UCLouvain

lbir1328

2020

Climatology and hydrology applied to agronomy and the environment

Due to the COVID-19 crisis, the information below is subject to change, in particular that concerning the teaching mode (presential, distance or in a comodal or hybrid format).

6 credits	45.0 h + 22.5 h	Q1

Teacher(s)	Bielders Charles ;Goosse Hugues ;Vanclooster Marnik (coordinator) ;
Language :	English
Place of the course	Louvain-la-Neuve
Prerequisites	*The prerequisite(s) for this Teaching Unit (Unité d'enseignement – UE) for the programmes/courses that offer this Teaching Unit are specified at the end of this sheet.*
Aims	*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".*
Evaluation methods	**Due to the COVID-19 crisis, the information in this section is particularly likely to change.** • The examination is organised in examination sessions. It is a closed book written examination. • The timetable of the examination is set by the AGRO Faculty secretariat. • The examination is organised, by default, in French. Students who wish to do so may take the examination in English. In the latter case, the student requests permission to conduct the exam in English from the course coordinator by email (marnik.vanclooster@uclouvain.be) at least 48 hours before the start of the exam. • For LBIR1328A (6 ECTS): The examination mark counts for 85% and the 'entry tickets' for practical work count for 15% in the final mark. For the theoretical part, each part of each teacher counts equally in the examination mark, with the condition that the student obtains at least 6/20 for each part. If this condition is not met, the final grade will be equal to the grade of the part for which the student obtained the lowest grade. • For LBIR1328 (2 ECTS): Each mark for each each part of each teacher is equally distributed in the examination mark, with the condition that the student obtains at least 6/20 for each part. If this condition is not met, the final mark will be equal to the mark of the part for which the student has obtained the lowest mark. • In a second session, the mark from the successful parts of the first session are automatically considered when the student has obtained at least 14/20 for those successful parts.
Teaching methods	**Due to the COVID-19 crisis, the information in this section is particularly likely to change.** Theoretical course : Lectures in audience. Due to lecture room capacity limitations related to the COVID crisis, some part of the course can be organised at distance. Exercises : • Exercices in computer room • Supervised exercise sessions • Field excursion
Content	Bio-climatology • Exchange of heat and mass in the boundary layer of the atmosphere, inside plant communities and in the top layer of the soil. • Mechanisms of climate formation: atmospheric structure, vertical profiles in the lower layers, lateral movement, atmospheric circulation, clouds and precipitation, greenhouse effect, effects of landscape elements, dynamic and thermal action of relief and vegetation. • Influence of human activities on climate and impacts of global climate change. Hydrology • Water management issues at the plot and watershed scale. • The different components of the hydrological cycle (rain, infiltration, runoff, drainage, hypodermic flow, evapotranspiration): process, mathematical description, methods of measurement and interpretation. • Hydrological modelling at the plot and watershed scale. • Control structures for surface runoff and collection of runoff water.
Inline resources	• The slides and course comments are available on the MOODLE website of the course. • Practical work assignments are available on the MOODLE website of the course. • Example exam questions are available on the MOODLE site of the course at least 3 weeks before the start of the examination session.

Bibliography	• Syllabus : Notes du cours LBIR1328 Climatologie et hydrologie appliquée à l'agronomie et l'environnement Partie I. Climatologie, Hugues Goosse '' In, 158. Louvain-la-Neuve, Belgique: Université catholique de Louvain. • Ouvrage de référence : Musy, A. 2004. « Hydrologie. Une science de la nature. » Presses polytechniques et universitaires romandes. ISBN : 2-88074-546-2.
Other infos	This course is taught in English, but the support of the course (syllabus, slights) is in French. Examination can be organised in French or English
Faculty or entity in charge	AGRO

Programmes containing this learning unit (UE)

Program title	Acronym	Credits	Prerequisite	Aims
Master [120] in Biology of Organisms and Ecology	BOE2M	6		
Minor in Scientific Culture	MINCULTS	6		
Bachelor in Bioengineering	BIR1BA	6	LBIR1221	
Minor in Geography	MINGEOG	6		
Additionnal module in Geography	APPGEOG	6		
Master [120] in Agriculture and Bio-industries	SAIV2M	6		