

Evolution and Analysis of Plant Landscape

Code: 42917
ECTS Credits: 6

Degree	Type	Year	Semester
4313774 Terrestrial Ecology and Biodiversity Management	OT	0	1

Contact

Name: Moisès Guardiola Buff

Email: moises.guardiola@uab.cat

Use of Languages

Principal working language: catalan (cat)

Teachers

Ramon Perez Obiol

Cristina Roquet Ruíz

Prerequisites

Notions on the diversity of Iberian vegetation communities. Basic concepts on biogeography, climatology and geography of the Iberian Peninsula.

Objectives and Contextualisation

This module provides students with a wide spectrum of contents and tools with an approach that transcends the geographic and temporal scale, not necessarily centred on those ecosystems and landscapes that are more familiar to us. It is for this last reason that beyond the obligatory vision from the present, this module focuses on the historical processes that have taken place in previous times and they help to interpret the reality of landscapes, ecosystems and current vegetal communities.

In addition to this dynamic view, we provide a series of tools for spatial analysis (gradient analysis and cartographic modelling) of both vegetation and climatic, edaphic, historic, topologic and anthropic variables that influence its distribution, composition and structure. An example of this is the distribution patterns of plant species and the suitability of potential habitats that enable quantitative characterization of plant ecosystems and obtain a perception of what their evolution may be in the face of the effects of global change. We also provide information about multiple facets of biodiversity (taxonomic, functional and evolutive) and the importance of how to integrate them in the biodiversity management.

Finally, this module will provide tools to interpret and value the diversity of plant communities and landscape and show students specific cases of their application. For this purpose, emphasis is placed on presentations by experts, technicians and managers directly involved in the design and management of conservation actions and management of spaces or conservation policies.

Competences

- Communicate and justify conclusions clearly and unambiguously to both specialist and non-specialist audiences.

- Deal with the theory and practice of sustainable management and use of biodiversity and of terrestrial and aquatic biotic resources.
- Evaluate and analyse the diversity of animal, plant and fungal organisms from an evolutionary and functional perspective, and their interactions with the medium.
- Sample, handle, identify and characterise animal, plant and fungal samples, by tissues, individuals, communities, populations and landscapes.
- Understand and apply the most cutting-edge and influential theories in terrestrial ecology and conservation of biodiversity, and assess their importance for mitigating the main environmental problems caused by human activity.
- Use acquired knowledge as a basis for originality in the application of ideas, often in a research context.

Learning Outcomes

1. Assess the biodiversity of flora and vegetation in a particular area and the main factors that threaten its conservation
2. Describe some of the main current advances and controversies in the study of the plant landscape.
3. Evaluate and analyse the processes and factors that shape the plant landscape.
4. Identify and catalogue vegetation and landscape diversity from specific cases.
5. Interpret and evaluate the principles and general applications of the sciences that study the plant landscape and its dynamics.
6. Interpret and evaluate the principles of conservation biology applied to specific fauna.
7. Present the results of a research project in poster format.
8. Propose and evaluate management models for the conservation of plant communities and protected areas.

Content

Analysis and habitat conservation

Habitat definition. Applications.

Classification systems

Protection and threats

Habitats of the north-eastern Iberian Peninsula

Habitat cartography

Management and conservation

Species and habitat distribution models.

Phylogenetic and functional diversity

Evolutionary origins of the Mediterranean flora

Indicators of landscape changes

Case studies

Seminaries and conferences

Methodology

1. Presential activities

1.1. Directed Activities

In the directed activities the expository method will be used accompanied by multimedia materials that reinforce the understanding. Depending on the teacher, the pre-class work will also be encouraged to develop a participatory session in the classroom where there will be room for discussion of targeted texts and seminars.

1.2. Supervised activities

The follow-up of the preparation of the different works and of the field practices will be done through specifically programmed discussion sessions.

2. Autonomous and supervised activities

Students will do tutorial work both theoretical and practical, some individually and others in group. The work will be based on the use and application of the methodologies treated in the module and other modules. These will be reflected in a document that the students will present and defend in a final session.

Distribution of activities:

Literature reading relevant to the class and seminar agenda as well as the final report for the module

Elaboration of a written report

Preparation of an oral dissertation related to the written report

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			
Computer sessions	6	0.24	6, 3, 2, 4, 5, 8
Field practices	18	0.72	6, 3, 4, 5, 1
Seminars	5	0.2	6, 3, 4, 7, 8, 1
Theory sessions	11	0.44	3, 2, 4, 5
Tutorial sessions. Report and field practices.	2	0.08	7, 8
Type: Supervised			
Report and Dissertation	35	1.4	6, 2, 7, 8
Type: Autonomous			
References search. Report writing.	65	2.6	3, 2, 4, 7, 8, 1

Assessment

The evaluation of the module will be based on two items:

- i) Test type test at the end of the theoretical sessions
- ii) Written and oral defence of a subject related to the module, groups of 2-3 students

The evaluation of the written report and dissertation will be assessed by:

- Use of appropriate information and tools, quality, structuring and correction of exposure
- Ability to synthesize and present information in memory and oral presentation
- Clarity, conciseness and rigor in written and oral expression
- Quality of documentary sources used
- Adequacy to space and time set
- Applicability

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Short tests	40%	2	0.08	6, 3, 4, 5
Written report and dissertation	60%	6	0.24	6, 3, 2, 4, 5, 7, 8, 1

Bibliography

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Software

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