

**COURSE DATA****DATA SUBJECT****Code:** 33080**Name:** Botany**Cycle:** Undergraduate Studies**ECTS Credits:** 6**Academic year:** 2025-26**STUDY (S)**

Degree	Center	Acad. year	Period
1104 - Degree in Environmental Sciences	Facultat de Ciències Biològiques	1	Second quarter

SUBJECT-MATTER

Degree	Subject-matter	Character
1104 - Degree in Environmental Sciences	Botany	BASIC

COORDINATION

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SUMMARY

Botany in Environmental Science aims to introduce the student, in general, the variability of organisms traditionally studied in this specialty: Fungi, Algae, Bryophytes, Ferns, Gymnosperms, and Flowering Plants, following an evolutionary perspective that unifies content as far as possible. When dealing with different groups, the environmental importance of each of them or, in special cases, of a particular organism, is taken into consideration. This can be broken down into a series of objectives:

- To acquire a general knowledge of the organization, life cycles, reproduction, evolution and classification of plants.
- To know the major plant groups and their evolutionary relationships and their relative importance in ecosystems.
- To develop a solid conceptual and terminology relating to various aspects of botany.

To gain comprehensive knowledge about the distribution patterns of plants, their causes, results and implications for evolutionary and conservation of biodiversity at regional, national and global.



PREVIOUS KNOWLEDGE

RELATIONSHIP TO OTHER SUBJECTS OF THE SAME DEGREE

There are no specified enrollment restrictions with other subjects of the curriculum.

OTHER REQUIREMENTS

COMPETENCES / LEARNING OUTCOMES

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Conocer e interpretar la biodiversidad vegetal y su interacción con otros sistemas biológicos y su importancia ambiental.

Conocer las características y los procesos generales de los principales ecosistemas y hábitats.

Conocer los principales impactos humanos sobre los sistemas naturales.

Conocer y comprender la estructura y función de Microorganismos.

Conocer y dominar los procedimientos para estimar e interpretar la biodiversidad.

Identificar y comprender las bases de la diversidad microbiana y su importancia ambiental.

DESCRIPTION OF CONTENTS

1. Botany

Justification of the subject. Importance of plants and vegetation in Environmental Sciences. Concept of plant variability. General features. The evolutionary perspective on the study of botany.

2. Diversity and Classification of the plant world.

Diversity of the plant world. Managing diversity: plant classifications. Taxonomy. Botanical nomenclature. Classification of plants. Outline of the main groups. Levels of organization and main morphological types.

3. Reproduction

Asexual reproduction: vegetative propagation and mitotic sporulation. Sexual reproduction: fertilization and main types of life cycle.



4. Fungi

Concept, morphology and interest in human activity. Description of lichenized fungi. Description and importance of mycorrhizae

5. Symbiotic fungi: Lichen and mycorrhizae

Concept, morphology and interest in human activity. Description of lichenized fungi. Description and importance of mycorrhizae.

6. Introduction to embryophytes

The colonization of the aerial environment. Archegoniates. Meaning of the embryo. Bryophytes. Characteristics of the main Divisions. Importance in nature and interest in human activity.

7. Algae

Concept. Characteristics of the main divisions. Importance in nature and interest in human activity.

8. Introduction to embryophytes

The colonization of the aerial environment. Archegoniates. Meaning of the embryo. Bryophytes. Characteristics of the main Divisions. Importance in nature and interest in human activity.

9. Introduction to vascular plants

Fundamentals of organization and general morphology of the vegetative body. Adaptations to environmental stresses or special ways of life.

10. Pteridophytes: Ferns and fern allies

Characteristics of the main divisions. Importance in nature and interest in human activity. Types of life cycles and their evolutionary significance

11. Introduction to seed plants

Present moment of the process of reducing the gametophytes. Interpretation of the life cycle and its implications. Meaning of the seed. The spermatophyte morphology.



12. Gymnosperms

General features. Main families and genera in the iberian peninsula.

13. Flowering plants

General features. Morphology of the flower. Pollination. Inflorescences. The fruit and the mechanisms of seed dispersion.

14. Classification of flowering plants

General traits of major groups. Systematics.

WORKLOAD

PRESENCIAL ACTIVITIES

Activity	Hours
Tutorials	3,00
Theory	36,00
Laboratory	21,00
Total hours	60,00

NON PRESENCIAL ACTIVITIES

Activity	Hours
Attendance at other activities	0,00
Individual or group project	20,00
Independent study and work	20,00
Preparation of lessons	10,00
Preparation for assessment activities	40,00
Resolution of case studies	0,00
Total hours	90,00

TEACHING METHODOLOGY

EVALUATION

We considered two aspects (theory and practicum) in the evaluation of the subject. The respective percentages in the final grade will be as follows:



Theory: 70%. Be evaluated by final examination. The test may consist of both short questions, preferably reasoned, or a large enough test to weigh the student learning.

Practicum: 30%. Be assessed by:

- **Laboratory** (75% of the grade of the practicum): by correcting the practice notebook done in each session (evaluation of participation in the class) and a laboratory exam consisting of: 1) the recognition of the different plant groups with different detail depending on the group in question, their general organization and the vegetative or reproductive structures that are recognized; 2) the identification with keys of one or several specimens; and 3) *de visu* identification of 10 plants from a list provided at the beginning of the course.
- **Field:** (25% of the grade of the practicum): by means of a report of the results obtained in the two excursions carried out (grading of exercises).

Given the compulsory nature of the practicum, unexcused absence from excursions or from more than 25% of the laboratory sessions means that the student loses the right to take the exam and, therefore, fails the practical part of the course.

In each examination session, it will be possible to average the theory and practical grades, provided that a minimum score of 4.0 has been achieved in both parts during that session. In order to calculate the average, it is essential to obtain more than 4.0 in the laboratory practical exam. This compensatory measure is not maintained between the 1st and 2nd exams, i.e. it only applies to the exam in which the mark was obtained.

For the assessment in the second and subsequent exam sessions, the mark for the practicals already passed may be maintained. In any case, the student may repeat the practicals to increase the overall mark

To apply for advance evaluation of this course compulsory activities (practicum) should have been passed.

REFERENCES

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- HOEK, C. van den et al. 1995. Algae. An introduction to Phycology. Cambridge Univ. Press. Cambridge
- LEE, R.E. 1999. Phycology (3rd. ed.) Cambridge University Press.