



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).

3 credits

30.0 h

Q2

Teacher(s)	Draye Xavier (coordinator) ;Javaux Mathieu ;Lobet Guillaume ;
Language :	French
Place of the course	Louvain-la-Neuve
Main themes	<ul style="list-style-type: none"> - Introduction to systems biology - Introduction to notions of dynamic and compartmentalized networks - Mathematical formalisms and software tools for the exploration of omics data - Initiation to modelling (practicals)
Aims	<p>a. <u>Contribution of this activity to the program learning outcomes</u> M1.1, M1.2, M2.2, M2.3, M3.1, M3.6, M4.4, M6.1, M6.3, M6.4</p> <p>b. <u>Learning outcome specifics for this activity</u> At the end of the course, the student is able to :</p> <p>1</p> <ul style="list-style-type: none"> · approach the functioning of an organism in a systems framework and at multiple scales ; · explain the specifics of systems biology · recognise and understand a systems biology methodology · explore the litterature with professional databases (e.g. Scopus), contact and discuss with researchers in the field · present a subject in a synthetic and pedagogic way to the student room <p>-----</p> <p><i>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".</i></p>
Evaluation methods	<p>Due to the COVID-19 crisis, the information in this section is particularly likely to change. The student is evaluated in groups on the basis of the quality and rigour of the project they present at the end of the course.</p>
Teaching methods	<p>Due to the COVID-19 crisis, the information in this section is particularly likely to change. The course takes the form of project-based learning. Students observe plants in the field, quantitatively describe their architecture taking into account information found in the literature and formalize their growth and development based on a mathematical model of the FSPM type provided to them at the beginning of the course.</p>
Content	Introduction to systems biology and biological systems modeling. The models considered are plant structure-function models (FSPM) and crop growth models (CGM).
Inline resources	FSPM executable and source code.
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	Aims
Master [120] in Agricultural Bioengineering	BIRA2M	3		
Master [120] in Environmental Bioengineering	BIRE2M	3		
Master [120] in Chemistry and Bioindustries	BIRC2M	3		