

Code: 1655 Cell Biology**Degree:** 1st cycle - Biology**Curricular Year:** 1st**Credits:** 6 ECTS**Language:** Portuguese/English**Responsible:** Maria Wanda Sarujine Viegas**Other lecturer(s):** Maria da Glória Calado Inglês Esquível, Manuela Gomes da Silva and Maria Margarida Cabrita Xavier Delgado**Web Site:** <http://www.isa.utl.pt/home/node/3950>**Semester Course:** 2nd
Compulsory**1. Contact hours:****Lectures 42 Practicals/Laboratory 28 Others 14 Total 84****2. Objectives:**

The core material focuses on function at a molecular level: the structure and regulation of genes, and the structure and synthesis of proteins; how these molecules are integrated into cells; and how cells are integrated into multicellular systems and organisms.

3. Programme:*Eukaryotic cells organelles and structures*

Cell Biology genesis. Organization of procariotic vs eucariotic cells

The cell functional frontier: biomembranes - chemical composition, structure and functions Biomembranes trafficking in the endomembraneous system

Bioenergetic cell centres: biogenesis, structure and functional organization of mitochondria and plastids peroxisomes

Nuclear structure and functions: nuclear compartments; chromatin and chromosomes organization

The spatial organization of the cytoplasm through the cytoskeleton .

Fundamental processes of Cell Biology

Chromatin epigenetic information: structural and functional levels or organization

Cell communication and signalling

Processes of cell multiplication: cell cycle and cell division

Origin and consequences of cell cycle errors

Cell elimination processes: senescence, necrosis and apoptosis

Origin and establishment of germ cells: meiosis and sexual reproduction

4. Bibliography:**Main Bibliography**Alberts, B. Bray, D. Lewis, J. Raff, M. Roberts, K. Watson, J., 2002. *Molecular biology of the cell*. Garland Publishing, Inc., New York**Other Bibliography**Selected papers from *Trends in Cell Biology***5. Assessment:**

- Two global examinations
- Direct evaluation each two weeks
- Written and oral presentation of a paper

6. Estimated Workload:

168 Hours

7. Last Update:

25/2/2011