



Code: Biology

Degree: all ISA first cycle degrees

Annual Course – Compulsory

Credits: 12 ECTS 2,5h Theoretical + 2,5h Experimental

Total hours of work: 336 Horas

Coordinator: Wanda Viegas

Modules coordinators: Glória Esquivel (1^oM); Adília Oliveira (2^oM); Ana Monteiro (3^oM); Teresa Ferreira (4^oM)

Objectives: To study the Biological systems and the processes responsible for life functions. It includes four modules: 1. Cellular Biology; 2. Microbiology; 3 Botany; 4 Zoology

Programme

1. Cellular Biology: The processes common to all organisms - how cells are built, how the genetic information is organized, transmitted and expressed, structure and importance of cell membranes, and processes that allow energy to be captured. Origins of genetic diversity, recombination processes and techniques used for genome analysis and production of transformed organisms.

2. Microbiology: Microbial diversity, how Aprender a diversidade microbiana; aprender a ubiquidade dos micróbios. Experimentar as técnicas básicas de cultivar e observar micróbios. Reconhecer o papel dos micróbios na reciclagem da matéria. Reconhecer o papel dos micróbios na biotecnologia, na alimentação e na agricultura.

3. Botany: Plant evolution. Areas of distribution. Internal-external organization of plants as a function of the environment. The main taxonomical groups. Plants with great impact on humans. Introduction to the study of the communities.

4. Zoology: Principles of organization in the animals, evolution and development. Characteristics of the more relevant taxonomical groups – anatomy and life cycles. Portuguese species and their importance in terms of conservation.

Bibliography

Main Bibliography

- BIOLOGY (GENERAL):

«Biology» Campbell, N.A. & Reece J.B. Edition 2005. BISA at least 3 books (cotas Z30-492, Z30-493 e Z30-494)

- CELULAR BIOLOGY

«Biologia Celular» Azevedo, C. 4^a edição. Lidel 2005. Several books in BISA

- MICROBIOLOGY

«Brock Biology of Microorganisms» Madigan, M.T. & Martinko, J.M. 2006 11ª Edição, Pearson Education International Existem alguns exemplares desta edição no Lab de Microbiologia

- BOTANY

«Biology of Plants» Raven, P.H., Evert, RF & Eichhorn SE 2005 7ª edição BISA F50-222 (previous edition). 7ª edition to arrive at BISA soon.

- ZOOLOGY

«Integrated Principles of Zoology». Hickman CP, Roberts LS, Larson A, L'Anson H & Eisenhour DJ 2006 McGraw Hill Higher Education. New York. In BISA

Other Bibliography

Recommended specific papers

Assessment

Students have to participate in all classes, with a tolerance of two and with 15 min tolerance at classes beginning.

Tests, report and an oral presentation are required for the **continuous evaluation**. Students that get a score of 12 (out of 20) do not need to do the final module examination.

When they do not get that mark, they will have to perform an examination at the end of the module. In this case the continuous evaluation mark will count as 40% of the final mark, and the exam as 60%.

Final Exam of the course

Will take place at the end of the four modules and students are allowed to perform only the missing one. They can also use the exam to improve their marks.