

<b>General Information</b>	
Academic subject	Plant Physiology
Degree course	Agricultural Science and Technology
Curriculum	Plant production and protection
ECTS credits	3 ECTS (2 ECTS Lectures + 1 ECTS Laboratory)
Compulsory attendance	No
Language	Italian

<b>Subject teacher</b>	Name Surname	Mail address	SSD
	Claudio Cocozza	claudio.cocozza@uniba.it	AGR 13

<b>ECTS credits details</b>			
Basic teaching activities	Plant production disciplines	AGR 13	

<b>Class schedule</b>	
Period	Second semester
Year	2017/2018
Type of class	Lecture- workshops

<b>Time management</b>	
Hours	75
In-class study hours	30
Out-of-class study hours	45

<b>Academic calendar</b>	
Class begins	5th March, 2018
Class ends	22nd June, 2018

<b>Syllabus</b>	
Prerequisites/requirements	
Expected learning outcomes (according to Dublin Descriptors) (it is recommended that they are congruent with the learning outcomes contained in A4a, A4b, A4c tables of the SUA-CdS)	<p><i>Knowledge and understanding</i></p> <ul style="list-style-type: none"> <li>○ Knowledge and understanding of the basic aspects of plant physiology</li> </ul> <p><i>Applying knowledge and understanding</i></p> <ul style="list-style-type: none"> <li>○ Understanding the physiology of the crops</li> </ul> <p><i>Making informed judgements and choices</i></p> <ul style="list-style-type: none"> <li>○ Ability to identify the physiological imbalances of crops</li> <li>○ Manage the irrigation, the fertilizers and the environment in order to restore the better physiological conditions of crops</li> </ul> <p><i>Communicating knowledge and understanding</i></p> <ul style="list-style-type: none"> <li>○ Ability of describing the physiological phenomena involving the crops</li> </ul> <p><i>Capacities to continue learning</i></p> <ul style="list-style-type: none"> <li>○ Ability of updating the knowledge about the plant physiology in the considered context</li> </ul> <p>The results of the expected learning, in term of knowledge and ability, are listed in the Annex A of the Didactic Regulation of the Bachelor Degree Course (expressed by the European descriptors of the study title).</p>

Contents	<p>Plants and water. Structure and properties of water. Diffusion and osmosis. The water potential. The water potential of the plant cell. The properties of the cell wall and membrane.</p> <p>Water and soil. The root water absorption. The xylematic water transportation. The water from the leaf to the atmosphere.</p> <p>Essential nutrients. The treatments of the nutritional imbalances. Soil root and microorganisms.</p> <p>Sources and sinks. Model of translocation from sources to sinks.</p> <p>Loading and unloading of the floem.</p> <p>Nitrogen in the environment. Absorption of nitrate and ammonium. Nitrogen fixation. Absorption of Sulphur, phosphorous, cations and oxygen.</p>
Course program	
Bibliography	<ul style="list-style-type: none"> <li>• Notes of the lectures</li> <li>• Fisiologia Vegetale (2013). L. Taiz, E. Zeiger. Piccin Editore</li> </ul>
Notes	Students could get a copy of all presentations from the lecturer
Teaching methods	The subjects will be provided with several examples and illustrations by means of Power Point presentations, movies, practical drills in the classroom and laboratory
Assessment methods	<p>Only the students enrolled in the academic year during which this module is offered, can have an intermediary exam during the teaching period of module. The result of this intermediary exam remains valid for the whole academic year and concurs to the final evaluation of the student.</p> <p>The intermediary exam will be given on the subjects treated during the lessons and the practical activities as reported in the Didactic Regulation in Agricultural Science and Technology (art. 9) and syllabus (annex A) and which is correlated to the actual teaching period. The evaluation of the intermediary exam is expressed in thirtieths.</p> <p>At the end of the module teaching period, the students, who passed positively the intermediary exam, can give the final exam concerning on the subjects treated during the lessons and the practical activities since the intermediary exam, as reported in the Didactic Regulation in Agricultural Science and Technology (art. 9) and syllabus (annex A) and which is correlated to the actual teaching period.</p> <p>Students who did not pass or give the intermediary exam will be examined on the whole subjects treated during the lessons and the practical activities as reported in the Didactic Regulation in Agricultural Science and Technology (art. 9) and syllabus (annex A) and which is correlated to the actual teaching period.</p> <p>The intermediary and the final exams consist of an oral examination. The evaluation of the student is based on criteria previously fixed such as reported in the Annex A of the Didactic Regulation in Agricultural Science and Technology.</p> <p>The exam for foreign students can be given in English according to the above reported modalities.</p>
Evaluation criteria (Explain for each expected learning outcome what a	<ul style="list-style-type: none"> <li>• <i>Knowledge and comprehension ability</i></li> </ul>

<p>student has to know, or is able to do, and how many levels of achievement there are.</p>	<ul style="list-style-type: none"> <li>○ Description of the basic physiological aspects of the plants</li> <li>• <i>Knowledge and applied comprehension ability</i> <ul style="list-style-type: none"> <li>○ Description of the physiological aspects of the crops</li> </ul> </li> <li>• <i>Autonomy of judgement</i> <ul style="list-style-type: none"> <li>○ Correct identification of the physiological imbalances of crops and management of the irrigation, fertilization and environment to restore the better physiological conditions of crops</li> </ul> </li> <li>• <i>Communication skills</i> <ul style="list-style-type: none"> <li>○ Exhaustive description and illustration, with appropriateness of term, richness of examples and correlation of the plant physiology</li> </ul> </li> <li>• <i>Learning ability</i> <ul style="list-style-type: none"> <li>○ Adaptation of the basic cognitive tools acquired during the module in order to explain and solve numerous applied problems and diversified case study</li> </ul> </li> </ul>
<p>Further information</p>	<p>The visiting hour can be every day, after a request of appointment</p>