



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

l – 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	Σ	l	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
	Total	380	200	75	105	-	30

Semester 2

Module Code	Module title	Σ	l	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



Politechnika Świętokrzyska

WYDZIAŁ INŻYNIERII ŚRODOWISKA, GEOMATYKI I ENERGETYKI

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
Total	402	162	45	150	45	30

Elective Modules: Socio-Economic Sciences and Humanities (SSH) / general academic modules		I	ECTS credits
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

Module Code	Module title	Σ	I	c	lab	p	ECTS credits
	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
	Total	420	120	60	135	105	30

Field electives (sem.3)		I	ECTS credits
Unit Processes for Environmental Engineering		15	1



Renewable Power Engineering	15	1
Environmental Resources Management (ERM)	15	1

Semester 4

Module Code	Module title	Σ	l	c	lab	p	ECTS credits
	<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
	Total	420	150	30	150	90	30

	Field electives (sem.4)	l	ECTS credits
	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

Module Code	Module title	Σ	l	c	lab	p	ECTS credits
	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



Total	390	150	45	60	135	30
--------------	------------	------------	-----------	-----------	------------	-----------

* options to be selected

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

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

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

Semester 6

Module Code	Module title	∑	I	c	lab	p	ECTS credits
	Wastewater Treatment * / <i>Stormwater Treatment</i> *	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 */ <i>Gas Supply Networks and Systems</i> *	30	15	-	-	15	2
	Specialism Electives	45	45	-	-	-	3
	Field Elective	15	15*	-	15*	-	3
	Total	360	180	-	-	180	30



* options to be selected

	Specialism Electives (sem.6) Sanitary Pipelines and Systems	I	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

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

	Field electives (sem.6)	I/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	Σ	I	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
	Total	120	75	-	-	45	30

* options to be selected



	Specialism Electives (sem.7) Sanitary Pipelines and Systems	I	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

	Specialism Electives (sem.7) Water Supply, Treatment of Wastewater and Solid Waste	I	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