

POLI ESCOLA SUPERIOR SAÚDE TÉCNICO GUARDA	GUIA DE FUNCIONAMENTO DA UNIDADE CURRICULAR (GFUC)	MODELO PED.010.03
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Curso	Pharmacy						
Unidade curricular (UC)	Cell Biology and Histology						
Ano letivo	2023/2024	Ano	1.º	Período	1.º semestre	ECTS	7
Regime	Obrigatório	Tempo de trabalho (horas)			Total: 189	Contacto: 45 T; 37.5 TP, 15 PL	
Docente(s)	Luís Pedro Ferreira Rato Sónia Alexandra Pereira Miguel						
<input type="checkbox"/> Responsável da UC ou	Área/Grupo Disciplinar (cf. situação de cada Escola)		Sónia Alexandra Pereira Miguel				
<input type="checkbox"/> Coordenador(a)							
<input checked="" type="checkbox"/> Regente							

PREDICTED GFUC

1. LEARNING OBJECTIVES

This curricular unity aims to provide the student with a global view of the cell as a fundamental unit of life, and its organization in tissues.

At the end of the course the student should be to be able to:

- Identify the different cell types and their cellular components.
- Describe the internal organization of the cell and recognize its function.
- Describe the cell in its social context: interaction with the extracellular matrix and other cells.
- Identify and discriminate under the optical microscope the different types of epithelial, connective, muscular and nervous tissues.

2. PROGRAMME

- I. The prokaryotic and eukaryotic plant and animal cell.
- II. Cellular membranes: transmembrane transport.
- III. Intracellular compartments and protein Sorting.
- IV. Intracellular membrane traffic.
- V. Mitochondria and chloroplasts: structure and function.
- VI. Cytoskeleton.
- VII. Cell cycle.
- VIII. Renewal and cell death.
- IX. Cell Junctions and the Extracellular Matrix.
- X. Intercellular and intracellular communication.
- XI. Stem cells and tissue renewal.
- XII. Introduction to immunology.
- XIII. Introduction to tissues: epithelial, connective, muscular and nervous.

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Laboratorial program

- I. Microscopy.
- II. Cytology and histology.
- III. Cellular organelles' isolation.
- IV. Cell cycle.
- V. Cell culture.
- VI. Immunoassays.

3. COHERENCE BETWEEN PROGRAMME AND OBJECTIVES

The UC begins with the study of different cell types, their structure, composition and function. It follows by studying the cell surrounding, its interaction with the extracellular matrix and with other cells. This allows to evolve to the level of tissue organization, allowing to understand and study the different types of tissues of the human body. The introduction to immunology is an integrative approach to how communication is established between cells, and to study the antibodies, highly specific and fundamental molecules used in immunoassays. Parallel to the theoretical classes, students attended to theoretical-practical and practical and laboratory classes allowing the introduction to laboratory techniques, exercise solving and the realization of experiments. This allowed to consolidate the knowledge and also to develop laboratory skills and critical data analysis and interpretation of results.

4. MAIN BIBLIOGRAPHY

Biologia Molecular da Célula. Bruce Alberts, Alexander Johnson, Julian Lewis, David Morgan, Martin Raff, Keith Roberts, Peter Walter, John Wilson, Tim Hunt (2017). 6ª Edição. Artmed. ISBN: 9788582714225

Wheater's Functional Histology. Barbara Young, Geraldine O'Dowd and Phillip Woodford. (2013) 6th Edition. Churchill Livingstone. ISBN 978070204747

5. TEACHING METHODOLOGIES (INCLUDING EVALUATION)

During the theoretical classes the topics will be explained by the teacher. Throughout each class, questions will be made in order to assess the learning achievements and to allow clarification of concepts that have not been acquired. TP classes consist in solving problems and questions about the various contents. In PL classes students will perform cell biology experiments and examine slides of cytology and histology under the optic microscope. Continuous assessment consists of 2 written tests focusing on the theoretical syllabus (70% of final grade) and assessment of PL (30% of final grade).

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Failure to pass the continuous assessment, will imply that the student must perform an exam on all program (theoretical and laboratorial) in a special date provided by the School. The approval of curricular unity will be achieved with a final grade of at least ten, on a scale from zero to twenty.

6. COHERENCE BETWEEN TEACHING METHODOLOGIES AND OBJECTIVES

The teaching methodology purposes to give basic and simultaneously updated training on cell biology and histology. The methodologies developed in the practical and laboratory classes allowed students to know the main techniques used in cell biology and histology, perform them and interpreting the results, enabling them to understand the methods, and to develop technical skills and critical analysis of results. In all modalities (T, TP and PL) will encourage student's participation and their critical thinking. In addition, questions asked during lessons, will serve as diagnostic and formative assessment, allowing the teacher to adjust the lesson in order to achieve the established objectives. The continuous assessment aim to evaluate, during the semester, the skills and knowledge acquired by students during the learning process, according to the aims previously defined. This assessment also aims to encourage students to acquire regular study habits and dismissed them for the exam. In summary, this teaching methodology, aim to effectively achieve the defined objectives.

7. ATTENDANCE

It requires to attend 75% of the TP classes and 75% of the PL classes to perform continuous assessment.

8. SERVICE

Sónia Miguel (spmiguel@ipg.pt), Gabinete 16

Office hours: Tuesday (10:00-12:00) and Thursday (10:00-12:00)

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Office hours: 5ª Feira: 11:00 -12:00H

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Date:

16 de outubro de 2023

Professor(s):

Coordinator:

Clique