



## ECOLOGY OF POPULATIONS AND COMMUNITIES (2015-16)

### GENERAL INFORMATION

Code 26531

ECTS Credits 6

#### Departments and areas

Department	Area	Area	Report R.
ECOLOGY	ECOLOGY	YES	YES

#### Studies

DEGREE IN BIOLOGY

#### Context of subject

The subject complements the contents developed in the course "Ecology" (4th semester) and, along with it, provides essential ecological foundations for environmental education and training of graduate students in Biology. The subject provides an integrated perspective of the functioning of biological systems. Its contents will form the basis for subsequent courses of environmental content, specifically for "Modelling of ecological systems" and "Methods in biodiversity" (6th semester), and other subjects within the itinerary "Environmental Biology". The contents of the subject and the competences that the subject contributes to develop are essential for the development of the environmental professional profile, especially in the field of ecological and environmental assessment and management, as well as in restoration and conservation of ecosystems and biodiversity; besides, the subject contributes to ecological training and basic knowledge on the functioning of the planet Earth and its ecosystems, which are crucial in the education of graduates in Biology.

Given the synthetic and inclusive nature of Ecology, the subject is based on knowledge and skills acquired in previous courses as "Biology", "Geology", "Statistics", "Genetics", "Biochemistry I and II", "Zoology I and II", "Botany", "Microbiology", "Plant biodiversity" and "Plant Physiology", and especially in the transdisciplinary course "Introduction to research in Biology".



## OBJECTIVES

### Subject objectives/competences (2015-16)

Properly use techniques of analysis of ecological data and of representation and interpretation of research results in Ecology.  
Understand the structure and dynamics of populations and communities and the basic methods for their characterization  
Know the variety of types of interactions between species and understand their interaction mechanisms and the implications of species interactions for community assembly and structure.  
Understand the relationships between biodiversity and ecosystem functioning.  
Apply ecological theory in the design of conservation measures and management of populations and communities.



## CONTENTS

### Theoretical and practical contents (2015-16)

#### THEORETICAL CONTENT:

##### B1. INTRODUCTON TO COMMUNITY ECOLOGY

T1. Questions, mend experiments

T2. Structure, classification and ordenation of communities

T3. Diversity and diversity patterns

##### B2. POPULATIONS

T4. Types of individuals

T5. Life cycles

T6. Population dynamics

T7. Evolutionary ecology: Life strategies

##### B3. INTERACTIONS BETWEEN SPECIES

T8. Competition

T9. Predation

T10. Parasitism

T11. Positive interactions; balance and networks of interactions

##### B4. FUNCIONING OF COMMUNITIES AND ECOSYSTEMS

T12. Diversity and function

T13. Assembly and dynamics of communities

T14. Stability and resilience

T15. Management, conservation and restoration

#### PRACTICAL CONTENT

P1. Field research in Community Ecology

P2. Simulation models in Ecology

P3. Lab analyses of ecological variables

P4. Statistical analysis pf ecological data

## EVALUATION

### Instruments and criteria of Evaluation 2015-16

Continuous assessment of students is based on the different activities developed throughout the year, from which points are accumulated up to 60, which can reach 100 by adding 40 points from the final test. The course is approved obtaining an overall rating equal to or greater than 50 points.

To add points from the different activities a minimum score of 4 points over 10 is required from both the field work report and the final test.

The scores for the course in the various activities are not saved for the next year. The ongoing evaluation process restarts each course.

For the extraordinary evaluation period (July), the evaluation of the subject is based solely on the average score of two tests: a test on the theoretical content with multiple choice questions, exercises, and short assays, and a specific test on field research and related practical work. The test is approved obtaining an average rating of 5 over 10.

Type	Criterion	Description	Ponderation
FINAL TEST	Test including multiple choice questions, exercises, and short assays on theoretical and practical contents.	Final test	40
ACTIVITIES OF EVALUATION DURING THE SEMESTER	Responses to multiple-choice tests and exercises	Periodic tests on theoretical contents and exercises	25
ACTIVITIES OF EVALUATION DURING THE SEMESTER	Quality of the research report (research article format) and its presentation (either poster or oral communication)	Research work (team work)	25
ACTIVITIES OF EVALUATION DURING THE SEMESTER	Actual development of practical work: attendance, active participation, contribution to plenary discussion, response to questionnaires; other participation and knowledge dissemination activities previously agreed with the students.	Practical laboratory and computer activities and student participation	10