UCLouvain

lbir1351

2019

Introduction to systems analysis

In view of the health context linked to the spread of the coronavirus, the methods of organisation and evaluation of the learning units could be adapted in different situations; these possible new methods have been - or will be - communicated by the teachers to the students.

3 credits	10.0 h + 20.0 h	Q1

Teacher(s)	Baret Philippe ;
Language :	French
Place of the course	Louvain-la-Neuve
Prerequisites	LBIR1271 Projet intégré en info et math appliquées *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.*
Main themes	Systems analysis: definition, theory and background. Conceptual bases for modeling applied to systems analysis. Designing models for systems analysis: defining objectives, identifying hypotheses, mathematical formulation, programming, parameter estimation, and assessment of the model. Systems analysis examples will initially address different global issues, but a particular focus will be given to the problem food security as an illustratory example throughout the course. Other, different modeling exercises/ projects will be carried out on computers based on a specific modeling tool (Simulink), in order to address different problems/ challenges in the areas of agronomical, biological and environmental engineering.
Aims	a. Contribution of instruction with regards to the referential of leaning outcomes B2.2, B2.3., B3.2., B3.3, B4.4. b . Specific formulation for this activity AA program (maximum 10) At the end of this activity, the student is able to: 1 ' Understand key steps underlying the modeling work necessary for carrying out the systems analysis and distinguish key differences with a reductionist approach. ' Utilize a systemic approach to effectively address issues dealing with a biological, agronomical and environmental challenges/ problems. - - - - *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.** Written exam and a programming exam.
Teaching methods	**Due to the COVID-19 crisis, the information in this section is particularly likely to change.** Instructions in a teaching room.
Content	The course consists of 5 introductory sessions (10hrs) which aim is to familiarize the student with key concepts underlying systems analysis. Another segment of the course (20hrs) will be entirely dedicated to modeling exercises/ projects with the aim of helping the student develop key and basic skills in modeling applied to systems analysis..
Inline resources	Moodle
Bibliography	Le cours ne fait appel à aucun support particulier qui serait payant et jugé obligatoire. Les ouvrages payants qui seraient éventuellement recommandés le sont à titre facultatif.
Faculty or entity in charge	AGRO

Programmes containing this learning unit (UE)

Program title	Acronym	Credits	Prerequisite	Aims
Minor in Development and Environment	LDENV100I	3		
Master [120] in Ethics	ETHI2M	3		
Master [120] in Philosophy	FILO2M	3		
Interdisciplinary Advanced Master in Science and Management of the Environment and Sustainable Development	ENVI2MC	3		
Master [120] in Environmental Science and Management	ENVI2M	3		
Master [120] in Geography : General	GEOG2M	3		
Bachelor in Bioengineering	BIR1BA	3	LBIR1271	