

**Survey of Natural Environment**

Code: 100829  
ECTS Credits: 6

Degree	Type	Year	Semester
2500251 Environmental Biology	OB	1	2

**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

**Teachers**

Maite Carrasson Lopez de Letona  
Sara Dallares Villar  
Moisés Guardiola Bufi  
Sergi Pla Rabes  
Juan Goma Martinez  
Francesc Xavier Munill Bernardich  
Francesc Muñoz Muñoz  
Anna Soler Membrives

**Prerequisites**

There are no prerequisites to follow the course successfully.

**Objectives and Contextualisation**

The goal of this subject is to be an introduction to the study of biodiversity through the direct exploration of the natural environment. So, the subject includes the learning of different techniques applied in the location and identification of organisms in their own environment. It is therefore a subject with a great dedication to field work through the prospection of different natural environments.

It allow a general vision to introduce students s in different sampling techniques from different groups of organisms (the knowledge of which will be deepened in other subjects) in different environments, as well as in the quantification of this diversity

They also include to work different methodological and transversal skills that will be useful for the subjects of the rest of the studies of Environmental Biology.

The most specific objectives of the subject are the following:

Know how to measure the diversity and richness of species and their spatial and temporal variability.

Learn that is necessary identify the different habitats previous to prospect a zone.

Recognize how environmental factors influence the diversity of species.

Know how to measure the spatial distribution of organisms.

Understand the concept of functional group.

Learn about the main techniques of terrestrial invertebrate sampling and the advantages and disadvantages of each one.

Know the main techniques of marine fauna sampling and the advantages and disadvantages of each one.

Recognize the main groups of terrestrial invertebrates and for insects recognize the main orders.

Recognize the main groups of marine animals in the Mediterranean coastline.

Recognize the main families of plants.

Recognize some of the most abundant seaweed and marine plants on the Mediterranean coast.

Recognize the most abundant trees and shrubs of the Mediterranean and mountain forests.

Learn how to correctly collect (preservation, labeling, etc.) the different organisms

## Competences

- Act with ethical responsibility and respect for fundamental rights and duties, diversity and democratic values.
- Adapt to new situations.
- Communicate efficiently, orally and in writing.
- Describe, analyse and assess the natural environment.
- Exercise leadership.
- Identify and interpret the diversity of species in the environment.
- Introduce changes in the methods and processes of the field of knowledge to provide innovative responses to the needs and demands of society.
- 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. Adapt to new situations.
4. Communicate efficiently, orally and in writing.
5. Describe the components of the physical environment, identify the natural factors that determine the types of communities present and analyse the types of vegetation.
6. Exercise leadership.
7. Introduce changes in the methods and processes of the field of knowledge to provide innovative responses to the needs and demands of society.
8. Obtain information, design experiments and interpret results.
9. Perform inventories of organisms, sample populations and identify communities.
10. Recognise in the field the principal plants, animals and organisms that are characteristic to the communities in our environment.
11. Take account of social, economic and environmental impacts when operating within one's own area of knowledge.
12. Take the initiative and demonstrate an entrepreneurial spirit.

## Content

Concept of diversity, biodiversity and species richness and its quantification

Main plants, algae and fungi sampling techniques

Main various faunistic groups sampling techniques

Methodological bases for the organisms identification.

Methodological bases for the conservation and cataloging of organisms.

Basic statistical treatments of diversity censuses

Spatial and temporal variability effects of on biological diversity.

Effect of abiotic factors on species diversity at local and regional scale

Effect of the sampling effort on diversity measures: sampling design, calculation and interpretation of species accumulation curves

## Methodology

This subject is organized with a totally practical character and is structured around two field trip with the following activities structure

1. Introductory session
- 2 Field trip (which includes evaluation activities)
3. Analysis of samples obtained in field
4. Data analysis
5. Evaluation activities

In addition there is a final evaluation that involves learning from both field trips

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.

## Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Data analysis of field trip 1	6	0.24	4, 5, 6, 12, 9
Data analysis of field trip 2	4	0.16	4, 5, 9
Discussion of field trip 1 data	4	0.16	4, 5, 6, 12, 9
Field trip 1	32	1.28	1, 2, 11, 3, 5, 6, 7, 12, 9, 10
Field trip 2	24	0.96	1, 2, 11, 3, 5, 6, 7, 12, 9, 10
Laboratoy of field trip 1	8	0.32	10
Laboratoy of field trip 2	10	0.4	9, 10
Oral presentation discussion	4	0.16	3, 4, 7, 12
Preparation field trip 2	4	0.16	4, 5, 9
Preparation filed trip 1	4	0.16	5, 9
Preparation of the oral presentation	3	0.12	4
Type: Autonomous			

Study	15	0.6	10
Team working	27	1.08	3, 4, 5, 6, 12

## Assessment

Attendance at all field trips, laboratory and computer sessions are mandatory for overcome the subject.

First trip paper (30% of the final mark)

It will be done for each team of 4-5 people who have worked together in field and consist of a scientific article with the data obtained in the field work.

A first version of the work is corrected by the teacher and scored over 10. The results of the correction with some suggestions for improvement is communicated to the Students, Then the student can accept this first mark or they may voluntarily submit a second version to improve the mark The mark of the second version, which can not exceed three points of the first version, is the definitive mark

A final "visum" test (20% of the final mark)

The student finishes the subject with a list of organisms that he / she must know how to identify from "visu" At the end of the semester there will be a test written where it is necessary to recognize, from images or samples, some of these organisms.

Oral presentation related to the field trip 2 (25% of the final mark)

It will be necessary to make a small oral presentation of half an hour (including questions) for teams of 4 students who have worked together in the field highlighting the biodiversity observed in the studied area

Learning portfolio (25% of the note)

It consists of a series of short works made for the students during the field trip, laboratory sessions or data analysis sessions They will be corrected during the course. In some cases, it will be a question about some data obtained in field work or short evaluation tests carried out in the laboratory. It is included also the evaluation of the field notebook.

Student observation guide (add a value between -2 and 1 to the note)

The aim of this observation guide is to identify if the students reach attitudinal competences (CT14, CT17, CT19 and CT20 in section 5) through the observation by the different teachers. The maximum negative grade will also be applied, depending on the criteria of teachers, in those cases of non-compliance with the basic rules of coexistence in field trips.

Minimum note to pass the subject

To pass the course, it is necessary to obtain a global average mark equal to or higher than 4,9 and a mark equal to or higher than 3.5 in paper, final visum, oral presentation and learning portfolio.

The students will obtain the grade of "Not Evaluable" when the evaluation activities carried out have a weight of less than 67% in the final grade

"The students will obtain the Not Evaluable" rating when your absence is greater than 20% of the scheduled sessions

## Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Final "visum"	20	1	0.04	9, 10

Learning portfolio	25	0	0	5, 7, 9, 10
Oral presentation	25	3	0.12	3, 4, 5, 9, 10
Paper correction	30	1	0.04	11, 4, 5, 6, 7, 8, 12, 9
Student observation guide	between -2 and +1 adding to the final note	0	0	1, 2, 11, 3, 6, 12

## Bibliography

### References

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Bergbauer M, Humberg B (2001) Flora y fauna submarina del mar Mediterráneo. Omega, *Barcelona*.

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Liistosella-Vidal, J, Sánchez-Cuixart (2020) Guia il.lustrada per a conèixer arbusts i les lianes. Publicacions i edicions Universitat de *Barcelona*

López González G (2001) Guía de los árboles y arbustos de la Península Ibérica y Baleares. Ediciones Mundi-Prensa.

Masalles R M & al. (eds.) (1988) Plantes superiors. Història Natural dels Països Catalans, vol. 6. Enciclopèdia Catalana. *Barcelona*.

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Riedl R (2000) Fauna y flora del mar Mediterráneo. Omega, Barcelona.

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web links:

Anthos. Sistema de información sobre las plantas de España. Fundación Biodiversidad y Real Jardín Botánico de Madrid (CSIC): <http://www.anthos.es>

Atles Climàtic Digital de la Península Ibèrica: <http://www.opengis.uab.es/WMS/iberia/index.htm>

Atles Climàtic Digital de Catalunya: <http://www.opengis.uab.es/WMS/acdc/index.htm>

Banc de dades de Biodiversitat de Catalunya: <http://biodiver.bio.ub.es/biocat/homepage.html>

Estimates: Biodiversity estimation. <http://viceroy.eeb.uconn.edu/EstimateS>

Flora Catalana: <http://floracatalana.net>

Flora Iberica: <http://www.floraiberica.org/>

Virtual Herbarium of the western Mediterranean : <http://herbarivirtual.uib.es/>

Herbari virtual de la UAB: <http://blogs.uab.cat/herbari/>

## **Software**

R-Studio, Microsoft Excel and EstimateS