

## 25251 - Botany

### Syllabus Information

**Academic year:** 2024/25

**Subject:** 25251 - Botany

**Faculty / School:** 201 - Escuela Politécnica Superior

**Degree:** 571 - Degree in Environmental Sciences

**ECTS:** 6.0

**Year:** 1

**Semester:** Second Four-month period

**Subject type:** Basic Education

**Module:**

### 1. General information

The teaching of this subject is intended to provide the knowledge and train the skills and attitudes necessary for the student to acquire the basic fundamentals of botany needed by environmental professionals, showing the fields of application, both academic and professional, of this discipline.

These approaches and objectives are aligned with the Sustainable Development Goals (SDGs) of the 2030 Agenda of the United Nations (<https://www.un.org/sustainabledevelopment/es/>), specifically, the learning activities planned in this subject will contribute to the achievement of Objective 4.7 of Goal 4, Objective 5.5 of Goal 5, Objective 13.3 of Goal 13 and Objective 15.4 of Goal 15.

### 2. Learning results

- Describe, argue and explain the structural and functional characteristics of plants, as well as their taxonomic classification, biodiversity and evolution.
- Perform efficiently in a botanical laboratory and select the appropriate tools (identification keys) for the characterization of biodiversity thus identifying the majority of botanical families, using an appropriate nomenclature
- Work autonomously.
- Carry out processes of analysis, synthesis and information management and expand their capacity to work in groups.

### 3. Syllabus

#### Program theory

##### INTRODUCTION

Plant kingdom. Plant characteristics. Branches of Botany.

##### BOTANICAL ANATOMY

Morphological levels of organization. Histology: Meristematic, parenchymal, supporting, vascular, superficial tissues. Anatomy of plant organs. Morphology of cormophytes; Stem, Leaf, Root, Flower and Fruit. PLANT REPRODUCTION

Sexual reproduction of plants. Dissemination of seeds and fruits. Asexual reproduction.

##### PLANT SYSTEMATICS

Fundamentals of systematics. Division Glaucophyta, Rhodophyta, Chlorophyta and Streptophyta. Embryophytes (bryophytes and tracheophytes)

#### Practical Program

Plant Systematics and Dichotomous Keys

Morphological recognition and identification of ferns, gymnosperms and angiosperms

Field trip

### 4. Academic activities

**Master classes:** 30 hours

Sessions in which the contents of the subject are explained.

**Laboratory practices:** 26 hours

Practical sessions of morphological recognition and species identification.

**Field practices:** 4 hours

Field practice of morphological recognition and species identification.

## Herbarium

Elaboration of a practical work of collection and identification of flora. 25 non-attendance hours. Availability at the laboratory of floras and dichotomous keys, as well as other tools and materials such as presses and tweezers, needles, paper, etc. Individual or group tutorials for its creation.

## 5. Assessment system

**Global face-to-face test at the end of the semester, which will consist of:**

### Theoretical section.

Written test on the topics developed in the subject. It may be made up of questions that require short answers or a broad development of the topic. Percentage in the final grade: 50%.

### Practical section.

Practical test based on the identification of morphological structures and different botanical species. It will be held the last week of classes of the term (first call), and on the date established by the PS for the second call for exams. Percentage in the final grade: 40%.

Creation of a herbarium. The student will individually select 20 plants and with them will create a herbarium, filling out a morphological description form, whose model will be provided in class. The morphological knowledge and good handling of the tools for their identification will be given in the practical classes. Percentage in the final grade: 10% **Calculation of**

### the Final Grade, CF:

CF = 50% theoretical part + 50% practical part

If the minimum requirements are not met in the evaluation activities of the theoretical part (5 points out of 10) and the practical part (5 points out of 10), the subject will not be considered passed, even if the final grade, CF, according to the weighted average is equal to or higher than 5. So, in that case, if:

CF is  $>$  or  $=$  4, the final grade will be: Fail, 4.

CF  $<$  4, the final grade will be: Fail, CF.

### Success rate:

2020/2021: 52.63%

2021/2022: 63.41%

2022/2023: 60.98%

## 6. Sustainable Development Goals

13 - Climate Action

15 - Life on Land