

Biology and Diversity in Cryptogams

Code: 100802
ECTS Credits: 6

Degree	Type	Year	Semester
2500250 Biology	OT	4	0

Contact

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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

Llorenç Sáez Gonyalons

Prerequisites

There are no official prerequisites, but it is advisable for the student to review the contents related to the subject of Botany.

Objectives and Contextualisation

Throughout this course, students must acquire the knowledge that gives them a vision as fully as possible of the knowledge bases and the diversity of cryptogamous plants, from a 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 the activities of management of the natural environment .

The specific training objectives are:

- Introduce to the students the main structuring concepts of the study of cryptogames
- 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.

Content

THE ALGAE. Taxonomic characteristics. Chloroplast evolution. The phylogeny of algae. Pigments, reserve substances and other cellular features.

ECOLOGY OF THE ALGAE. Ecological biotic and abiotic factors that condition the distribution of algae. Zoning Algae as indicators of the evolution of the climate and the landscape of the last millennia. Outcrops, blooms and red tides. Conditioning factors Algal toxins

BIOLOGICAL ASPECTS. Symbiosis of algae. Zooxanthella, zooecianella and cyanocyanella. Symbiosis with higher plants. Lichens. Natural resources of human exploitation algal. Applications

CIANOBACTERIA. Cell structure. Stromatolites Reproduction Morphological diversity. Movement Relevant orders. Ecology Uses GLAUCOPIDS. Ancestral Chloroplast and Phylogeny Character. Mobility. Ecology

RODOPHYTA, CLOROPHYTA. Cell structure. Morphological diversity. Calcification Reproductive structures. Vital cycles Distribution and economic interest. Characteristics of the different orders and study of the most representative genres. Ecological aspects. Evolutionary interest of chlorophytes and relation with CLORARACNIOPHYTA.

EUGLENIDA, DYNOFLAGELLATES, HETEROCONTS, and CRIPTOPHYTA Cell structure. Ecology Study of the most representative genres.

PRYMNESIOPHYTA. Cell structure: flagella, haptonema, coccoliths. Climate indicators.

BRYOPHYTA: Diversity, main evolutionary lines and common and distinctive characteristics of the main groups.

BRYOPHYTA: Hepatic, mosses and hornworts. Vegetative and reproductive characteristics. Phylogeny and diversity. Examples of some of the species present in the Iberian peninsula most characteristic.

BRYOPHYTA: Adaptations, biogeographic and conservation aspects.

vascular cryptogams: Diversity, main evolutionary lines, common and distinctive characteristics of the main groups and mechanisms of speciation.

vascular cryptogams: Morphological diversity, phylogeny and ecology. Characteristics of the main groups: Lycophytes and Monilophyta. Examples of some of the most characteristic species present in the Iberian peninsula. Diversity in the Iberian Peninsula and biogeographic patterns in the Iberian NE. Conservation of threatened species.