

Degree	Type	Year
Terrestrial Ecology and Biodiversity Management	OT	0

Contact

Name: Moisès Guardiola Bufí

Email: moises.guardiola@uab.cat

Teachers

Pau Carnicero Campmany

Teaching groups languages

You can view this information at the [end](#) of this document.

Prerequisites

Although it is not essential, it is advisable to have some knowledge of 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

Activities and Methodology

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

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.

Assessment

Continuous 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

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

Single evaluation: If a student opts for the single evaluation, he/she will take a longer exam that will be worth 100% of the grade and will include four types of questions:

- Short-answer or test-type questions: aimed at assessing whether the key concepts have been achieved.
- Problems or exercises: intended to evaluate the achievement of theoretical and practical objectives.
- Questions that involve a complex answer: relating the management and conservation of habitats with models of evolutionary biogeography, modelling and palaeobotany.
- Cases: it will be assessed if the student is able to describe, model and propose management and conservation measures for vegetation communities.

Bibliography

Blanco, E., Casado, M.A., Costa, M., Escribano, R., Garcia, M., Genova, M., Gomez, A., Gomez, F., Moreno, J.C., Morla, J.C., Regato, P. & Sainz, H. 1997. Los bosques ibéricos. Edit. Planeta. Barcelona.

Braun-Blanquet, J. 1979. Fitosociología. Bases para el estudio de las comunidades vegetales. Blume. Madrid.

Burrough, P. A. & McDonnell, R. A. 1998. Principles of geographical information system. Oxford University Press. Oxford.

Carreras, J. & Ferré A. 2013. Avaluació del grau d'amenaça i de l'interès de conservació dels hàbitats de Catalunya. Departament de Territori i Sostenibilitat de la Generalitat de Catalunya. Barcelona. 130 pp. [<http://hdl.handle.net/2445/53346>]

Carreras, J. & Ferré, A. (eds.). 2014. Cartografia dels hàbitats a Catalunya. Versió 2. Manual d'interpretació. Departament de Territori i Sostenibilitat, Generalitat de Catalunya. Barcelona, 360 pp. [http://atzavara.bio.ub.edu/geoveg/docs/Manual_v2_2014.pdf]

Carreras, J., Ferré, A. & Vigo, J. (eds.). 2015. Manual del Hàbitats de Catalunya. 8 volums. Segona edició. Departament de Territori i Sostenibilitat. Generalitat de Catalunya. [<http://www.ub.edu/geoveg/cat/ManualCORINE.php>]

Conesa, J. A. 1997. Tipologia de la vegetació: anàlisi i caracterització. Servei de Publicacions Universitat de Lleida.

Cox, C.B., Ladle, R., Moore, P.D. 2020. Biogeography : an ecological and evolutionary approach. 10th ed. Blackwell Scientific.

Folch, R. 1986. La vegetació dels Països Catalans. Ketres Ed. Barcelona. [<https://blogs.iec.cat/ichn/la-vegetacio-dels-paisos-catalans>]

Folch, R., Franquesa, T. & Camarasa, J.M. 1984. Vegetació. Història Natural dels Països Catalans. vol 7. Ed. Enciclopèdia Catalana. Barcelona.

Franklin, J. 2010. Mapping Species Distributions. Spatial Inference and Prediction. Cambridge University Press. Isbn: 9780521700023.

Gubbay, S. et al. 2016. European Red List of Habitats: Part 1. Marine habitats. Publications Office of the European Union. Luxembourg. 48 p. [https://ec.europa.eu/environment/nature/knowledge/redlist_en.htm]

Janssen, J.A.M. et al. 2016. European Red List of Habitats: Part 2. Terrestrial and freshwater habitats. Publications Office of the European Union. Luxembourg. 40 p. [https://ec.europa.eu/environment/nature/knowledge/redlist_en.htm]

Loidi, J. (ed.). 2017. The Vegetation of the Iberian Peninsula. Vol 1. Plant and Vegetation series, 12. Springer. 676 p.

Loidi, J. (ed.). 2017. The Vegetation of the Iberian Peninsula. Vol 2. Plant and Vegetation series, 13. Springer. 640 p.

Lomolino, M.V., Riddle, B.R., Whittaker, R.J. 2016. Biogeography. Fifth Edition. Oxford University Press.

Masalles, R.M., Carreras, J., Farràs, A. & Ninot, J.M. 1988. Plantes superiors. Història Natural dels Països Catalans. vol. 6. Enciclopèdia Catalana. Barcelona.

MAPAMA. 2017. Resolución de 17 de febrero de 2017, de la Secretaría de Estado de Medio Ambiente, por la que se establecen tres listas patrón: la de las especies terrestres, la de las especies marinas y la de los hábitats terrestres, presentes en España. BOE, 55, 6 de marzo de 2017, páginas 16648 a 16649.

Ninot, J.M.; Carrillo, E.; Font, X.; Carreras, J.; Ferré, A.; Masalles, R.M.; Soriano, I.; Vigo, J. 2007 Altitude zonation in the Pyrenees. A geobotanic interpretation. Phytocoenologia 37: 371-398.

Pollock, L., Thuiller, W., Jetz, W. 2017. Large conservation gains possible for global biodiversity facets. Nature 546: 141-144

Terradas, J. 2001. Ecología de la vegetación. Ed. Omega. Barcelona.

VV.AA., 2009. Bases ecológicas preliminares para la conservación de los tipos de hábitat de interés comunitario en España. Madrid: Ministerio de Medio Ambiente, y Medio Rural y Marino.
[https://www.mapama.gob.es/es/biodiversidad/temas/espacios-protegidos/red-natura-2000/rn_tip_hab_esp_base]

Vigo, J. 2005. Les comunitats vegetals. Descripció i classificació. Publ. Universitat de Barcelona.

Walter H. 1985. Vegetation of the Earth, Berlin, Springer-Verlag.

Software

QField.org. 2025. QField for QGIS. The QField Project/OPENGIS.ch. www.qfield.org

QGIS.org. 2025. QGIS Geographic Information System. QGIS Association. www.qgis.org

R Core Team. 2025. R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. www.r-project.org

Groups and Languages

Please note that this information is provisional until 30 November 2025. You can check it through this [link](#). To consult the language you will need to enter the CODE of the subject.

Name	Group	Language	Semester	Turn
(PCAMm) Field practices (master)	1	Catalan	first semester	morning-mixed
(PLABm) Practical laboratories (master)	1	Catalan	first semester	morning-mixed
(SEMm) Seminars (master)	1	Catalan	first semester	morning-mixed
(TEm) Theory (master)	1	Catalan/Spanish	first semester	morning-mixed