

Faculty of Environmental Engineering, Geomatics and Power  
Engineering

Field of study: **Environmental Engineering**  
**First-cycle full-time programme**

available from the academic year 2016/2017

I – lectures, c – classes, p – project work, lab – laboratory classes/language course, E – examination  
Field Modules; Core Modules; Socio-Economic Sciences and Humanities (SSH)

**Semester 1**

Module Code	Module title	$\Sigma$	I	c	lab	p	ECTS credits
	Mathematics 1	45	15E	30	-	-	4
	Mathematics 2	45	15E	30	-	-	4
	Chemistry	60	15E	15	30	-	5
	Environmental Protection	30	30	-	-	-	2
	Technical Drawing and Descriptive Geometry	30	15	-	15	-	2
	Surveying and Photogrammetry	30	15	-	15	-	2
	Biology and Ecology	60	30E	-	30	-	5
	Fundamentals of Computer Science	30	15	-	15	-	3
	SSH (elective module)	45	45	-	-	-	3
	Academic Good Manners	5	5h	-	-	-	pass/fail
	<b>Total</b>	<b>380</b>	<b>200</b>	<b>75</b>	<b>105</b>	<b>-</b>	<b>30</b>

**Semester 2**

Module Code	Module title	$\Sigma$	I	c	lab	p	ECTS credits
	Mathematics 3	30	15E	15	-	-	3
	Mechanics and Strength of Materials 1	30	15	15	-	-	2
	Principles of Computer-Aided Design 1	45	-	-	45	-	3
	Physics	60	30E	15	15	-	5
	Meteorology, Climatology and Air Protection	45	15E	-	-	30	4
	Materials Science	30	15	-	15	-	2
	Hydrogeology 1	30	15	-	-	15	3
	Fluid Mechanics	45	15	-	30	-	3
	Hydraulics 1	15	15	-	-	-	1
	Principles of Standardisation	8	8	-	-	-	pass/fail
	Foreign Language 1	30	-	-	30	-	2
	Electrical Engineering	15	-	-	15	-	1
	History of Engineering and Inventions	15	15	-	-	-	1
	Protection of Intellectual Property	4	4	-	-	-	pass/fail
	<b>Total</b>	<b>402</b>	<b>162</b>	<b>45</b>	<b>150</b>	<b>45</b>	<b>30</b>

	<b>Elective Modules: Socio-Economic Sciences and Humanities (SSH) / general academic modules</b>	<b>I</b>	<b>ECTS credits</b>
	Occupational Safety and Ergonomics	15	1
	Protection of Intellectual Property	15	1
	History of Philosophy	15	1
	Fundamentals of Economics	15	1
	Ethics	15	1
	History of European Civilisation	15	1

### Semester 3

<b>Module Code</b>	<b>Module title</b>	<b>∑</b>	<b>I</b>	<b>c</b>	<b>lab</b>	<b>p</b>	<b>ECTS credits</b>
	Mechanics and Strength of Materials 2	45	15E	15	-	15	4
	Hydraulics 2	45	15	-	15	15	3
	Civil Engineering: Engineering Structures	60	15E	-	-	45	5
	Soil Mechanics	30	15	-	-	15	2
	Chemistry for Sanitary Engineering	60	15E	-	45	-	5
	Engineering Thermodynamics	45	15E	30	-	-	5
	Water Supply Pipelines 1	45	15	15	-	15	3
	Principles of Computer-Aided Design 2	15	-	-	15	-	1
	Field Elective	15	15	-	-	-	1
	Foreign Language 2	30	-	-	30	-	1
	Physical Education *	30	-	-	30	-	pass/fail
	<b>Total</b>	<b>420</b>	<b>120</b>	<b>60</b>	<b>135</b>	<b>105</b>	<b>30</b>

	<b>Field electives (sem.3)</b>	<b>I</b>	<b>ECTS credits</b>
	Unit Processes for Environmental Engineering	15	1
	Renewable Power Engineering	15	1
	Environmental Resources Management (ERM)	15	1

### Semester 4

<b>Module Code</b>	<b>Module title</b>	<b>∑</b>	<b>I</b>	<b>c</b>	<b>lab</b>	<b>p</b>	<b>ECTS credits</b>
	<i>Hydrology</i>	45	15E	15	-	15	4
	Water Treatment 1	60	15	15	30	-	4
	Geotechnical Engineering	60	15E	-	30	15	5
	Trenchless Technologies	30	15E	-	15	-	3
	Water Supply Pipelines 2	45	15E	-	-	30	4
	Sewage Pipelines 1	45	30	-	-	15	3
	Heat- and Fluid Flow Measurements	30	15	-	15	-	2
	<i>Hydrogeology 2</i>	30	15	-	-	15	2
	Field Elective	15	15	-	-	-	1
	Foreign Language 3	30	-	-	30	-	2
	Physical Education *	30	-	-	30	-	pass/fail
	<b>Total</b>	<b>420</b>	<b>150</b>	<b>30</b>	<b>150</b>	<b>90</b>	<b>30</b>

	<b>Field electives (sem.4)</b>	<b>I</b>	<b>ECTS credits</b>
	Urban Underground Infrastructure (UUI)	15	1
	Technology and Organisation of Installation Works	15	1

Specialism: **Sanitary Pipelines and Systems**

Specialism: **Water Supply, Treatment of Wastewater and Solid Waste**

### Semester 5

<b>Module Code</b>	<b>Module title</b>	<b>Σ</b>	<b>I</b>	<b>c</b>	<b>lab</b>	<b>p</b>	<b>ECTS credits</b>
	Water Treatment 2 * / <i>Underground and Surface Water Intakes</i>	60	15	-	-	45	4
	Wastewater Treatment 1	60	15	15	30	-	4
	Sanitary Systems	60	30E	15	-	15	4
	Sewage Pipelines 2 * / <i>Sewage Systems</i> *	45	15E	-	-	30	4
	Hydro Engineering	45	15	-	-	30	3
	Heating Systems	45	15E	15	-	15	4
	Specialism Elective	15	15	-	-	-	1
	Field Elective	15	15	-	-	-	3
	Foreign Language 4	30	-	-	30E	-	2
	Physical Education **	-	-	-	-	-	-
	Protection of Intellectual Property	15	15	-	-	-	1
	<b>Total</b>	<b>390</b>	<b>150</b>	<b>45</b>	<b>60</b>	<b>135</b>	<b>30</b>

\* options to be selected

	<b>Specialism Electives (sem.5) Sanitary Pipelines and Systems</b>	<b>I</b>	<b>ECTS credits</b>
	Building Physics 1	15	1
	Drainage Systems	15	1
	Pressurised and Vacuum Sewage Pipelines	15	1

	<b>Specialism Electives (sem.5) Water Supply, Treatment of Wastewater and Solid Waste</b>	<b>I</b>	<b>ECTS credits</b>
	Fans and Compressors	15	1
	Water and Soil Remediation	15	1
	Drainage Systems	15	1

	<b>Field electives (sem.5)</b>	<b>I</b>	<b>ECTS credits</b>
	Renewable Energy	15	3
	Modern Plastic Pipelines	15	3
	Soil Science & Soil Engineering	15	3

## Semester 6

Module Code	Module title	$\Sigma$	l	c	lab	p	ECTS credits
	Wastewater Treatment * / Stormwater Treatment *	45	15E	-	-	30	4
	Solid Waste Disposal and Treatment	60	15E	-	-	45	5
	Water and Wastewater Management in Industries * / Water and Wastewater Models for Urban Agglomerations *	45	15E	-	-	45	5
	Ventilation and Air-Conditioning	45	15E	-	-	30	4
	Building Law, Water Law and Environmental Protection Law	30	30	-	-	-	2
	Cost Estimation	30	15	-	-	15	2
	Gas Supply Systems */ Gas Supply Networks and Systems *	30	15	-	-	15	2
	Specialism Electives	45	45	-	-	-	3
	Field Elective	15	15*	-	15*	-	3
	<b>Total</b>	<b>360</b>	<b>180</b>	<b>-</b>	<b>-</b>	<b>180</b>	<b>30</b>

\* options to be selected

	<b>Specialism Electives (sem.6) Sanitary Pipelines and Systems</b>	l	ECTS credits
	Sanitary Systems 2	15	1
	Non-Standard Sewage Systems	15	1
	Non-Standard Heating Systems	15	1
	Polymers in Environmental Engineering	15	1
	Combined Sewage Systems	15	1
	Central Heating and Ventilation Systems	15	1

	<b>Specialism Electives (sem.6) Water Supply, Treatment of Wastewater and Solid Waste</b>	l	ECTS credits
	Instrumental Methods of Analysis	15	1
	Environmental Monitoring	15	1
	Specifications for Performance and Practical Completion Inspection of Technical Facilities and Devices	15	1
	Surface Water Intakes	15	1
	BAT (Best Available Technology) Standards	15	1
	Waste Management Planning in Various Commune Types	15	1

	<b>Field electives (sem.6)</b>	l/lab	ECTS credits
	Applications of Trenchless Techniques	15	3
	Engineering Thermodynamics	15	3
	Structural Materials in Environmental Engineering	15	3
	Applied Hydrology	15	3
	Renewable Energy (lab)	15	3

## Semester 7

Module Code	Module title	$\Sigma$	l	c	lab	p	ECTS credits
	Sewage Sludge Management * / <i>Biomass Treatment Technologies</i> *	30	15	-	-	15	3
	Specialism Electives	60	60	-	-	-	4
	BSc Seminar	30	-	-	-	30	4
	BSc Thesis	-	-	-	-	-	15
	4-week Internship	-	-	-	-	-	4
	<b>Total</b>	<b>120</b>	<b>75</b>	<b>-</b>	<b>-</b>	<b>45</b>	<b>30</b>

\* options to be selected

	<b>Specialism Electives (sem.7) Sanitary Pipelines and Systems</b>	l	ECTS credits
	Maintenance (MRO) of Water Supply and Sewage Pipelines	30	2
	Modern Water Supply and Wastewater Engineering	15	1
	Heating and Ventilation Modules	15	1
	Refrigeration and Air-Conditioning (RAC) Modules	15	1
	Sanitary Facilities	15	1
	Heat Management	15	1
	Fans and Compressors	15	1

	<b>Specialism Electives (sem.7) Water Supply, Treatment of Wastewater and Solid Waste</b>	l	ECTS credits
	Industrial Waste Management	15	1
	Maintenance (MRO) of Water Treatment Stations and Wastewater Treatment Plants	30	2
	Maintenance (MRO) of Water Supply and Sewage Systems	30	2
	Aquatic Legal Survey	15	1
	Modelling of Unit Processes	30	2