COURSE DATA

Data Subject

Code	43238
Name	Biology and conservation of birds
Cycle	Master's degree
ECTS Credits	3.0
Academic year	2022 - 2023

Study (s)

Degree	Center	Acad. year	Period
2148 - M.D. in Biodiversity: Conservation and Evolution	Faculty of Biological Sciences	1	Annual

Subject-matter

Degree	Subject-matter	Character
2148 - M.D. in Biodiversity: Conservation and Evolution	2 - Biodiversity and conservation of vertebrates	Optional

Coordination

Name	Department
AZNAR AVENDAÑO, FRANCISCO JAVIER	355 - Zoology
PEREZ DE LANUZA, GUILLEM	355 - Zoology

SUMMARY

Biology and Conservation of Birds is a module of the Master: "Biodiversity: Evolution and Conservation", of 3 ECTS credits. Birds are one of the zoological groups with the greatest popularity and social projection. In addition, many of their species are especially sensitive to environmental changes, so they represent one of the most prominent elements of conservation programs. Both aspects originate a great demand, both social and political, for research and management of species of this group of vertebrates. This course is structured according to a primary objective: to provide tools to carry out a faunal inventory of birds in a given area. However, it is intended to have a good balance between academic aspects (the study of ecology and adaptation) and applied aspects (the elaboration of inventories), as stated in the White Book of the Bachelor's Degree in Biology (ANECA, 2004). In this way, it is intended to respond to the growing demand for experts capable of performing tasks in environmental consultancy, management and conservation of protected areas, environmental education, environmental impact assessment, etc.

PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

There are no specified enrollment restrictions with other subjects of the curriculum.

Other requirements

To take Biology and Conservation of Birds it is essential to enrol simultaneously in the course Biology and Conservation of Mammals, since most of the activities are shared by both subjects.

OUTCOMES

2148 - M.D. in Biodiversity: Conservation and Evolution

- Students should apply acquired knowledge to solve problems in unfamiliar contexts within their field of study, including multidisciplinary scenarios.

- Students should be able to integrate knowledge and address the complexity of making informed judgments based on incomplete or limited information, including reflections on the social and ethical responsibilities associated with the application of their knowledge and judgments.

- Students should demonstrate self-directed learning skills for continued academic growth.

- Be able to access the information required (databases, scientific articles, etc.) and to interpret and use it sensibly.

- Be able to access to information tools in other areas of knowledge and use them properly.

- Stimulate the capacity for critical reasoning and for argumentation based on rational criteria.

- Encourage ethical commitment and environmental awareness.

LEARNING OUTCOMES

- To correctly identify bird specimens using direct and indirect methods, using guides and keys.

- To know how to prepare a field notebook, recording all relevant information on the ornithological observations made.

- To determine the phenological status of the bird species identified.

- To obtain biological and ecological information on bird species from clues.

- To ask relevant scientific questions about bird biology and ecology, especially in conservation contexts.

DESCRIPTION OF CONTENTS

1. Presentation and justification of the module

In this first class, the objectives of the course and the dynamics and way of working are presented.

2. Bird diversity in Spain. Orders, morphological, ethological and ecological diagnostic characters

In this topic, the most relevant aspects of avian diversity and general methods for bird identification are presented in a succinct and integrated way.

3. Movements, migration and phenology

This topic describes a comprehensive taxonomy of the different types of movements that can be made by any organism. In addition, the concept of migration and the evolution of migration in birds are briefly discussed. Finally, the criteria for establishing the status of any bird species are discussed.

4. Training classes of direct and indirect identification

Two types of training classes are proposed in this unit:

1) Species identification trials using photographs that mimic field observation conditions, including limited viewing of the photographs. A bird identification field guide is used as a basic tool.

2) Problem situations based on photographs of clues (tracks, signs of activity) that the students have to investigate using identification guides and keys, as well as specific internet tools (http://www.uv.es/zoobot).

5. Laboratory (1): identification of birds by voice

In this session, students are trained, through problem situations, on how to retain diagnostic features of songs and calls, as well as to identify the species of birds that produce them through the use of a sound library.

6. Laboratory (2): identification and analysis of pellets

In this practice, the students:

1) Identify pellets from their morphology and additional data (location, locality), using specific bibliography.

2) Analyse the dietary content of diagnostic remains, using identification keys and guides.

3) As this is a comparative exercise (pellets of at least 5 or 6 species are used), the factors determining the diet of the birds are discussed. Particular emphasis is placed on constrictions, natural selection (using the theory of optimal foraging) and individual variation (animal personalities).

7. Field trips

During the course there are 3 field trips to practice identifying birds by direct observation or signs:

(1) Urban environment (usually on the university campus itself),
(2) Wetlands (usually a marsh near Valencia),
(3) A field trip lasting several days in an environment with a diversity of environments (e.g. Serranía de Cuenca).

The destination of the field trips may vary from one course to another.

WORKLOAD

ACTIVITY	Hours	% To be attended
Theory classes	20,00	100
Laboratory practices	10,00	100
Development of individual work	10,00	0
Preparation of practical classes and problem	5,00	0
Resolution of case studies	15,00	0
Resolution of online questionnaires	15,00	0
TOTAL	75,00	

TEACHING METHODOLOGY

As mentioned above, this subject is taught together with "Biology and Conservation of Mammals", so the teaching methodology is adapted to a 6 ECTS course. Four groups of tasks are envisaged. In the first group, the most relevant aspects of diversity and general methods of bird identification will be presented in a succinct and integrated way. This subject will be taught by the lecturer using a combination of two strategies: **lecture** (with the support of different audiovisual aids) and **teaching by problems**. Special emphasis will be placed on this second methodology, presenting species identification **problems** that students will have to solve in class. The aim is for students to actively explore, discover and understand. In addition, the discussion of the problems will encourage student participation. Students will also work on the identification of bird species through direct identification and inferences based on the observation of clues. **Deductive reasoning** from fragmentary or incomplete information will be encouraged.

The second group of tasks are the 2 **laboratory practicals**. In the first one, the students will acquire skills to identify birds by calls and songs. For this purpose, phonographic material will be used, and useful principles will be worked out in order to achieve a correct determination, even for the beginner. In the

second, the student will attempt an analysis of the diet of birds based on food remains (pellets). This task will enhance both the identification and quantification of the prey fauna (e.g. micromammals in an area using their skeletal remains and hair) and the predator. Again, the work will be considerably **inferential**, and will not be limited to developing observation skills alone. Several sources of information will need to be used in order to arrive at correct diagnoses.

The third group of tasks includes 3 **field trips**, which will aim to identify, by **direct and indirect methods**, birds in real contexts, selecting selected habitats (a good representation of habitats has been sought). Binoculars, spotting scopes and identification guides will be used for daytime birdwatching. These activities will be complemented by searching for and identifying bird tracks on all outings. Students will be asked to formulate one or more **questions** raised by the observations made during the field trips.

All activities (training classes, practical classes and field trips) carried out during the course should be recorded in an individual field notebook to be handed in at the end of the course. For the preparation of the field notebook it is advisable: (1) not to limit oneself to a **mere list of species** or tracks observed. It is advisable to make a succinct **description** of the observation (place, time, diagnostic features, behaviour observed); (2) use **diagrams and drawings** to complement the records; (3) make notes on the comments and discussions raised in situ by the observations and (4) include at least some **questions, reflections or personal enquiries** about the observations made.

The fourth group of tasks will focus on students, in groups of 3-5 students, to briefly develop an **original idea** that solves or improves an aspect of bird and mammal conservation. This idea will follow a format already established by ADEIT-UV to promote **entrepreneurship** in the area of biodiversity, which includes the completion of a form and the production of a 1-minute video. The whole process will be tutored by the teaching staff of the subject.

EVALUATION

The evaluation of the course will be carried out by means of the following procedures:

1) Attendance and use of the classes. Attendance at **practical classes** and **field trips** will be **compulsory**. A record of attendance will be kept to evaluate the use made of the classes.

2) Development of the **original idea** and the associated **video**: (25% overall mark). In accordance with the MOTIVEM competition calendar, each group will have to hand in the original idea and the video. The teachers will share all the ideas in the last session of the course.

3) **On-site exam** on the contents of the field notebook (75% overall mark). At the end of the course the student will have to carry out, with the help of his/her own field notebook, a short test containing questions or tasks at three levels: (1) species that have been observed at a certain point; (2) theoretical contents that have been discussed in relation to the observations, both in the field trips and in the practicals; (3) own questions on the activities of the course.

In order to pass the course, it is essential to (1) obtain a **minimum score of 5** out of 10 in the **task "elaboration idea + video"**; (2) **present the field notebook** and (3) **pass the exam** (minimum score of 5 out of 10).

Only **excused absence** from a laboratory practical or training class will be allowed. In cases of force majeure, specific solutions will be found.

REFERENCES

Basic

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Additional

- www.uv.es/zoobot

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