

## 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	Hydrology for Environmental Engineers							Course code	IS-FCEE-00269S
								Course type	Erasmus
Forms and number of hours of tuition	L	C	LC	P	SW	FW	S	Semester	Summer
	15				15			No. of ECTS credits	4
Entry requirements	-								
Course objectives	To familiarize students with hydrological issues in the field of hydrological processes and objects; - to acquire skills using hydrological data in the implementation and design of hydroengineering investments and preparation for carrying scientific research;								
Course content	<p><u>Lecture</u>: Water circulation in nature, water balance. Types and characteristics of precipitation. Evaporation, runoff, retention, filtration and infiltration. Outflow, outflow coefficients. Water conditions and their characteristics. Characteristic flows. Open channels. Open-channel flows. Flood and erosion control.</p> <p><u>Specialization workshop</u>: Design of open-channels.</p>								
Teaching methods	Informational lectures - multimedia presentations, specialization workshop - project discussion								
Assessment method	lecture –written test; specialization workshop–project completion, presentation and discussion, written test								
Symbol of learning outcome	Learning outcomes							Reference to the learning outcomes for the field of study	
LO1	Student has elementary knowledge in the hydrographic objects and basic hydrological phenomena							EN_IS1_W01	
LO2	Student knows the laws and can explain the processes that determine the water cycle in the catchment area							EN_IS1_W07	
LO3	Student is able to assess the possibilities of using water resources, identify threats and consequences of degradation							EN_IS1_U04	
LO4	Student is able to interpret the results of basic studies							EN_IS1_U04	
LO5	Student understands the need for further training and is ready to take responsibility for the performed tasks							EN_IS1_U17 EN_IS1_K02	

Symbol of learning outcome	Methods of assessing the learning outcomes	Type of tuition during which the outcome is assessed	
LO1	Test on the lecture content	L	
LO2	evaluating the student's reports and performance in classes	SW	
LO3	evaluating the student's reports and performance in classes	SW	
LO4	evaluating the student's work during specialization workshop	SW	
LO5	evaluating the student's work during specialization workshop	SW	
Student workload (in hours)		No. of hours	
Calculation	Lecture attendance	15	
	participation in classes	15	
	preparation for classes, projects, seminars, etc.	15	
	working on projects, reports, etc.	15	
	participation in student-teacher sessions related to the classes/seminar/project	25	
	implementation of project tasks	10	
	preparation for and participation in exams/tests	5	
<b>TOTAL:</b>		<b>100</b>	
Quantitative indicators		HOURS	No. of ECTS credits
<b>Student workload – activities that require direct teacher participation</b>		55	2,2
<b>Student workload – practical activities</b>		85	3,4
<b>Basic references</b>	1. Dawei Han, Concise Hydrology, University of Bristol, 2010. <a href="http://www.bris.ac.uk/civilengineering/person/d.han.html">http://www.bris.ac.uk/civilengineering/person/d.han.html</a> ; 2. Tim Davie nad Nevil Wyndham Quinn, Fundamentals of Hydrology, 3rd Edition published 2019 by Routledge (Taylor&Francis eBooks); 3. David Butler, Christopher James Digman, Christos Makropoulos, John W. Davies, Urban Drainage 4 <sup>th</sup> Edition, 2018.		
<b>Supplementary references</b>	1. Andy D. Ward, Stanley W. Trimble, Suzette R. Burckhard, John G. Lyon, Environmental Hydrology. 3rd Edition published CRC Press Taylor&Francis Group 2016.		
<b>Organisational unit conducting the course</b>	<b>Department of Water Supply and Sewerage Systems</b>	<b>Date of issuing the programme</b>	
<b>Author of the programme</b>	<b>Assoc. Prof. Maria Walery, PhD, Eng.</b>	<b>20.03.23</b>	

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