Code: 1656 **Cell Biology and Microbiology**
Degree: all 1st cycles, except Biology
Curricular Year: 1st **Semester Course: 1st**
Credits: 6 ECTS **Compulsory**
Language: Portuguese/English
Responsible: Maria Wanda Sarujine Viegas
Other Lecturer(s): Adília Neves Pires de Oliveira, Maria Elisa Ferreira da Silva Pampulha, Maria da Glória Calado Inglês Esquível, Maria Leonor Mota Morais Cecílio and Sara Barros Queiroz Amâncio
Web Site: http://www.isa.utl.pt/home/node/3722

1. Contact hours:
Lectures 42 **Practicals/Laboratory** 28 **Others** 14 **Total** 84

2. Objectives:

To study the Biological systems and the processes responsible for life functions. It includes two modules: 1. Cellular Biology; 2. Microbiology. In the initial module we pretend that students understand that besides organisms diversity there are major common features of cell structure and biochemical processes underlying cell growth and multiplication. The capacity to distinguish microorganisms diversity namely their structure, metabolism, evolution and ecology is also a major goal. The capacity to understand the distinct levels of microorganisms interactions with the environment it is also considered very relevant.

3. 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 The microbial world and the phylogenetic relationships of microbial life. The three domains of life: *Bacteria*, *Archaea* and *Eukarya*. Structure and general characteristics of bacteria, fungi, virus and subviral-particles. An overview of the occurrence of microorganisms in soil, water and air and their metabolic diversity and nutritional types will also focus environmental factors affecting of microbial populations growth . A special importance will be given to microbial communities in different ecosystems emphasizing the most relevant ecological interactions.

4. Bibliography:

Main Bibliography

«Biology» Campbell, N.A. & Reece J.B. Edition 2005.
"Brock Biology of Microorganisms" Madigan, M.T., et al 2009 12ª Edição, Pearson International Edition
"Manual de Microbiologia".A.Oliveira & M. E. Pampulha 2010, Edição A.E.A

Other Bibliography

"Microbiology"Prescott, L. M. et al 2005, 6ª Edição, McGraw-Hill, International Edition
Biologia MicrobianaLopes, M. A. & Fonseca, A. 1996. Universidade Aberta

5. Assessment:

- Four global examinations
- Weekly direct evaluation
- Written and oral presentation of a specific topic

6. Estimated Workload: 168.0 Hours

7. Last Update: 6/7/2010