Universitat Autònoma de Barcelona

2023/2024

Plant Physiology

Code: 100945
ECTS Credits: 3

Degree	Type	Year	Semester
2500253 Biotechnology	OB	1	2

Contact

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Teaching groups languages

You can check it through this link. To consult the language you will need to enter the CODE of the subject.
Please note that this information is provisional until 30 November 2023.

Teachers

Isabel Corrales Pinart

Prerequisites

There are no prerequisites.

Objectives and Contextualisation

Objectives of the course

1) It integrates functional processes from different levels of organization to the entire plant.

2) It covers the bases of the functioning of the vegetable and its processes of regulation.

3) Establish the basis of the knowledge of the physiological functioning and processes of plants in view of their biotechnological use.

Competences

- Describe the molecular, cellular and physiological bases of the organisation, functioning and integration of living organisms in the framework of their application to biotechnological processes.
- Learn new knowledge and techniques autonomously.
- Make an oral, written and visual presentation of one's work to a professional or non-professional audience in English or in one's own language.

- Read specialised texts both in English and one's own language.
- Reason in a critical manner
- Search for and manage information from various sources.
- Think in an integrated manner and approach problems from different perspectives.
- Work individually and in teams

Learning Outcomes

1. Describe the principles behind the functioning of plants and their processes of regulation.
2. Develop a critical approach to anthropic impacts on the biosphere.
3. Establish the principles behind the functioning of physiological processes in plants, with a view to using them in biotechnology.
4. Integrate functional processes from the different levels of organisation to the whole plant.
5. Learn new knowledge and techniques autonomously.
6. Make an oral, written and visual presentation of one's work to a professional or non-professional audience in English or in one's own language.
7. Read specialised texts both in English and one's own language.
8. Reason in a critical manner
9. Search for and manage information from various sources.
10. Think in an integrated manner and approach problems from different perspectives.
11. Work individually and in teams

Content

Characteristics of the plant cell. Cell wall. Water relations and mineral nutrition of the plant. Absorption and transport of water and nutrients. Photosynthesis and related processes. Primary and secondary metabolism. Regulation of growth. Phytohormones. Sensory systems and regulation of flowering. Photoperiodism, thermoperiodism and vernalization. Fruiting and ripening of fruits and seeds. Germination. Plants under adverse conditions. Senescence and abscission. Biotechnological applications of plants.

Unless the requirements enforced by the health authorities demand a prioritization or reduction of these contents.

Methodology

The teaching methodology combines master classes, personal study and individual and team work

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Classes	15	0.6	5, 3, 9, 11
Seminars	5	0.2	5, 9, 1, 2, 6, 4, 7, 10, 8, 11

Type: Autonomous			
Personal work	48	1.92	5, 3, 9, 4, 7, 10, 8, 11

Assessment

The evaluation of the master classes will be carried out through two partial exams. The format of the written tests will be at the discretion of the teacher.

The seminars (SEM) will be compulsory attendance and the evaluation and weight on the final grade of these will be the same as those of the continuous evaluation (10%)

The format of the written tests will be at the discretion of the teacher.

To participate in the recovery, the students must have been previously evaluated in a set of activities whose weight equals to a minimum of two thirds of the total grade of the subject or module.

Assessment criteria: The mark results from the qualification of the corresponding exam in the master classes (90%, which corresponds to 45% for each of the tests) and the participation and presentation of the seminars (10%).

Non-Evaluable: Students will obtain the "Non-Evaluable" qualification when the assessment activities carried out have a weighting of less than 67% in the final grade

In the case of not passing or not having been submitted to one or all of the partial exams, the student must present themselves to the recovery of those parts not surpassed, except for the seminars, which by their nature are not recoverable (article 112 ter of the regulations of evaluation).

In the event that the subject is not passed, it will be necessary for the student to submit to the evaluation of the partial proofs of theory and, in the case of having passed the seminars, the grade will be saved for the course or following courses until you approve the total of the subject. Likewise, if the whole theory is overcome but not the seminars, it will be necessary to repeat them the next course, while the theory note will be saved.

Examination-based assessment.

The single assessment consists of a single synthesis test on the contents of the entire theory program.

Themark obtained inthe synthesis test is 90% of the final grade of the subject, in the seminars the remaining 10%.

The single assessment test will coincide with the same date set in calendar for the last continuous assessment test and the same recovery system will be applied as for continuous assessment.

To pass the subject it is necessary to obtain a minimum final grade of 5 points out of 10 in each of the parts (synthesis test, and Seminars)

Special cases: The duly justified special cases will be solved individually with the teacher of the subject.

For all cases not included in the previous sections or in case of doubt, the Evaluation Regulations of the Faculty of Biosciences will prevail.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Classes	90%	6	0.24	5, 3, 9, 1, 2, 4, 7, 10

Seminars	10%	1	0.04	5, 9, 6, 7, 10, 8, 11

Bibliography

Bibliografia

1) Fisiología Vegetal, J. Barceló et al., Ed. Piràmide, Madrid 2005 i següents

2) Plant Physiology, L. Taiz y E. Zeiger,Sinauer, Sunderland, MA (USA), 2006 i següents.

web links

3) http://5e.plantphys.net/

Campus Virtual de l'Autònoma Interactiva: https://cv2008.uab.cat

Software

No specific programs will be used.