Animal and Plant Biology

2018/2019

Code: 100946
ECTS Credits: 3

<table>
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<th>Degree</th>
<th>Type</th>
<th>Year</th>
<th>Semester</th>
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<td>2500253 Biotechnology</td>
<td>OB</td>
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</tbody>
</table>

Contact

Name: Francesc Muñoz Muñoz
Email: Francesc.MunozM@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

Concepcion de Linares Fernandez

Prerequisites

There are no official prerequisites, but it is advisable for the student to review the contents related to zoology and botany of the Biology subject of the baccalaureate.

Objectives and Contextualisation

Throughout this course, the student must acquire the knowledge that gives him a vision as complete as possible of the zoological and botanical bases and of the diversity of animals, plants and fungi from an anatomical, functional, systematic and phylogenetic perspective. It should also allow it to place each group in an ecological context, in relation to the number of species, habitat and way of life, position within the ecosystems as well as their importance in relation to their interest in applied sciences.

The specific training objectives are:

- Introduce to the student the main structuring concepts of the science of Zoology and Botany.
- Understand the systematics and phylogenetic relationships between the main groups of organisms as a result of evolutionary and adaptive processes.
- Know the main levels of organization and architectural patterns of organisms.
- Give some knowledge about morphological features, biological cycles, ecological importance and highlight the biotechnological importance of the main groups of organisms.

Skills

- Describe the molecular, cellular and physiological bases of the organisation, functioning and integration of living organisms in the framework of their application to biotechnological processes.
- Read specialised texts both in English and ones own language.
• Reason in a critical manner
• Search for and manage information from various sources.
• Think in an integrated manner and approach problems from different perspectives.

Learning outcomes

1. Develop a critical approach to anthropic impacts on the biosphere.
2. Identify the principal groups of living beings studied by botany.
3. Identify the principal groups of living beings studied by zoology.
4. Read specialised texts both in English and one's own language.
5. Reason in a critical manner
6. Search for and manage information from various sources.
7. Think in an integrated manner and approach problems from different perspectives.

Content


Algae. The main groups of algae. The endosymbiotic origin, its ecology and its morphology. The origin of the chloroplast. Phytoplankton, primary production and blooms (algal toxins).

Heteroconts. General characteristics, criteria of classification and diversity.

The rhodophyta. General characteristics, criteria of classification and diversity. Uses and applications.


Flowering plants. Origin, reproductive biology and reproductive cycle. Groups of flowering plants. Groups of economic interest and groups that make up the landscape.

Gymnosperms. General characteristics. Description, ecology, geographical distribution and uses of the species of greatest interest.

Angiosperms. General characteristics. Diversity, description, ecology, geographical distribution and uses of the species of greatest interest.


**Sponges.** General characters. Cell organization. Structural types. Representative groups. Functional adaptations to the aquatic environment.

**Cnidaria.** General characters. Cellular elements. Representative groups. Biological cycles.


**Annelids.** Basic characters of the annelids. Main groups and adaptations to the different habitats.

**Molluscs.** Basic characters of the group. Importance of the shell and its evolution. Main groups and their adaptations to the different habitats.


**Deuterostomes. Chordates.** Exclusive chordate traits. Comparative characters of Urochordates and Cephalochordates. Biology of the two groups.


**Methodology**

The methodology used in this subject to achieve the learning process is based on making the student work the information that is put to his reach. The function of the teacher is to give the information or to indicate where the student can get it and help him so that the learning process can be carried out effectively. To achieve this goal, the subject is based on the following activities:

**Master classes:**

With these classes, the student acquires the basic scientific and technical knowledge of the subject that must be complemented with the personal study of the topics explained.

<table>
<thead>
<tr>
<th>Activities</th>
<th>Hours</th>
<th>ECTS</th>
<th>Learning outcomes</th>
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<tbody>
<tr>
<td><strong>Type: Directed</strong></td>
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<tr>
<td>Master Classes</td>
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<td>0.96</td>
<td>1, 2, 3</td>
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<td>Supervised activities carried out in the framework of the virtual campus</td>
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<td>0.24</td>
<td>6, 1, 2, 3, 4, 7, 5</td>
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<tr>
<td><strong>Type: Autonomous</strong></td>
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<td>Documentary research and participation in the virtual campus discussion forum</td>
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<td>0.16</td>
<td>6, 4, 7, 5</td>
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<tr>
<td>Study</td>
<td>30</td>
<td>1.2</td>
<td>6, 1, 2, 3, 4, 7, 5</td>
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<td>Text reading</td>
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<td>0.24</td>
<td>6, 4, 5</td>
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Evaluation

The evaluation of this subject is carried out throughout the course, and it consists of the following evaluating activities:

Partial exams:

In these exams, the students' knowledge of the subject will be evaluated individually, as well as their capacity for analysis and synthesis, and of critical reasoning.

There will be 2 partial exams, one for the part of plant biology and one for the part of animal biology.

Participation in the Moodle Classroom:

In these tests, the student's participation in different activities will be evaluated, as well as their capacity for analysis and synthesis, and critical reasoning.

Final exam:

Those students who do not pass (minimum mark of 5) one of the two partial exams must submit to the final exam. If in the final exam one of the notes is less than 4 the student will not pass the subject. Likewise, the students that wish to improve the mark of one or both parts will be able to do it attending to the final exam. Applying for the final exam implies that the previously obtained mark will be lost.

To be eligible for the retake process, the student should have been previously evaluated in a set of activities equaling at least two thirds of the final score of the course or module. Thus, the student will be graded as "No Avaluable" if the weightin of all conducted evaluation activities is less than 67% of the final score

Evaluation activities

<table>
<thead>
<tr>
<th>Title</th>
<th>Weighting</th>
<th>Hours</th>
<th>ECTS</th>
<th>Learning outcomes</th>
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<td>0.06</td>
<td>6, 1, 3, 4, 7, 5</td>
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<tr>
<td>Partial exam of plant biology</td>
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<td>1.5</td>
<td>0.06</td>
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<tr>
<td>Participation in the Moodle Classroom</td>
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<td>2</td>
<td>0.08</td>
<td>6, 1, 2, 3, 4, 7, 5</td>
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Bibliography


Web links:
• Aula Virtual de l'Autònoma Interactiva: https:cv2008.uab.cat
• Animal Diversity Web: http://animaldiversity.ummz.umich.edu/
• Adena/World Wildlife Found: http://www.wwf.es/
• Biodidac: http://biodidac.bio.uottawa.ca
• Tree of life web project: http://tolweb.org/tree/phylogeny.html
• Understanding evolution: http://evolution.berkeley.edu/evolibrary/article/evo_01
• Comissió Internacional de Nomenclatura Zoològica: http://www.iczn.org/
• Curs de Botànica de la Universitat d'Extremadura: http://www.unex.es/botanica/LHB
• Museu Nacional de Ciències Naturals de Madrid (CSIC): http://www.mncn.csic.es/
• Natural History Museum, Londres: http://www.nhm.ac.uk/