COURSE DESCRIPTION CARD – SPECIMEN

Faculty of Civil Engineering and Environmental Science									
Field of study								**Degree level and programme type**	
Specialization/ diploma path								**Study profile**	academic profile
Course name	Computer modeling of water supply and sewage systems							**Course code**	**IS-FCEE-00133W**
								Course type	**Erasmus**
Forms and number of hours of tuition	**L**	**C**	**LC**	**P**	**SW**	**FW**	**S**	**Semester**	winter
	30				**30**			**No. of ECTS credits**	**4**
Entry requirements	1. Basic knowledge of water supply and wastewater systems. 2. Basic knowledge of desktop geographic information system (GIS) - not obligatory.								
Course objectives	Practical skills for building a computer model of water supply and sewage networks. Practical skills in processing digital maps in GIS systems. Practical skills of combining GIS systems with software for modeling of water and sewage networks.								
Course content	1. Introduction to software (EPANET, SWMM, QGIS, GISWATER) 2. Water quality and hydraulic modeling of water supply systems 3. Stormwater and wastewater flows modeling. 4. GIS Aplicattions for water, wastewater and stormwater systems.								
Teaching methods	case study analysis, discussion, technical calculations								
Assessment method	Final project preparation, correctness of partial calculations for the project								
Symbol of learning outcome	**Learning outcomes**								**Reference to the learning outcomes for the field of study**
LO1	Has general knowledge of the application of numerical models to the design and operation of wastewater and water supply systems.								**IS1_W08** **IS1_W11**
LO2	Ability to create and implementation of GIS model of wastewater and water supply system along with their basic elements.								**IS1_W07** **IS1_W08**
LO3	Ability to identify and properly assume the most important parameters of the object models, and interpret the simulation results.								**IS1_W10** **IS1_U10**
LO4									
LO5									

Symbol of learning outcome	Methods of assessing the learning outcomes	Type of tuition during which the outcome is assessed
LO6		
LO1	preparation of data and maps for the project	SW
LO2	project specification, project discussion	L
LO3	calculation correctness in project documentation, project specification, presentation of project	SW
LO4		
LO5		
LO6		

	Student workload (in hours)	No. of hours
Calculation	preparation of calculation	30
	project realization	30
	preparation for project defence	15
	consultations	10
	lectures	15
	TOTAL:	100

Quantitative indicators	HOURS	No. of ECTS credits
Student workload – activities that require direct teacher participation	50	2
Student workload – practical activities	40	3,28

Basic references	Symeon Christodoulou, Urban Water Distribution Networks, 2018 Haestad Methods; Thomas M. Walski; Donald V. Chase; Dragan A. Savic; Walter M. Grayman; Stephen Beckwith; Edmundo Koelle, Advanced Water Distribution Modeling and Management, 2003 David J Maguire, Michael F Goodchild, Michael Batty , GIS, Spatial Analysis, and Modeling 2005		
Supplementary references	Epanet Users manual SWMM users manual QGIS users manual		
Organisational unit conducting the course	Department of Water Supply and Sewage Systems	Date of issuing the programme	
Author of the programme	dr inż. Wojciech Kruszyński	29th November 2019	

L – lecture, C – classes, LC – laboratory classes, P – project, SW – specialization workshop, FW - field work,

S – seminar