Universitat Autònoma de Barcelona

2018/2019

Protistology

Code: 101024
ECTS Credits: 3

Degree	Type	Year	Semester
2500502 Microbiology	OB	2	1

Contact

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Use of languages

Principal working language: catalan (cat)
Some groups entirely in English: No
Some groups entirely in Catalan: No
Some groups entirely in Spanish: No

Teachers

Ramon Pérez Obiol

Prerequisites

There is no official prerequisite, but it is advisable for students to review the general concepts of cell biology studied in the previous course. It is also recommended to bear in mind the generic differences between the "prokaryotes - eukaryotic" and "plant - animal" dichotomies studied in subjects of the previous year, such as Cell Biology and Animal Histology, Plant Biology and Animal Biology.

It is also appropriate to have a good knowledge of the subjects studied during the first semester of the degree of Microbiology, such as Molecular Biology of Eukaryotes or Physiology and Microbiological Metabolism.

Objectives and Contextualisation

This compulsory subject is a brief introduction to the knowledge of the protists, an eclectic and slightly artificial term, historically used to group a large diversity of groups that share the fact of being eukaryotes and unicellular (at least not reaching a complexity pluricellular).

As it is an introductory subject, it only establishes the bases to generate an overview of the characteristics of the main groups and their phylogenetic interrelations, as well as with other groups of prokaryotes and eukaryotes. Also of basic form they will give notions of the paper of these organisms in the nature and their relations with the human being.

Objectives of the subject:

1. Identify the different structures that make up the protists, paying special attention to the exclusive parts of the forms of unicellular eukaryotes.

2. To know, broadly, the diversity of the protists, distinguishing the characteristics that define the different groups.

3. To know the phylogenetic hypotheses that relate the protists to each other as well as with the rest of prokaryotes and eukaryotic organisms.

4. To know the role of the different groups of protists in the different ecosystems, as well as the different habits and vital strategies.

5. To know the relation of the protists to the human beings.

Skills

- Know and interpret microbial diversity, the physiology and metabolism of microorganisms and the genetic bases that govern their vital functions.
- Obtain, select and manage information.

Learning outcomes

1. Evaluate the role of microorganisms in important industrial processes and as producers of key compounds for the development of our societies and the improvement of quality of life
2. Identify the role of the different microbial groups in the environment and in the cycles of the elements, and their environmental implications
3. Obtain, select and manage information.
4. Recognise the diversity of the microbial world and identify the different groups it is composed of.
5. Recognise the role of microorganisms as agents of disease or toxicological problems in human beings, animals and plants.

Content

Origin and evolution of eukaryotes. Endosymbiosis Chloroplast and mitochondrial evolution.

Main phylogenetic groups that study protistology. Diversity.

Excavates: Discicrystals (Euglenoids, Quinetoplastids and Percozous) and Metamonadals (Diplomones, Retortamoniads, Parabasalid and Oximonids). Symbiotic relationships and pathological importance.

Haptophytes. Cocolitophores, importance in marine phytoplankton.

Heteroconts. Diatoms, ecological importance. Chrysophices. Opalines and Oomicets.

Alveolates: Dinoflagellates, Apicomplexes and Ciliates. Ecology, outcrops, pathologies.

Archeplastides. Groups of interest Biotechnological applications.

Rizharis: Cercozoa (Chloracniophytes and Cercomonidides). Foraminifera and Radiolaria. Ecological and evolutionary importance.

Amebozoa: Ameboid fungi and lobose amoebae, ecology and pathology.

Opistoconts. Coanozoa and Microsporidia. Economic importance

Methodology

Teaching methodology and training activities:

The subject of Protistology consists of two types of teaching, master classes and seminars, programmed in an integrated way so that the student will have to relate throughout the course the content and activities programmed in order to achieve the indicated competencies in section 5 of this guide:

- Participatory master classes: The student must acquire the scientific and technical knowledge of this subject by attending these classes and complementing them with the personal study of the topics explained. At the beginning of the course, students will be given a detailed calendar of topics that will be dealt with

throughout the course, as well as the bibliography that they will have to consult to prepare each theoretical class and for the personal study of the theoretical contents of the subject The teaching of each subject will be based on a theoretical presentation with the participation of students.

- Seminars: They will deal with matters related to the subject that will allow the student to reflect and work personally on the topics covered. As a complement to the seminars, issues related to the subject will be discussed that may be discussed by students and teachers in the virtual campus forum

Additional information

For a good follow-up of the subject, the student will have additional material in the Virtual Campus of the subject. The virtual Campus will be the platform for non-contact work and recommended readings.

Activities

Title	Hours	ECTS	Learning outcomes
Type: Directed			
Lectures	5	0.2	2, 3, 5, 4, 1
Seminars	20	0.8	2, 3, 5, 4, 1
Type: Autonomous			
Discussion in forums	8	0.32	2, 3, 5, 4, 1
Reading	28	1.12	2, 3, 5, 4, 1
Study	8	0.32	2, 3, 5, 4, 1

Evaluation

The evaluation of the subject will be individual and continued through the following activities:

- Evaluation of the master classes (80%): There will be two partial tests (40% each) that will be eliminatory of matter when the mark obtained by the student is equal to or more than 5. There will be a retake test where the partial unsuccessful can be recovered. **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. Thus, the student will be graded as "No Avaluable" if the weighthin of all conducted evaluation activities is less than 67% of the final score**. In this proof of recovery students can also present those who, having reached the minimum score to pass the subject, want to raise a note. In this case, the note that will prevail will be the one obtained in the last test. In the recovery test, you can not make an average if you do not have at least 4 of each one of the partial ones.

- Evaluation of the autonomous seminars and activities (20%): We will evaluate both the work that must be presented on seminar days (content, capacity for synthesis, rigor in the expression, quality of documentary sources and timing) and the participation and attendance at all seminars. On the other hand, participation (and its quality) will also be evaluated in the virtual campus forum.

To make medium, at least 4 in each part (theory and seminars) is mandatory.

No Avaluable

A student will be graded as "No Avaluable" if the weighthin of all conducted evaluation activities is less than 67% of the final score

Evaluation activities

Title	Weighting	Hours	ECTS	Learning outcomes
Individual tests throughout the course	80%	1	0.04	3
Seminars carried out by students	20%	5	0.2	2, 3, 5, 4, 1

Bibliography

Books:

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- HISTÒRIA NATURAL dels Països Catalans. Vol. 4. Ed. Enciclopèdia Catalana.
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- SCAGEL, R.F. et al. 1987. El Reino Vegetal. Ed. Omega.
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Websites:

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