

General information	
Academic subject	Plant physiology and ecophysiology
Degree course	<i>Scienze of Nature</i>
Academic Year	<i>III</i>
European Credit Transfer and Accumulation System (ECTS)	9
Language	<i>Italian</i>
Academic calendar (starting and ending date)	<i>First week of October Second week of January</i>
Attendance	<i>yes</i>

Professor/ Lecturer	
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Department and address	<i>Department of Biology Via Orabona, 4 70125 Bari (Italy)</i>
Virtual headquarters	<i>Team code: 5ko7f9s</i>
Tutoring (time and day)	Tuesday 12-14. or by appointment agreed by e-mail. Place: Botanical building, second floor room 21.

Syllabus	
Learning Objectives	Acquisition of the specific knowledge to understand the functions of plant also in relation to environmental conditions.
Course prerequisites	Basic knowledge of botany, cytology and chemistry. In particular, basic knowledge of plant cell, plant morphology, and basic chemical notions
Contents	Relationships between Plant and water: water and plant cells, water balance of plants. Mineral nutrition. Solute transport. Photosynthesis. Carbon assimilation. Transport in the phloem and distribution of photosynthesis products. Assimilation of mineral nutrients (nitrogen, sulfur, phosphorus, cations). Plant responses to light Light as an environmental signal. Plant hormones. Transition from the vegetative phase to the reproductive phase. Seed physiology: development, germination.
Books and bibliography	Rascio e AA:VV. Elementi di Fisiologia vegetale EdiSes 2017; Taiz, Zeiger Fisiologia Vegetale, Piccin 2015.
Additional materials	To complete and acquire further information on plant physiology, the teacher can provide, at the request of the student, bibliographic indications and scientific articles on specific topics.

Work schedule			
Total	Lectures	Hands on (Laboratory, working groups, seminars, field trips)	Out-of-class study hours/ Self-study hours
Hours			
225	72		153
ECTS			
9	9		



Teaching strategy	
Expected learning outcomes	
Knowledge and understanding on:	Acquisition of <ul style="list-style-type: none"> ○ specific knowledge in plant physiology ○ understanding of responses to environmental stress
Applying knowledge and understanding on:	<ul style="list-style-type: none"> ○ knowing how to deal with environmental issues on a scientific basis
Soft skills	<ul style="list-style-type: none"> • <i>Making informed judgments and choices</i> <ul style="list-style-type: none"> ○ Ability to evaluate and interpret the acquired knowledge in autonomy in order to critically assimilate contents and problems that may be proposed. • <i>Communicating knowledge and understanding</i> <ul style="list-style-type: none"> ○ Acquisition of ○ a correct scientific language ○ Ability to expose oral topics ○ Ability to write concisely and clearly topics concerning the functions of plant organisms also in relation to the responses to environmental parameters • <i>Capacities to continue learning</i> <ul style="list-style-type: none"> ○ The student will be able to understand the interactions form-function-environment and also will be able to update the information acquired.

Assessment and feedback	
Methods of assessment	Oral test with at least three questions. During the course, two self-assessment tests will be carried out with some multiple choice and open answer questions in order to control students' learning
Evaluation criteria	<p>The student will be able</p> <p><i>Knowledge and understanding</i></p> <ul style="list-style-type: none"> ○ to know and understand all the contents concerning the fundamental functions of the plants, i.e. the plant-water relationships, photosynthesis, mineral nutrition, growth, reproduction and development mechanisms. <p><i>Applying knowledge and understanding</i></p> <ul style="list-style-type: none"> ○ to use, in the most appropriate way, the concepts learned demonstrating to know how the plant lives, grows and reproduces also in different environmental conditions <p><i>Autonomy of judgment</i></p> <ul style="list-style-type: none"> ○ to create simple but significant connections between the basic topics of plant physiology <p><i>Communicating knowledge and understanding</i></p> <ul style="list-style-type: none"> ○ To expose the topics and establish relationships among topics <p><i>Communication skills</i></p> <ul style="list-style-type: none"> ○ to demonstrate ability to express concepts with a proper and clear language. <p><i>Capacities to continue learning</i></p> <ul style="list-style-type: none"> ○ to read literature and update their knowledge on the topics of plant physiology and ecophysiology
Criteria for assessment and attribution of the final mark	<i>The evaluation of examination test score is given by a vote expressed in thirtieth. The student will have to demonstrate:</i>



	<p>a) <i>knowledge and understanding of the basic contents</i></p> <p>b) <i>ability to explain clearly and concisely topics using an appropriate language</i></p> <p>c) <i>connect the topics with logical reasoning.</i></p> <p><i>In the evaluation of the exam test the following elements will taken into account:</i></p> <ol style="list-style-type: none"><i>1. Specific knowledge</i><i>2. Language properties</i><i>3. Ability to link topics</i><i>4. Possible positive outcome of ongoing checks</i> <p><i>The satisfaction of the aspects (No. 1,2,3) is a necessary and sufficient condition for passing the examination test and obtaining an appropriate evaluation. The maximum mark will be given to students whose tests fully satisfy all the aspects (1-4) listed above.</i></p> <p><i>During the exam, the student must show the acquisition of critical skills and the ability to adequately discuss simple problems already proposed during the course by the teacher.</i></p>
Additional information	