

COURSE DESCRIPTION CARD

Faculty of Civil Engineering and Environmental Sciences									
Field of study								Degree level and programme type	
Specialization/ diploma path								Study profile	academic profile
Course name	Basics of Water Supply Systems							Course code	IS-FCEE-00262-1W
								Course type	Erasmus
Forms and number of hours of tuition	L	C	LC	P	SW	FW	S	Semester	winter
	15			30	15			No. of ECTS credits	5
Entry requirements	Basic knowledge of fluid mechanics								
Course objectives	Students will learn engineering principles of water supply systems operation and design. By the end of this module students should be able to: describe and analyze major components of water supply systems, estimate technical parameters of water supply system (capacity, required pressures etc.), perform hydraulic calculations of closed conduits and design simple water supply network								
Course content	<p><u>Lectures</u>: General characteristics of water supply systems. Evaluation of water demand - required capacity of water distribution system. Surface water and groundwater intakes. Water storage reservoirs. Hydraulic design of water distribution systems - branching and closed conduit systems. Pipe materials and water systems appurtenances.</p> <p><u>Project</u> -: design of water distribution network: required capacity of the system, water storage volume, pipes diameters, pressure loss and hydraulic grade line</p> <p><u>Specialized workshop</u> – application of professional computer software for hydraulic analysis of water supply networks</p>								
Teaching methods	Informational lectures (with multimedia presentations), design project (with example calculations)								
Assessment method	lecture – written test; project / specialized workshop – project / exercises completion, presentation and discussion								
Symbol of learning outcome	Learning outcomes							Reference to the learning outcomes for the field of study	
L01	Student is able to: understand how water supply systems work and describe main elements of the system							IS1_W05	
L02	Student is able to design a looped water supply network							IS1_U11	
L03	Student is able to access and apply data necessary for a design and analysis of water supply networks							IS1_U14	
L04	Student is ready to analyse problems related to water supply							IS1_K01	

Symbol of learning outcome	Methods of assessing the learning outcomes	Type of tuition during which the outcome is assessed	
L01	written exam	L	
L02	evaluation of submitted project and exercises from the workshop	P, SW	
L03	evaluation of submitted project / exercises	P, SW	
L04	discussion of submitted project	P	
Student workload (in hours)		No. of hours	
Calculation	lecture attendance	15	
	participation in classes, laboratory classes, etc.	45	
	working on projects, reports, etc.	20	
	participation in student-teacher sessions related to the classes/seminar/project	5	
	preparation for and participation in exam	15	
	TOTAL:	100	
Quantitative indicators		HOURS	No. of ECTS credits
Student workload – activities that require direct teacher participation		65	2,6
Student workload – practical activities		70	2,8
Basic references	1. Viessman Jr.W.,Hammer M.J.: Water Supply and Pollution Control. Harper and Row Publishers Inc., 1996. 2. Smet, J.,van Wijk, C. (ed):Small Comunity Water Supplies. IRC Technical Paper Series 40, 2002, available online: http://www.ircwash.org/sites/default/files/Smet-2002-Small_TP40.pdf		
Supplementary references	1. Mays, L.W.: Water distribution system handbook. McGraw-Hill, New York, USA, 2000.		
Organisational unit conducting the course	Department of Water Supply and Sewage Systems	Date of issuing the programme	
Author of the programme	Dariusz Andraka, PhD, Eng.	2022.01.12	

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