


3.00 credits

22.5 h + 15.0 h

Q1

Teacher(s)	Javaux Mathieu ;
Language :	English
Place of the course	Louvain-la-Neuve
Prerequisites	General Hydrology (LBIR1348)
Main themes	<ul style="list-style-type: none"> - Open-channel hydraulics - stochastic modeling fro hydrology - Model optimization and parameterization
Learning outcomes	<p>At the end of this learning unit, the student is able to :</p> <ul style="list-style-type: none"> a. Contribution to 'Learning Outcomes' program M2.2 ; M2.3 ; M6.5 ; M6.8 b . Specific formulation for this activity LO program (maximum 10) <p>At the end of the course and of the practicals, the students will be able:</p> <ul style="list-style-type: none"> - to characterize the type of flow in channels/rivers. <p>1</p> <ul style="list-style-type: none"> - to understand and be able to apply the theory on gradually varying flow and rapid varying flow; - to measure the river discharge with different techniques - to use modelling approaches to simulate river discharge and design methods to control flood risks. - to estimate hydrological model parameters by different methods - to understand stochastic hydrology concepts - to use stochastic models to calibrate and simulate river discharge
Evaluation methods	<ul style="list-style-type: none"> • 50% on practical reports • 50% on oral evaluation of theory
Teaching methods	<ul style="list-style-type: none"> - The lectures can be given in English, but illustrated by slights in French. A reference textbook in French supports the lectures. - Field practical work for river discharge measurments - Practical work in the computer room allow students to use advanced methods of hydrological modeling - The practical work and the reports are a executed in teams
Content	<p><u>Theory :</u></p> <ul style="list-style-type: none"> - Open channel hydraulics (8 hours) - Stochastic modeling in hydrology (8 hours) - Parameter estimation (4 hours) <p><u>Practicals:</u></p> <ul style="list-style-type: none"> - Flow discharge measurements in situ (3 hours) - Modeling exercises in computer room : <ul style="list-style-type: none"> • HEC-RAS (6 hours) • Stochastic modeling (6 hours)
Inline resources	Moodle
Bibliography	<p>Ouvrage de référence : 'manuel technique d'HEC-RAS. Syllabus d'hydraulique- livre Hydrologie fréquentielle - une science prédictive (Meylan et al)</p> <p>Transparents des cours sur Moodle</p>
Other infos	This course can be given in English.
Faculty or entity in charge	AGRO

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Master [120] in Environmental Bioengineering	BIRE2M	3		
Master [120] in Agriculture and Bio-industries	SAIV2M	3		