

**Plant Physiology**

Code: 100945  
ECTS Credits: 3

| Degree                | Type | Year | Semester |
|-----------------------|------|------|----------|
| 2500253 Biotechnology | OB   | 1    | 2        |

The proposed teaching and assessment methodology that appear in the guide may be subject to changes as a result of the restrictions to face-to-face class attendance imposed by the health authorities.

**Contact**

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**Use of Languages**

Principal working language: catalan (cat)  
Some groups entirely in English: No  
Some groups entirely in Catalan: Yes  
Some groups entirely in Spanish: No

**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 ones work to a professional or non-professional audience in English or in one's own language.
- Read specialised texts both in English and ones 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 ones work to a professional or non-professional audience in English or in one's own language.
7. Read specialised texts both in English and ones 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

## 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 lectures will be done through two partial exams. 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.

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>