

COURSE DESCRIPTION CARD

Faculty of Civil Engineering and Environmental Sciences									
Field of study								Degree level and programme type	1 st cycle
Specialization/ diploma path								Study profile	academic profile
Course name	Water Supply Systems							Course code	IS-FCEE-00262-1S
								Course type	Erasmus
Forms and number of hours of tuition	L	C	LC	P	SW	FW	S	Semester	summer
	15			30	15			No. of ECTS credits	4
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 - branched and looped (ring) 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 the design and hydraulic analysis of water supply networks</p>								
Teaching methods	Informational lectures (with multimedia presentations), design project (with example calculations), exercises with computers								
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	
	<i>(Knowledge) Student knows and understands:</i>								
L01	detailed knowledge of the simulation and design of water distrib. networks in accordance with applicable standards							IS1_W07	
L02	theoretical basics of design, construction and operation of water distrib. networks, including design guidelines and standards							IS1_W11	
	<i>(Skills) Student is able to:</i>								
L03	apply interdisciplinary knowledge to analyse and solve complex problems of water supply							IS1_U01	

LO4	apply design principles and available computer software to solve engineering problems related to water supply	IS1_U06
LO5	design water distrib. network according to local requirements, design guidelines and technical standards, selecting appropriate technologies, materials and tools	IS1_U07
	<i>(Social competencies) Student is ready to</i>	
LO5	perform his professional role responsibly and take care of the achievements and traditions of his profession	IS1_K01
Symbol of learning outcome	Methods of assessing the learning outcomes	Type of tuition during which the outcome is assessed
LO1	written exam, project and exercises completion	L, P, SW
LO2	written exam, project completion	L, P
LO3	project and exercises completion	P, SW
LO4	project and exercises completion	P, SW
LO5	written exam, project and exercises completion	L, P, SW
LO6	written exam, project and exercises completion	L, P, SW
Student workload (in hours)		No. of hours
Calculation	lecture attendance	15
	participation in classes, laboratory classes, etc.	45
	working on projects, reports, etc.	31
	participation in student-teacher sessions related to the classes/seminar/project	4
	TOTAL:	100
Quantitative indicators		HOURS
Student workload – activities that require direct teacher participation		64
Student workload – practical activities		78
No. of ECTS credits		2,6
Student workload – practical activities		3,1
Basic references	1. Viessman Jr.W.,Hammer M.J.: Water Supply and Pollution Control. Harper and Row Publishers Inc., 1996. 2. Mays, L.W.: Water distribution system handbook. McGraw-Hill, New York, USA, 2000. 3. 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. EN 805. Water supply - Requirements for systems and components outside buildings	
Organisational unit conducting the course	Department of Water Supply, Sewerage and District Heating	Date of issuing the programme
Author of the programme	Dariusz Andraka, PhD; prof. Izabela Bartkowska, PhD, Eng.	2026.03.20

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

S – seminar