UAB

Universitat Autònoma
de Barcelona

Forest Ecology

Code: 100819
ECTS Credits: 6

Degree	Type	Year	Semester
2500251 Environmental Biology	OT	4	0

The proposed teaching and assessment methodology that appear in the guide may be subject to changes as a result of the restrictions to face-to-face class attendance imposed by the health authorities.

Contact

Name: Jordi Martínez Vilalta

Email: Jordi.Martinez.Vilalta@uab.cat

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

Sandra Saura Mas

Prerequisites

Before enroling into the Forest Ecology course it is desirable that students have attained the learning skills corresponding to the folowing courses of their degree: Mathematics, Biostatistics, Natural Environment Prospecting, Botamy, Ecology and Vegetation Analysis.

Objectives and Contextualisation

The objective of this course is to prodice the knowledge and methodical skills required for (1) learn the reality of forests, particularly in the Mediterranean region; (2) gain basic understanding on their functioning and dynamics; and (3) acquire notions on the main principles and tools used in forest management and logging practices. The course will be conducted respecting the diversity and plurality of ideas, people and situations. The student will need to use some of the mathematical and statistical toolls acquired in previous courses of the degree.

Competences

- Develop analysis and synthesis skills.
- Identify and interpret the diversity of species in the environment.
- Identify and use bioindicators.
- Make decisions.
- Perform studies on animal and plant production and improvement.
- Solve problems.

Learning Outcomes

1. Develop analysis and synthesis skills.

2. Draw up plans for the sustainable management of woodland.
3. Make decisions.
4. Manage the different variables for describing a forest system and its degree of conservation.
5. Solve problems.
6. Use indices to determine the state of conservation of an ecosystem.

Content

The syllabus consists of 13 topics, structured in four blocs:

Bloc 1. What are forests and how do we study them?

1. From the tree to the forest.

2. The global importance of forests.

3. Describing a forest.

Bloc 2. Forest functioning

4. ¿How do trees work?

5. Primary production and carbon stocks in forests.

6. Water and nutrient fluxes in forests.

Bloc 3. Forest dynamics

7. Forets in time.

8. Disturbances and their effects.

9. Forests and global change.

10. Modelling forests.

Bloc 4. Forest multifuntionality. Ecosystem services

11. Forest management and ecosystem services.

12. Logging and forestry.

13. Managing Mediterranean forests.

*Unless the requirements enforced by the health authorities demand a prioritization or reduction of these contents.

Methodology

Master classes

Theoretical classes consist of lectures. The student will have complementary materials that will facilitate following the class. This material will be previously available in the corresponding moodle classroom.

Classroom practicals

Practical in the classroom in which we will carry out an activity related to the decision making in the management and exploitation of forests. We will work in groups and special emphasis will be placed on the applied aspects corresponding to block 4.

Computer practices

During these practical classes we will learn to use forest databases and models related to forest functioning and dynamics.

Field practices

We will have two field visits to practice the materials and methods of forest inventories and studies. One of the field visits will be related with the APS project / case study.

Resolution of an APS project / case study

This activity consists in presenting a proposal of management of a forest area by the students, in groups of 3 or 4 people. Based on the knowledge obtained during the course, the groups will be able to analyze the forest, its potential uses and ecosystem services, and finally, have the capacity to develop a proposal for management . To guide the work there will be several sessions (in theory hours) where the teachers will supervise the process.
*The proposed teaching methodology may experience some modifications depending on the restrictions to face-to-face activities enforced by health authorities.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Computer practicals	5	0.2	1, 4, 3, 5
Field practicals	16	0.64	2, 4, 3
Master classess	28	1.12	1, 2, 4, 6
Practicals in the classroom	3	0.12	1, 3, 5
Type: Supervised			
Study case (problem-based)	26	1.04	1, 2, 4, 3, 6
Type: Autonomous			
Personal work	62	2.48	1, 2, 4, 3, 5, 6

Assessment

Resolution of the case study

Written report (in groups) on the analysis part (15% of the final grade) and written and oral group presentation of the management proposal (20%).

Theoretical contents

First partial individual exam (30% of the mark). Contents of blocks 1 and 2.

Individual second exam (30% of the mark). Contents of blocks 3 and 4.

Other activities: problem solving, summaries of other activities and participation (5%)

The final grade of the subject is calculated as the average weighted by the percentages indicated in the previous notes
If the average mark of the two partial exams does not reach 5, the mark of the partial exams will not be considered and it will benecessary to take an additional examination of the whole subject. This reevaluation exam will be worth 60% of the final grade, as long as its mark is at least 3.5; otherwise the subject will be considered failed. To participate in the reevaluation, the students must have been previously evaluated in a set of activities whose weight equals to a minimum of two thirds of the total grade of the subject. Therefore, the students will obtain the "Not Evaluable" qualification when the evaluation activities have a weighting of less than 67% in the final grade.

For the rest of assessment activities, there is no need to obtain a minimum mark.

It is also possible to take an additional exam to improve the mark of the theoretical part. This exam will be on the same date as the reevaluation one. In case the mark obtained is better than the average of the two partial exams, its mark will be considered and worth 60% of the final grade; otherwise its mark will be averaged with the mark of the partial exams, always guaranteeing that the subject will be passed (that is, in no case a student will be considered failed if he/she had passed the partial exams).

The non-delivery of any of the assessment activities within the established period implies a zero mark for that activity.
*Student's assessment may experience some modifications depending on the restrictions to face-to-face activities enforced by health authorities.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Case study - analysis	15	0	0	1, 4
Case study - management plan	20	4	0.16	1, 2, 3
Exam - first part	30	2	0.08	1, 4, 5, 6
Exam - reevaluation	(variable)	2	0.08	1, 4, 5, 6
Exam - second part	30	2	0.08	1, 4, 5, 6
Other activities	5	0	0	1, 5

Bibliography

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Waring RH, Running SW. 2007. *Forest Ecosystems:Analysisat Multiple Scales* (3rd Edition). Academic Press.

Young RA, Giese RL (eds.). 2002. *Introduction to Forest Ecosystem Science and Management* (3rd Edition) Wiley.

*Some of the previous texts are available electronically at the UAB library (https://ddd.uab.cat/record/22492)