Advanced Content in Terrestrial Ecology

Code: 42916
ECTS Credits: 6

2025/2026

Degree	Type	Year
Terrestrial Ecology and Biodiversity Management	OT	0

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Teachers

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Teaching groups languages

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

Prerequisites

The module does not have specific requirements.

Objectives and Contextualisation

The objective of this module is to provide students with an up-to-date understanding of the main foundations and approaches used in terrestrial ecology, from established classical concepts to the most recent advances. In addition to the specific content of terrestrial ecology, general aspects of the acquisition and limits of scientific knowledge through research will be addressed, as well as cross-cutting aspects such as the need for open and reproducible science, the ethics of scientific research, and scientific publishing. In particular, the process of communicating the results of scientific research through publication will be addressed, analyzing the structure of scientific texts, primarily articles, and the writing and review process.

Competences

- Communicate, give presentations and write articles in English.
- Critically assess the strong and weak points of a study. Organise, plan and manage projects related to the area of study.
- Evaluate and analyse the diversity of animal, plant and fungal organisms from an evolutionary and functional perspective, and their interactions with the medium.

- Seek out information in the scientific literature using appropriate channels, and use this information to formulate and contextualise a project.
- 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. Analyse technical and scientific documents written in English and understand presentations in English.
2. Describe the main processes that determine organisms' interactions with each other and with the medium.
3. Discuss ideas, using scientific evidence and arguments.
4. Display the (constructively) critical spirit that is essential to science.
5. Identify some of the main advances and controversies in current ecological science.
6. Integrate evolutionary factors in the interpretation of current ecological patterns.
7. Interpret and evaluate the principles and general applications of terrestrial ecology.
8. Know what distinguishes science from other forms of knowledge.
9. Situate ecology in the context of science.
10. Use the main tools for searching in specialist literature.

Content

Cross-cutting contents:

- Science as a source of knowledge
- Scientific communication and publishing
- Open and reproducible science
- Ethics of research and research assessment

Specific contents:

- Functional biogeography
- Biosphere - atmosphere interacions
- Ecosystem resilience under global change
- The biodiversity crisis
- Macroecology
- Paleoecology
- Evolutionary ecology
- Ecological interaction networks
- Functional diversity

Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Seminars	36	1.44	1, 8, 3, 4, 2, 5, 6, 7, 10, 9
Type: Supervised			
Tutorials	4	0.16	1, 8, 3, 4, 2, 5, 6, 7, 10, 9

Type: Autonomous			
Personal work reading and analysis of texts	67.5	2.7	1, 4, 2, 5, 6, 7, 10, 9
Preparation of reports, presentations and materials	40	1.6	1, 4, 2, 5, 6, 7, 10, 9

The module consists in reading and discussing a selection of texts, mainly scientific articles (in English). Based on these publications, the main themes of terrestrial ecology are presented, as well as the process of acquisition and transmission of scientific knowledge. Therefore, the corpus of ecological knowledge will be acquired through the contextualization of the specific problems and situations described in the papers. This approach illustrates reallistically the interrelation between different concepts and knowledge items and reproduces he way in which the appearance and consolidation of knowledge in this discipline occurs.

Therefore the methodology of the module is based on the reading, analysis and discussion of scientific texts of ecology, carrying out different activities that include text reading, writing of essays, preparation and oral and public presentations, resolution of exercises, in addition to more theoretical lectures and tutorials.

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
Attendance and active participation in classes and seminars	20%	1	0.04	1, 8, 3, 4, 2, 5, 6, 7, 10, 9
Final module work	30%	0.5	0.02	1, 8, 3, 4, 2, 5, 6, 7, 10, 9
Folder with the documents and materials presented	50%	1	0.04	1, 8, 3, 4, 2, 5, 6, 7, 10, 9

- Attendance and participation in class (20%): the involvement, participation and rigor of the student will be evaluated.

- Student folder with documents and materials generated as a result of module activities, including those carried out in class and at home (50%).

- Final written comment of an article following the format of a publication (30%)

A minimum attendance of 80% is required in the sessions scheduled by each lecturer.

For this subject, the use of Artificial Intelligence (AI) technologies is permitted exclusively in support tasks, such as bibliographic or information searches, text correction or translations, or others at the discretion of the teaching staff. The student must clearly identify which parts have been generated with this technology, specify the tools used and include a critical reflection on how these have influenced the process and the final result of the activity. The lack of transparency in the use of AI in this evaluable activity will be considered a lack of academic honesty and may lead to a partial or total penalty in the grade of the activity, or greater sanctions in serious cases.

Bibliography

General reference text:

Levin, S.A. (2009) The Princeton Guide to Ecology. Princeton University Press.

The specific list of texts (papers) that will be the basis of the module will be provided before the beginning of the classes.

Software

Not applicable

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
(SEMm) Seminars (master)	1	Spanish	first semester	morning-mixed