UCLouvain

licar2016

2026

Designing the City and Territory with Water and Ecosystems

6.00 credits	45.0 h	Q2

Teacher(s)	Savary Céline ;Seewang Laila ;
Language :	French
Place of the course	Louvain-la-Neuve
Main themes	This learning unit examines urban and territorial relationships with water by focusing on research in urban planning and the environmental humanities and theories and applications of urban hydraulics. The learning unit equally addresses current and future challenges related to water, recognising that water management, flooding, pollution and scarcity are major societal concerns. Students will learn to use the necessary tools to sustainably integrate these issues into future architectural- or territorial design projects. In parallel, they will learn about the urban, environmental, and societal impacts of water management strategies. As such, engineering and architectural skills will be mobilized to develop both “hard” and “soft” design approaches across various scales.
Learning outcomes	**At the end of this learning unit, the student is able to :** • Discuss contemporary issues related to water in relation to the design of cities and territories • Cross different scales of analysis through drawing (territorial, urban, architectural) • Analyse and graphically represent urban, environmental, landscape, infrastructural, and climatic contexts, including the use of GIS tools. • Integrate sustainable water management and flood-related challenges into projects through an analytical approach • Understand the principles and theories of, and apply tools from hydrology (rain interpretation, rainfall-runoff transformation) and urban hydraulics to calculate water distribution and drainage networks (collectors and ditches), and to dimension infiltration and retention structures for sustainable rainwater management (swales, infiltration wells, cisterns, stormwater basins…) • Provide, where necessary, specifications and analyses of specific hydrological and hydraulic studies (have a critical understanding of issues, assumptions, and results) • Propose resilient architectural and constructional solutions regarding flood risk, considering environmental sensitivity, and watershed scale • Evaluate water-related stresses on a structure • Understand and interpret flood hazard and risk maps, identify aggravating factors, and recognize planning strategies that help mitigate flood risks • Develop a personal value system and convictions to support an ethical approach to territorial design
Faculty or entity in charge	LOCI

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Bachelor in Engineering : Architecture	ARCH1BA	6		
Master [120] in Architecture and Engineering	ARCH2M	6		