



The version you're consulting is not final. This course description may change. The final version will be published on 1st June.

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| 3.00 credits | 22.5 h + 15.0 h | Q1 |
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| Teacher(s) | Javaux Mathieu ; |
| Language : | English > French-friendly |
| 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. |

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| Faculty or entity in charge | AGRO |
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| Programmes containing this learning unit (UE) | | | | |
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| Program title | Acronym | Credits | Prerequisite | Learning outcomes |
| Master [120] in Civil Engineering | GCE2M | 3 | |  |
| Master [120] in Environmental Bioengineering | BIRE2M | 3 | |  |