Vegetation Analysis

Code: 100831
ECTS Credits: 6

2024/2025

Degree	Type	Year
2500251 Environmental Biology	OB	3

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Teachers

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Teaching groups languages

You can view this information at the end of this document.

Prerequisites

Despite the lack of official prerequisites, before taking this course it is very convenient to have passed Natural Environment Propection, Botany, Ecology, Analysis of Environmental Mapping, Physical Environment and Biostatistics.

Objectives and Contextualisation

The objective is to provide basic knowledge and methodological tools that allow students to recognizing the main vegetal formations of our geographical region, as well as interpreting the main processes that determine their structure and dynamics both locally and at regional level, and across different time scales.

Competences

- Act with ethical responsibility and respect for fundamental rights and duties, diversity and democratic values.
- Describe, analyse and assess the natural environment.
- Exercise leadership.
- Identify and interpret the diversity of species in the environment.
- Interpret and design the landscape.
- Manage information

- Obtain information, design experiments and interpret results.
- Sample, characterise and manipulate populations and communities.
- Take account of social, economic and environmental impacts when operating within one's own area of knowledge.
- Take sex- or gender-based inequalities into consideration when operating within one's own area of knowledge.
- Take the initiative and demonstrate an entrepreneurial spirit.

Learning Outcomes

1. Act with ethical responsibility and respect for fundamental rights and duties, diversity and democratic values.
2. Actuar en l'àmbit de coneixement propi avaluant les desigualtats per raó de sexe/gènere.
3. Analyse the components of the natural environment and human influence on the configuration of the different landscapes.
4. Describe the components of the physical environment, identify the natural factors that determine the types of communities present and analyse the types of vegetation.
5. Exercise leadership.
6. Manage information
7. Obtain information, design experiments and interpret results.
8. Perform inventories of organisms, sample populations and identify communities.
9. Recognise in the field the principal plants, animals and organisms that are characteristic to the communities in our environment.
10. Take account of social, economic and environmental impacts when operating within one's own area of knowledge.
11. Take the initiative and demonstrate an entrepreneurial spirit.

Content

Part I. Regional analysis of vegetation

1. Basic concepts of vegetation biogeography

2. Dynamics of vegetation

3. Characteristics of the physical environment and the vegetation in the Iberian Peninsula

4. The vegetation of the Mediterranean basin

5. The vegetation of Europe

6. The great Biomes

8. Indicators of the evolution of the landscape

9. Climate dynamics and history of vegetation

Part II. Patterns and local dynamics of vegetation

10. Biological typologies of plants

11. Plant functional traits and functional diversity

12. Species composition: quantitative methods of vegetation analysis

13. Spatial distribution of communities: analysis of gradients

14. Species pool, dispersion and establishment

15. Plant community assembly and species coexistence

16. Plant succession and disturbance regime

17. Vegetation dynamics models

Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Fieldtrip	16	0.64	1, 2, 10, 3, 4, 9
Master classes	28	1.12	1, 2, 10, 3, 4, 8
Practical Classroom sessions	10	0.4	1, 2, 10, 5, 6, 9
Seminar	1	0.04	5, 6, 7, 8
Type: Supervised			
Field work	20	0.8	5, 7, 11, 8, 9
Type: Autonomous			
Reports writting	31	1.24	1, 2, 10, 4, 5, 6, 11, 9
Study	40	1.6	3, 4, 6, 7

The learning activities used in the course will be the following:

1. Theoretical block

The theoretical part will be done mainly by master classes, recognizing that the theoretical and practical blocks are very integrated with each other.

Master classes:

Theoretical knowledge will be transmitted, mainly, in the classroom through master classes, with ICT support. Apart from the selected bibliography, students will have a diversified material for the follow-up of the classes.

2. Practical block

This block consists of two works (one for each part of the program) that students will do in teams and autonomously, according to the instructions of teachers. In addition to their work they will have participative activities that will help them carry them out: field trips, classroom practical, seminar and theoretical sessions addressed to support the elaboration of works.

Field trip:

A two-day field trip will be done. That will allow students to know some of the main vegetation formations of Catalonia; this will the basis for one of the two works of the program. Therefore, one of the two practical works will be based on this field trop and the evaluation of this work will also include the assistance and the activities carried out at the field trip.

Tutored fieldwork:

The students will carry out an autonomous and supervised fieldwork. In this work they will have to carry out several field surveys that will be exposed in classroom practical sessions, with mandatory attendance, including the design of the study, the results and their discussion.

3. Tutorials:

The schedule of the individualized tutorials will be specified by the teachers through virtual campus and by electronic means. There may also be group tutorials in the classroom with the aim of guiding the development of the works of the practical block.

The training activities include in a comprehensive way the search for innovative answers to the needs and demands of society, the social, economic and environmental impact of scientific knowledge, ethical values and respect for diversity, democratic values and fundamental rights and duties, and the assessment of gender inequalities.

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.

Assessment

Continous Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
First Part Exam	30	2	0.08	3, 4
First Part Work	20	0	0	1, 2, 10, 5, 6, 9
Second Part Exam	25	2	0.08	3, 4, 8
Second Part Work	25	0	0	1, 2, 10, 6, 7, 11, 8

The evaluation will be based on activities corresponding to different types: exams, oral presentations in public, written reports, written tests in the classroom. The program is structured in two parts that comprise approximately half of the total. In each part there is a theoretical block and a practical one, as detailed below:

Theoretical block (55% of the grade)

The theoretical block is evaluated with two activities that correspond to two partial examinations worth each one 30% (first partial) and 25% (second partial) of the total note; they correspond to the two parts of the program.

There is a mandatory final recovery exam for those students who have not obtained at least a 5 in each of the two partial, midterm exams. These partial, midterms exams are eliminatory, so if a student obtains a grade greater than or equal to 5, he or she is considered to have passed the midterm subject. For those students

who have failed one of the two midterms (grade less than 5), only the failed midterm will be evaluated in the final recovery exam. For those students who failed both midterms exams, the final exam will include both midterms. The final recovery exam will not serve to raise the grade of midterm exams.

Once the final recovery exam has been taken (if applicable), students must obtain at least a 4.5 in the subject corresponding to each midterm partial in order to pass this theoretical block. Otherwise, the overall subject will not be passed.

Practical block (45% of the grade)

The practical block is structured in two works, which represent 20% (first part) and 25% (second part) of the total grade. These works comprise evaluable activities that include written reports (including support with ICTs), public oral presentations and group discussions. They may also include individual written tests on the activity carried out by each student.

In order to be able to pass this block, a grade of at least 4.5 of each one of the works must be obtained.

The recovery system envisages a written test of recovery of the examinations of thefirst and second part, as well as a portfolio of practical work, particularly in the second part, where the different sequential deliveries, resulting from the work carried out, oral presentations and group discussions, allow a recovery of the activities.

Students will obtain the "Non-Valuable" qualification when the assessment activities carried out have a weighting percentage of less than 67 in the total grade.

Student's assessment may experience some modifications depending on the restrictions to face-to-face activities enforced by health authorities.

Single evaluation system does not apply here.

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ONLINE RESOURCES

ANTHOS (http://www.anthos.es/)

Banc de dades de biodiversitat de Catalunya (http://biodiver.bio.ub.es/biocat/)

Catalonia Checklist Vascular Plants 2021 (https://www.researchgate.net/publication/358150135_Catalonia_Checklist_Vascular_Plants_2021_Saez_Aymeri

Exocat (Sistema d'Informació de les Espècies Exòtiques de Catalunya) (http://exocat.creaf.cat/)

Flora Ibèrica (http://www.floraiberica.es/)

GBIF | Global Biodiversity Information Facility (https://www.gbif.org/es/)

Additional web links for different parts of the program will also be provided.

Software

Miramon 8.2, R-Studio, PAST

Language list

Name	Group	Language	Semester	Turn
(PAUL) Classroom practices	231	Catalan	second semester	morning-mixed
(PAUL) Classroom practices	232	Catalan	second semester	morning-mixed
(PCAM) Field practices	231	Catalan	second semester	morning-mixed
(PCAM) Field practices	232	Catalan	second semester	morning-mixed
(PCAM) Field practices	233	Catalan	second semester	morning-mixed
(TE) Theory	23	Catalan	second semester	morning-mixed