



## **MEDTEC SCHOOL**

**Course: PATHOLOGY, IMMUNOLOGY AND MICROBIOLOGY**

**Year: 3rd**

**Period: Annual**

**Credits: 4**

### **Objectives**

The course (19CFU) will offer an integrated introduction to the causes of cell, tissue and organ injuries (cellular pathology), the major microbial agents that cause human diseases (microbiology), the principal mechanisms of defense against pathogens and responses to injury (inflammation and immunity), and the general processes of the most relevant causes of human diseases (immunopathology, vascular pathology and oncology).

The module of Pathology aims to bring students closer to clinics by translating the basic knowledge of the first part of the course into its clinical counterpart illustrating the gross, microscopic and molecular features of disease, with particular attention to immunological and degenerative disorders. This part of the course will give a professionalizing profile, through student exposition to interactively presented and discussed case studies.

### **Prerequisites**

General knowledge of cell biology, cell physiology, histology and anatomy.

### **Contents**

The course will be divided into 4 modules:

1: General pathology (5CFU). This module will be divided into 4 topics:

Cellular pathology (0,5CFU)

Tumor biology (1CFU)

Innate immunity and inflammation (3CFU)

Vascular pathology (0,5CFU)

2: Microbiology (5CFU). This module will be divided into 2 topics

Basic concepts of microbiology (1CFU)

Medical microbiology (4CFU)

3: Immunology and immunopathology (5CFU). This module will be divided into 3 topics

Mucosal immune system and microbiota (1CFU)

Adaptive immunity (2CFU)

Immunopathology (2CFU)

4: Anatomical pathology (4CFU).

### **Teaching Methods**



Lectures: the main purpose of lectures is to transfer knowledge to students by guiding them through the most relevant subjects of the disciplines. Collaborative lessons with teachers of the course and recap lessons will be done in order to increase the integration of the different modules. Students who are unable to be present on campus due to the pandemic will participate on-line.

Small group activities: the purpose of these activities is to activate and solidify knowledge acquired during lectures and independent study, in a collaborative learning setting. For these activities, students will be divided in groups that will remain the same through the semester. Students who are unable to be present on campus due to the pandemic will participate on-line.

## Verification of learning

### Exam

Students' evaluation will be assessed through multiple choice questions at the end of the year. The faculty reserves the possibility to have also an oral exam.

### Exam content and evaluation

#### Content of Exam

66 questions each question is worth 0.5 points for a total of 33 points  
More than 60 correct answers = 30 lode

#### - General pathology 17questions:

Cellular pathology 2q

Tumor biology 4q

Innate immunity and inflammation 9q,

Vascular pathology 2q

#### - Microbiology 17 questions

Basic concepts of microbiology 2q

Medical microbiology 15q

#### - Immunology and immunopathology 17questions:

Mucosal immune system and microbiota 3q

Adaptive immunity 7q

Immunopathology 7q

#### - Anatomical pathology (15q).

To pass the test you need to answer to at least 36 questions correctly with a minimum of correct answers in each module: general pathology (9 correct answers), microbiology (9 correct answers), Immunology and immunopathology (9 correct answers) and anatomical pathology (8 correct answers).

## Texts

Robbins and Cotran

Pathologic Basis of Diseases,  
9th edition, 2014; Elsevier

Cellular and molecular immunology

8th edition, 2011; Elsevier

Bauman RW



Microbiology with Diseases by Taxonomy  
4th edition, Pearson