

Academic Year/course: 2021/22

25251 - Botany

Syllabus Information

Academic Year: 2021/22

Subject: 25251 - Botánica

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

1.1. Aims of the course

To provide knowledge and train the skills and attitudes necessary so that the student acquires environment, showing the fields of application, academics and professionals in this discipline

1.2. Context and importance of this course in the degree

The subject contains knowledge of direct application in the exercise of the profession in fields related to the Botany (see Methodological overview)

2. Learning goals

3. Assessment (1st and 2nd call)

3.1. Assessment tasks (description of tasks, marking system and assessment criteria)

Global face-to-face test at the end of the semester:

1.- Written test on the basic knowledge of Botany.

Written tests are made up of questions that require short answers (limited answer tests) or that require a broad development of the topic (essay tests or free and open answer). Likewise, there will be questions where the student will have to unify, contextualize and extrapolate what has been learned in the course to real botanical problems. The first type of question allows evaluating the specific knowledge of the student on the subject, and the other two types of question allow evaluating their capacity for expression, argumentation and criticism.

The percentage of the total score of the written test is 45%.

2.- Practical test on the basic knowledge of Botany.

The practical test is based on the identification of 1.- Morphological structures and 2.- of different botanical species. The first part of the test evaluates the capacity and ability that the student has developed for practical work and manipulation of organisms or structures. The second part evaluates the efficient use of tools for identification (dichotomous keys), and that certify the student's ability to carry out inventories and censuses of flora.

The percentage of the total qualification of the practical test is 40%.

3.- Exhibition and public defense of a short seminar on a topic related to Botany.

Students will select the topics and they will be the ones who set the objectives and carry out the research on the specific topic. The work will be exposed and defended in pairs or individually in seminar-type sessions, promoting debate among attendees. The time available for the seminar presentation will be 5 minutes and 5 minutes of defense (question session).

The percentage of the total seminar grade is 5%.

4.- Preparation of a work to identify plant species from plants chosen by the student.

The student will individually select 25 plants and with them will elaborate a herbarium, filling in a morphological description sheet whose model will be supplied in class. The basic morphological knowledge for the identification of the species and the learning and good handling of the tools for their identification (dichotomous keys, floras) will be given in the practical classes. With the elaboration of the herbarium, the student's autonomous work capacity, the use of tools for the identification of flora and their ability to prepare inventories and censuses of flora are evaluated.

The percentage of the total qualification of the herbarium is 10%.

Evaluation criteria:

The course will have a global assessment at the end of the semester. Said test will be carried out in the official calls approved by the Higher Polytechnic School. The test will evaluate 100% of the subject as follows: theory 45%, practical 40%, seminar 5% and herbal 10%. However, evaluation activity 3 (seminar) can be carried out at the beginning or end of the practices throughout the semester, at the request of the students. Likewise, it is recommended to appear at assessment activities 2 (practical exam) and 4 (herbal) one or two weeks prior to the official call.

Final Grade Calculation, CF:

CF = 45% note written in-person test (theoretical part) + 55% 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 course will not be considered approved although the final grade, CF, according to the average weighted is equal to or greater than 5. So, in that case, if:

CF is \geq 4, the final grade will be: Suspense, 4.

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

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

The methodology followed in this course is oriented towards the achievement of the learning objectives. A wide range of teaching and learning tasks are implemented, such as lectures, practice sessions, fieldwork and seminars.

4.2. Learning tasks

This course is organized as follows:

- **Lectures** (30 hours). 2 weekly hours. Teacher theoretical and practical notes and information are available in Moodle, as well as in the photocopy room, designed for better understanding of the topics.
- **Practice sessions** (26 hours). 2 weekly hours.
 - **Seminar** of a topic related to botany. 10 minutes (during laboratory practices).
- **Fieldwork** (4 hours) in which, teachers will present relevant morphological traits of the most representative botanical families.
 - **Herbaria** (17 hours). Autonomous collection and identification of flora. Floras and other materials available in the laboratory.
- **Tutorials**. Teacher office-hours in order to answer theory and practice questions. Availability and flexibility of teachers schedule to solve questions of any kind related to the subject.

4.3. Syllabus

This course will address the following topics:

Lectures

- **Topic 1. Introduction**
Plant kingdom. Plant characteristics. Botany working fields.
- **Topic 2. Anatomy**
Morphological levels. Histology: Meristematic, parenchymatic, vascular and dermic tissues. Anatomy and morphology: stem, leaf, root, flower and fruit.
- **Topic 3. Reproduction**
Sexual reproduction. Seed and fruit dissemination. Vegetative reproduction.
- **Topic 4. Plant systematic**
Basic systematic knowledge. Bryophytes and tracheophytes.

Practice sessions

- Plant systematic and dichotomy guides (1 session: 2 hours)
- Ferns morphology and identification (1 session: 2 hours)
- Gymnosperm morphology and identification (2 sessions: 4 hours)

- Angiosperms morphology and identification (8 sessions: 16 hours)
- Field trip (4 hours)
- Practice Exam (1 session: 2 hours)

4.4. Course planning and calendar

Further information concerning the timetable, classroom, office hours, assessment dates and other details regarding this course will be provided on the first day of class or please refer to the University of Zaragoza and Escuela Politécnica Superior (EPS) website and Moodle.

4.5. Bibliography and recommended resources

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- BB** Flora ibérica : plantas vasculares de la Península Ibérica e Islas Baleares. Vol. 16 (1), Compositae (partim) / Coordinador general de la obra S. Castroviejo ; editores, J.A. Devesa, A. Quintanar y M. Á. García. Madrid : Real Jardín Botánico, CSIC, 2014
- BB** Flora ibérica : plantas vasculares de la Península Ibérica e Islas Baleares. Vol. 17, Butomaceae-Juncaceae / coordinador general de la obra S. Castroviejo ; editores, S. Talavera... [et al.]. Madrid : Real Jardín Botánico, CSIC, 2010
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LISTADO DE URLs:

Real Jardín Botánico (CSIC)_Flora ibérica
[\[http://www.floraiberica.es/\]](http://www.floraiberica.es/)

The updated recommended bibliography can be consulted in: <http://psfunizar10.unizar.es/br13/egAsignaturas.php?id=10994>