UCL Université catholique de Louvain

LBIRE2103

2012-2013

General hydrology

5.0 credits	30.0 h + 22.5 h	1q

Teacher(s) :	Bielders Charles ; Vanclooster Marnik (coordinator) ;
Language :	Français
Place of the course	Louvain-la-Neuve
Main themes :	- Issues of water management at the local and catchment scale - Hydrological cycle (rainfall, infiltration, run-off, drainage, hypodermic flow, evapotranspiration) : processes, mathematical description, measurement methods and interpretation. - Hydrological modelling at the field and catchment scale - Hydraulic control of surface water flow
Aims :	At the end of the theoretical course (2.5 ECTS) and the practical exercises (2.5 ECTS), the students must be able : - to understand the issue of water management at the scale of the local scale (the field parcel) and the scale of the catchment ; - to describe the different processes and the different terms of the hydrological cycle at the scale of a pedon, the field parcel and the catchment, and to understand the equations used for describing these processes ; - to describe the functioning, the advantages and disadvantages of hydrological measurement devices ; - to interpret basic hydrological measurements (rainfall, evapotranspiration, drainage and run-off); - to calculate, by means of simple hydrological models, the rainfall runoff relationship at the field and catchment scale; - to justify the choice of a hydraulic device to control the surface water flow at the field and catchment scale; and - to write a synthetic report on the practical work and to analyse critically the obtained results. *The contribution of this Teaching Unit to the development and command of the skills and learning outcomes of the programme(s) can be accessed at the end of this sheet, in the section entitled "Programmes/courses offering this Teaching Unit".*
Content :	Theoretical courses - Introduction. Issues of hydrology at different scales - Rain- Infiltration - Evapotranspiration - Run-off - Hydrological modelling - Hydrological control Practical work The theoretical aspects are illustrated by means of practical work in the laboratory and computer class room around 2 hydrological projects : the design of a storm bassin in a catchment and the calculation of the hydrological balance of a field parcel. An excursion allows to illustrate concepts of hydrometry and hydrological control.
Other infos :	Supplemental courses Soil physics, integrated water resources management, open channel hydraulics Evaluation Report on the practical works and the excursion. Oral examination Support - Transparencies of the theoretical course (www.icampus.ucl.ac.be) - Syllabus (www.icampus.ucl.ac.be)
Cycle and year of study :	> Master [120] in Agricultural Bioengineering > Master [120] in Environmental Bioengineering > Master [120] in Forests and Natural Areas Engineering > Master [120] in Physics > Master [120] in Geography : Climatology > Master [120] in Geography : General
Faculty or entity in charge:	AGRO