

2.00 credits

30.0 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	Different processes of development and morphogenesis are studied. The mechanisms of embryos edification, vegetative and reproductive systems are analysed. Tropisms phenomena and movements are envisaged. The effect of environment and phytohormones on plant development are studied. Finally the student is introduced to scientific communication through the critical analysis of the form and the content of articles on the development and morphogenesis processes tackled during the course.
Learning outcomes	<p>At the end of this learning unit, the student is able to :</p> <ul style="list-style-type: none"> - Understand the organ formation and plant development all through its life - Understand how an organism fixed to the substrate adapts its edification processes to face environmental variations. - Discover the physiological, cell and molecular mechanisms that control the plant development. - At the end of the course, the students should be able to understand the biological strategies and experimental methodologies used to understand the plant development and morphogenesis.
Evaluation methods	<p>The assessment is based, on the one hand, a written examination on the material covered in the course (75%, 15 points out of 20 of the final mark) and, on the other hand, a compulsory group work consisting of the preparation of a written essay and an oral presentation of an article from the literature (25%, 5 points out of 20 of the final mark).</p> <p>Existence of an absorbing mark: a minimum mark of 8/20 in the written examination (i.e. 5.6 points out of 20 of the final mark) is required for the mark for the group work to be taken into account in the calculation of the final mark.</p> <p>The compulsory group work is a continuous assessment of student work. Therefore, no further assessment is organised during the examination sessions for this part. The mark obtained for this part is deemed to be attached to each session of the academic year. In the framework of this activity, students are also asked to self-assess the work of their group (involvement of each student, dynamics...) and this self-assessment can be used to adapt the teacher's grade.</p> <p>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.</p>
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 are 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	Different processes of plant development and morphogenesis are studied at the genetic and molecular level. What are the molecular and cellular mechanisms that allow the plant to develop and adapt to environmental conditions? How can we discover and understand them? The themes studied include the mechanisms of embryo building, the vegetative and reproductive system, the process tropisms and the effects of the environment on plant development, the essential role of phytohormones (auxin, brassinosteroids...) and the mechanisms associated with their perception, transport, and regulation. The general principles of the experimental approaches needed to investigate these mechanisms 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
Bachelor in Biology	BIOL1BA	2		