UCLouvain

lbio1342

2026

Plant morphogenesis

3.00 credits	20.0 h + 15.0 h	Q2

Teacher(s)	Chaumont François ;
Language :	French
Place of the course	Louvain-la-Neuve
Prerequisites	To follow this course, it is necessary to master the knowledge and skills developed in the courses LBIO1223, LBIO1240 and LBIO1242.
Main themes	The structural and functional characteristics of plant cells are analysed first. The regulation mechanisms of cell cycle, cytokinesis, elongation and cell differentiation are then studied. All through the course the student is introduced to scientific communication through the critical analysis of the form and the content of articles on the morphogenesis processes tackled during the course.
Learning outcomes	**At the end of this learning unit, the student is able to :** 1 - Allow the student to understand how the plant cell divides, grows and differentiates - Discover the physiological, cellular and molecular mechanisms controlling the plant cell growth and differentiation - At the end of the course, the students should understand the strategies and experimental methodologies used to understand plant development and morphogenesis
Evaluation methods	The assessment will take into account: - the preparation and presentation of the themes in front of the class (flipped classroom) - a detailed analysis of a literature article on a topic related to the course. Each student can be asked to prepare a written (report) and oral (presentation to other students) synthesis and answer questions from the teacher and fellow students. - the written answers to two questions on concepts related to the study of plant morphogenesis and development. The students will be asked to self-assess themselves on flipped classroom work and this self-assessment can be used to adapt the teacher's grade. If generative AIs are used, the student must systematically indicate all parts where AIs have been used, e.g. in a footnote or in Power Point slides, specifying whether the AI was used to search for information, to write the text or to correct it. Furthermore, sources of information must be systematically cited in accordance with bibliographic referencing standards. Students remain responsible for the content of their work, regardless of the sources used.
Teaching methods	The course includes modules during which the teacher introduces the basic concepts and some themes, and other modules organized in flipped classroom. In this context, the students can be divided into working groups and assigned a theme. They will develop the theoretical aspects of this theme and analyze and present an article from the literature on the subject.
Content	The structural and functional characteristics of plant cells are analysed. The molecular mechanisms of cell cycle regulation, cell elongation and differentiation, cell wall formation, plast differentiation, and plasmodesmata function are studied. The general principles of the experimental approaches needed to investigate these processes are described.
Inline resources	Moodle
Bibliography	Ouvrages de référence mentionnés au premier cours
Other infos	Precursory courses: Basic courses in plant biology and physiology.
Faculty or entity in charge	BIOL

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Master [120] in Biochemistry and Molecular and Cell Biology	BBMC2M	3		🔍
Additionnal module in Biology	APPBIOL	3		🔍