COURSE DESCRIPTION CARD – SPECIMEN

<table>
<tr><td colspan="10">Faculty of Civil Engineering and Environmental Sciences</td></tr>
<tr><td>Field of study</td><td colspan="6"></td><td colspan="2">Degree level and programme type</td><td></td></tr>
<tr><td>Specialization/ diploma path</td><td colspan="6"></td><td colspan="2">Study profile</td><td>academic profile</td></tr>
<tr><td rowspan="2">Course name</td><td colspan="6" rowspan="2">Hydrology</td><td colspan="2">Course code</td><td>IS-FCEE-00023W</td></tr>
<tr><td colspan="2">Course type</td><td>Erasmus</td></tr>
<tr><td rowspan="2">Forms and number of hours of tuition</td><td>L</td><td>C</td><td>LC</td><td>P</td><td>SW</td><td>FW</td><td>S</td><td>Semester</td><td>winter</td></tr>
<tr><td>15</td><td></td><td></td><td></td><td>15</td><td></td><td></td><td>No. of ECTS credits</td><td>4</td></tr>
<tr><td>Entry requirements</td><td colspan="9">does not concern</td></tr>
<tr><td>Course objectives</td><td colspan="9">Students can describe and interpret hydrological phenomena and processes in connection with environmental conditions, determine basic hydrological parameters, identify water resource hazards. They know basics of water resource protection and basic measurement techniques.</td></tr>
<tr><td>Course content</td><td colspan="9">Lecture: Water distribution on Earth, hydrological cycle. Watershed characteristics, hydrographic network, rivers, lakes, wetlands. Water budget: rainfall, evapotranspiration, infiltration, runoff and subsurface flow, surface and subsurface storage. Hydrological processes: hydrological response analysis, relation rainfall – runoff, flow hydrograph. Instrumentation and monitoring. Hydrological data. Floods, 100-year flood. Groundwater. Urban Hydrology.
Specialized workshop: Watershed. River stages analysis. Stream stage hydrograph. Stage–discharge relationship. Rating curve. Methods of stream discharge calculation based on measurements. Empirical estimation of stream discharges. River discharges analysis. Stream discharge hydrograph. River regime.</td></tr>
<tr><td>Teaching methods</td><td colspan="9">Informative lecture, specialization workshop.</td></tr>
<tr><td>Assessment method</td><td colspan="9">Lecture: final test
Project: workshop report.</td></tr>
<tr><td>Symbol of learning outcome</td><td colspan="7">Learning outcomes</td><td colspan="2">Reference to the learning outcomes for the field of study</td></tr>
<tr><td>LO1</td><td colspan="7">Student knows the hydrographic objects and the basic hydrological phenomena</td><td colspan="2">IS1_W01</td></tr>
<tr><td>LO2</td><td colspan="7">Student knows the water cycle and is able to explain the processes determining the water cycle in the catchment area</td><td colspan="2">IS1_W07, IS1_U03</td></tr>
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LO3	Student is able to assess the possibilities of using water resources, identify their threats and the effects of degradation	IS1_U04
LO4	Student is able to interpret the results of basic studies	IS1_U04
LO5	Student understands the need for further training and is ready to take responsibility for implemented tasks	IS1_U17, IS1_K02
Symbol of learning outcome	**Methods of assessing the learning outcomes**	**Type of tuition during which the outcome is assessed**
LO1	written test	**L**
LO2	written test, workshop report analysis	**L, SW**
LO3	written test, workshop report analysis	**L, SW**
LO4	workshop report analysis	**SW**
LO5	workshop report analysis	**SW**
Student workload (in hours)		**No. of hours**
Calculation	participation in lectures	15
	preparation for passing the lecture	10
	participation in specialization workshop	15
	preparation for specialization workshop and workshop report preparation	55
	participation in consultations	5
	TOTAL:	**100**

Quantitative indicators	**HOURS**	**No. of ECTS credits**
Student workload – activities that require direct teacher participation	35 h	1,5
Student workload – practical activities	75 h	3,0

Basic references	Chow V.T., Maidment D.R., Mays L.W., 1998. Applied hydrology. McGraw-Hill, New York. Han D., 2010. Concise Hydrology. eBooks at bookboon.com Hornberger G.M. [et al.], 1998. Elements of physical hydrology. The John Hopkins University Press, Baltimore. Shaw E.M., 1994. Hydrology in practice [Document online]. Taylor and Francis.
Supplementary references	Lükenga W., 2015. Water Resource Management. eBooks at bookboon.com Mimikou M.A., Baltas E.A., Tsihrintzis V.A., 2018. Hydrology and water resource systems analysis. CRC/Taylor & Francis.

Organisational unit conducting the course	**Department of Agri-Food Engineering and Environmental Management**	**Date of issuing the programme**
Author of the programme	**dr Piotr Kondratiuk**	**25.02.2020**

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