

## 25430 - Cellular and molecular basis of human Pathophysiology

### Información del Plan Docente

<b>Academic Year</b>	2017/18
<b>Faculty / School</b>	127 - Facultad de Ciencias de la Salud 275 - Escuela Universitaria de Enfermería de Huesca 375 - Escuela Universitaria de Enfermería de Teruel
<b>Degree</b>	559 - Degree in Nursing 561 - Degree in Nursing 560 - Degree in Nursing
<b>ECTS</b>	6.0
<b>Year</b>	1
<b>Semester</b>	First semester
<b>Subject Type</b>	Basic Education
<b>Module</b>	---

### **1.General information**

#### **1.1.Introduction**

#### **1.2.Recommendations to take this course**

#### **1.3.Context and importance of this course in the degree**

#### **1.4.Activities and key dates**

### **2.Learning goals**

#### **2.1.Learning goals**

#### **2.2.Importance of learning goals**

### **3.Aims of the course and competences**

#### **3.1.Aims of the course**

#### **3.2.Competences**

### **4.Assessment (1st and 2nd call)**

#### **4.1.Assessment tasks (description of tasks, marking system and assessment criteria)**

### **5.Methodology, learning tasks, syllabus and resources**

#### **5.1.Methodological overview**

The methodology followed in this course is oriented towards achievement of the learning objectives. It favors the

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acquisition of knowledge related to microbiology, genetics and biology and its application in the study of human beings. A wide range of teaching and learning tasks are implemented, such as lectures, laboratory sessions and assignments.

Students are expected to participate actively in the class throughout the semester.

Classroom materials will be available via Moodle. These include a repository of the lecture notes used in class, the course syllabus, as well as other course-specific learning materials.

Further information regarding the course will be provided on the first day of class.

### **5.2.Learning tasks**

The course includes 6 ECTS organized according to:

- Lectures (5 ECTS): 50 hours.
- Laboratory sessions and Assignments (1 ECTS): 10 hours.

### **5.3.Syllabus**

The course will address the following topics:

#### **Section 1: MICROBIOLOGY IN HUMANS**

Topic 1. Introduction to microorganisms.

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Topic 2. Disinfection, sterilization and asepsis.

Topic 3. Morphology and physiology of bacteria. Main pathogenic bacteria for human.

Topic 4. Morphology and physiology of viruses. Main pathogenic virus for human.

Topic 5. Morphology and physiology of parasites. Main parasitism for human.

Topic 6. Action against the microorganisms

### **Section 2: MOLECULAR BIOLOGY OF THE CELL AND HUMAN GENETICS**

Topic 7. Cell membrane. Transport of Substances through the cell membrane

Topic 8. Cell adhesion and cellular communication

Topic 9. Cytoplasm. Nucleus

Topic 10. Nucleic acids and chromosomes

Topic 11. Synthesis and processing of nucleic acids and proteins

Topic 12. Regulation of gene expression

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Topic 13. The cell cycle. Cell aging and death. Molecular biology of cancer

### **5.4.Course planning and calendar**

For further details concerning the timetable, classroom and further information regarding this course please refer to the "Facultad de Ciencias de la Salud" website (<https://fcs.unizar.es/>)

### **5.5.Bibliography and recommended resources**

- Murray, Patrick R., Rosenthal, Ken S., Pfaller, Michael A.: Microbiología médica. 7ª ed. Barcelona, Elsevier, 2013
- Cooper, Geoffrey M., Hausman, Robert E.: La célula. 6ª ed. Madrid, Marbán, 2014
- Introducción a la biología celular. Bruce Alberts [et al.] 3ª ed. Buenos Aires, Editorial Médica Panamericana, 2011
- Passarge, Eberhard: Genética : Texto y atlas. 3ª ed. rev. y amp. Madrid, Editorial Médica Panamericana, 2009
- Solari, Alberto Juan: Genética humana : fundamentos y aplicaciones en medicina. 4ª ed. Buenos Aires, Editorial Médica Panamericana, 2011
- Silverthorn, Dee Unglaub. Fisiología humana : un enfoque integrado. 6ª ed. Buenos Aires, Editorial Médica Panamericana, 2014
- Biología molecular de la célula. Bruce Alberts [et al.] 5ª ed. Barcelona, Omega, 2010
- Rosa Fraile, Manuel de la, Prieto Prieto, José, Navarro Marí, José María.: Microbiología en ciencias de la salud : conceptos y aplicaciones. 3ª ed. Barcelona, Elsevier, 2011