


3.00 credits

24.0 h + 12.0 h

Q1

Teacher(s)	Lutts Stanley ;Quinet Muriel ;
Language :	French
Place of the course	Louvain-la-Neuve
Main themes	<p>The biological and economical importance of the abiotic and biotic environment will be shown in the introductory part.</p> <p>Attention will then be focused on the analysis of mechanisms of establishment, maintenance, termination and functioning of interactions between plants and microorganisms, both mutualistic symbionts and parasites. Examples of well-studied interactions will be used to demonstrate the general principles.</p> <p>We then go into detail about the main effects of abiotic stress factors (water stress, salt stress, extreme temperatures) and toxic minerals (aluminum and heavy metals, atmospheric pollution).</p> <p>The resistance strategies will be explained by accentuating from a cinetic viewpoint the mechanisms of perception of the stress agent, the activations of transduction signals and the expression of genes that are likely to contribute to the establishment of a resistance strategy.</p>
Learning outcomes	<p>At the end of this learning unit, the student is able to :</p> <p>1 This course aims to show how, at the genetical, biochemical and physiological levels, a plant reacts to its environment, by establishing profitable or deleterious relationships with other organisms, especially microorganisms, or by developing resistance mechanisms to abiotic constraints.</p>
Evaluation methods	<p>The final mark is made up of the mark of the theoretical examination (oral examination) and the mark of the practical work (written report).</p> <p>The mark for the theoretical examination is worth 15/20 of the final mark and the mark for the practical work is worth 5/20 of the final mark.</p> <p>Participation in practical work, tutorials and exercises is mandatory and essential to validate the teaching unit.</p> <p>Any unjustified absence entails a penalty on the EU examination which may go as far as the cancellation of the examination mark for the relevant study year (0/20).</p> <p>In the event of repeated and even justified absences, the teacher may propose to the jury to oppose the registration for the EU examination in accordance with article 72 of the EGRR.</p>
Teaching methods	Theoretical lectures in auditorium and practical work in greenhouses, lab and in the field.
Content	This course will focus on the interactions of plants with their abiotic environment. The main effects of abiotic stresses (hydric and thermal stresses, climatic changes, etc.) and mineral toxicities (salinity, heavy metals, iron toxicity, etc.) on plant growth and development and the physiological, biochemical and genetic strategies implemented by the plant to respond to them will be described in detail.
Other infos	<p>Prerequisite :</p> <p>plant biology, plant physiology, biochemistry, genetics</p>
Faculty or entity in charge	BIOL

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Master [120] in Biology of Organisms and Ecology	BOE2M	3		
Master [60] in Biology	BIOL2M1	3		