ECTS credits
	Technology and Organisation of Installation Works	30	1	-	-	1	2
	Safety and Reliability of Engineering Systems	15	1	-	-	-	1
	Clean Coal Technologies	60	2		2		4
	Master's Degree Seminar	45	-	-	3	-	23
	Master's Degree Thesis	210			14		

	Total	360	4	-	19	1	30
		360	60		285	15	

Summary Chart

Modules	Number of hours				
	Total	l	c	lab	p
Core	135	90	15	-	30
Field	795+210	375	60	150+210	210
Grand Total	930	465	75	360	240
	1140	465		675	

Classes, laboratory classes, project work: 675 hours (59,21%)

Lectures: 465 hours (40,79%)

Grand total: 930 + 210 = 1140 hours

Faculty of Environmental, Geomatic and Energy Engineering

Field of study: **Environmental Engineering**

Second-cycle full-time programme

passed by the Council of the Faculty of Environmental, Geomatic and Energy Engineering

Specialism: Heating, Ventilation and Air-Conditioning

Core modules: 135 hours; 13 ECTS credits

Compulsory field modules: 60 hours; 6 ECTS credits

l – lectures, c – classes, p – project work, lab – laboratory classes, E – examination

Semester 1

Module Code	Module title	∑	l	c	lab	p	ECTS credits
	Statistics	30	1E	1	-	-	4
	Environmental Chemistry	30	2	-	-	-	2
	Environmental Monitoring	15	1	-	-	-	1
	Heat-Flow Systems	60	2E	-	-	2	4
	Heating 2	45	1E	-	-	2	4
	Heat Engineering	45	1	-	-	2	3
	District Heating	30	1	-	-	1	2
	Internal Environmental Engineering	30	1E	-	-	1	3
	Refrigeration Systems	30	1	-	-	1	2

	Electives (incl. a module conducted in English)	60	2	-	-	2	4
	Protection of Intellectual Property	15	1	-	-	-	1
	Total	390	14	1	-	11	30
		390/26					

	Field Electives (sem. 1)	Σ	l	p	ECTS credits
	Design of Low-Temperature Hot-Water Boiler Rooms	15	1	0	2
	Fundamentals of Thermal Treatment of Waste	15	1	0	2
	Hot Utility Water Distribution Systems	30	1	1	2
	Heat and Mass Transfer	30	1	1	2

	Field Electives conducted in English	Σ	l	p	ECTS credits
	Refrigeration and Air-Conditioning Devices	15		1	2
	Heat and Mass Transfer in Buildings	15		1	2
	Renewable Energy Heating Systems	15		1	2
	Heat Generation Facilities for Heating Systems	15		1	2

Semester 2

Module Code	Module title	Σ	l	c	lab	p	ECTS credits
	Entrepreneurship and Innovations	30	1	-	-	1	3
	Environmental Management	30	1	-	-	1	2
	Sustainable Technologies	30	1	1	-	-	3
	Ventilation and Air-Conditioning	60	1E	1	-	2	5

	Heating and Ventilation Facilities and Systems	45	2E	-	-	1	4	
	Energy Auditing	45	1	-	-	2	3	
	Heat Pumps and Solar Collectors	45	1	-	-	2	3	
	Fire Ventilation	45	1	1	-	1	3	
	Electives (incl. a module conducted in English)	60	2	-	-	2	4	
	Total	390	11	3	-	12	30	
		390/26						

Field Electives (sem. 2)		Σ	l	p	ECTS credits
	Regulation and Control of Heating and Ventilation Facilities	15	1	0	2
	Temperature Reduction Technologies	15	1	0	2
	Local Extraction Facilities	30	1	1	2
	Gas Treatment	30	1	1	2

Semester 3

Module Code	Module title	Σ	l	c	lab	p	ECTS credits	
	Safety and Reliability of Engineering Systems	15	1	-	-	-	1	
	Technology and Organisation of Installation Works	15	1	-	-	-	2	
	Intelligent Buildings	15	1	-	-	-	1	
	District Heating and Gas Supply Networks	30	1	-	-	1	2	
	Energy Management: Energy Consumption and Efficiency	15	1	-	-	-	1	
	Master's Degree Seminar	45	-	-	3	-	4	
	Master's Degree Thesis	210	-	-	14	-	19	
	Total	345	5		17	1	30	
		135 + 210 (Master's Degree Thesis) =						
		345						

Summary Chart

Modules	Number of hours				
	Total	l	c	lab	p
Core	135	90	15		30
Field	780	360	45	45+210	330
Grand Total	915 (+210 Master's Degree Thesis)	450	60	255	360
	1125			675	

Classes, laboratory classes, project work: 675 hours (60,0%)

Lectures: 450 hours (40,0%)

Grand total: 915 + 210 = 1125 hours

Faculty of Environmental, Geomatic and Energy Engineering

Field of study: **Environmental Engineering**

Second-cycle full-time programme

passed by the Council of the Faculty of Environmental, Geomatic and Energy Engineering

Specialism: Piped Utility Systems

Core modules: 135 hours; 13 ECTS credits

Compulsory field modules: 60 hours; 6 ECTS credits

l – lectures, c – classes, p – project work, lab – laboratory classes, E – examination

Semester 1

Module Code	Module title	∑	l	c	lab	p	ECTS credits
	Statistics	30	1E	1	-	-	4
	Environmental Chemistry	30	2	-	-	-	2
	Environmental Monitoring	15	1	-	-	-	1
	Pipeline Network Rehabilitation Practices 1	60	2	-	-	2	4
	Pipeline Network Trenchless Construction Practices 1	75	2E	1	1	1	6
	Pipeline Testing Methods	45	1E	-	2	-	4
	Polymer Pipelines	45	1	1	-	1	3

	Electives (incl. a module conducted in English)	75	3	-	-	2	5	
	Protection of Intellectual Property	15	1	-	-	-	1	
	Total	390	14	3	3	6	30	
		390/26						

	Electives (sem. 1)	l	p/lab	ECTS credits
	Underground Engineering	1	1	2
	Hydro Engineering Structures	1	1	2
	Industrial Engineering Systems	1	1	2
	Materials Science in Engineering Systems	1		1

	Electives conducted in English	l	p/lab	ECTS credits
	Rehabilitation of Sewers and Water Supply Systems	2	1	3
	New Techniques and Materials in Trenchless Technology	1	1lab	2
	Microtunneling and Pipejacking	1	1	2

Semester 2

Module Code	Module title	∑	l	c	lab	p	ECTS credits	
	Entrepreneurship and Innovations	30	1	-	-	1	3	
	Environmental Management	30	1	-	-	1	2	
	Sustainable Technologies	30	1	1	-	-	3	
	Waterworks and Water Supply System	30	1	-	-	1	2	
	Sewerage	30	1E	-	-	1	3	
	Special-Purpose Engineering Systems	45	2E	-	-	1	4	
	Pipeline Network Rehabilitation Practices 2	75	2E	-	2	1	5	
	Pipeline Structural Design	60	2	-	-	2	4	
	Electives (incl. a module conducted in English)	60	2	-	-	2	4	
	Total	390	13	1	2	10	30	
		390/26						

	Electives (sem. 2)	l	p/c/lab	ECTS credits
	Pipeline Network Trenchless Construction Practices 2	1	1	2
	Combined Sewage Systems	1	1	2
	Redevelopment of Sewage Systems	1	1	2
	Polymer Pipelines 2	1	1	2
	District Heating and Gas Supply Systems	1	1	2
	Water Supply and Sewage System Rehabilitation Strategies	1	1	2

Semester 3

Module Code	Module title	∑	l	c	lab	p	ECTS credits	
	Safety and Reliability of Engineering Systems	15	1	-	-	-	1	
	Technology and Organisation of Installation Works	30	1	-	-	1	2	
	Modernisation of Engineering Systems	30	1	-	-	1	2	
	Tunnelling and Shield Tunnelling Methods	15	-	1	-	-	2	
	Master's Degree Seminar	45	-	-	3	-	23	
	Master's Degree Thesis	210	-	-	14	-		
	Total	135+345	3	1	17	2	30	
		135+210 (Master's Degree Thesis)						

Summary Chart

Modules	Number of hours				
	Total	l	c	lab	p
Core	150	90	15	-	30
Field	765	360	60	120+210	240
Grand Total	915 (+210 Master's Degree Thesis)	450	75	360	270
	1125	450	675		

Classes, laboratory classes, project work: 675 hours (60,0%)

Lectures: 450 hours (40,0%)

Grand total: 915 + 210 = 1125 hours

Faculty of Environmental, Geomatic and Energy Engineering

Field of study: **Environmental Engineering**

Second-cycle full-time programme

passed by the Council of the Faculty of Environmental, Geomatic and Energy Engineering

Specialism: Water Supply and Waste Treatment

Core modules: 135 hours; 13 ECTS credits

Compulsory field modules: 60 hours; 6 ECTS credits

l – lectures, c – classes, p – project work, lab – laboratory classes, E – examination

Semester: 1

Module Code	Module title	∑	l	c	lab	p	ECTS credits
	Statistics	30	1E	1	-	-	4
	Environmental Chemistry	30	2	-	-	-	2
	Environmental Monitoring	15	1	-	-	-	1
	Land Reclamation and Restoration	15	1	-	-	-	1
	Waste Treatment Technologies (WTT)	60	2E	-	-	2	5
	Special-Purpose Processes in Water and Wastewater Technologies	15	1	-	-	-	1

	Biotechnology in Environmental Protection	45	2	1	-	-	3
	Water and Wastewater Management 1	45	2E	-	-	1	4
	Assessment of Environmental Impact	60	1	1	-	2	4
	Electives (incl. a module conducted in English)	60	2	-	-	2	4
	Protection of Intellectual Property	15	1	-	-	-	1
	Total	390	16	3	-	7	30
		390/26					

	Electives (sem. 1)	l	p	ECTS credits
	Municipal Cleaning Operations	1	1	2
	Groundwater Treatment	1	1	2
	Household Wastewater Treatment Facilities	1	1	2
	Flood Prevention	1	1	2
	Fundamentals of Thermal Treatment of Waste	1	1	2

	Electives conducted in English	l	p	ECTS credits
	Principles of Waste Management	1	1	2
	Rehabilitation of Sewers and Water Supply Systems	1	1	2

Semester 2

Module Code	Module title	Σ	l	c	lab	p	ECTS credits
	Entrepreneurship and Innovations	30	1	-	-	1	3
	Environmental Management	30	1	-	-	1	2
	Sustainable Technologies	45	1	1	-	1	3
	Stormwater Management	30	1	-	-	1	2
	Water and Wastewater Management 2	30	1E	-	-	1	3
	Sanitation Systems	45	1E	-	-	2	5
	Automatic Control and SCADA Systems	45	2E	-	-	1	4
	Industrial Waste Management	30	1	-	-	1	2
	Pre-Final Project Work	30	-	-	-	2	2

	(Programming of Sewage Systems)						
	Electives (incl. a module conducted in English)	60	2	-	-	2	4
	Total	375	11	1	-	13	30
		375/25					

	Electives (sem. 2)	l	p	ECTS credits
	Surface Water Treatment	1	1	2
	Cost Estimation	1	1	2
	Feasibility Study of Environmental Engineering Projects	1	1	2

Semester 3

Module Code	Module title	∑	l	c	lab	p	ECTS credits
	Technology and Organisation of Installation Works	30	1	-	-	1	2
	Safety and Reliability of Engineering Systems	15	1	-	-	-	1
	Physical Planning 1	30	1	-	-	1	2
	Agricultural and Non-Agricultural Utilisation of Wastewater	30	-	-	-	2	2
	Master's Degree Seminar	45	-	-	3	-	23
	Master's Degree Thesis	210			14		
	Total	360	3	-	17	4	30
		360	45		255	60	
		150+210			315		

Summary Chart

Modules	Number of hours				
	Total	l	c	lab	p
Core	165	105	15	-	45
Field	735	345	45	45+210	315
Grand Total	915 +210	450	60	255	360
	1125	450		675	

Classes, laboratory classes, project work: 675 hours (60,0%)

Lectures: 450 hours (40,0%)

Grand total: 915 + 210 = 1125 hours