

Academic Year/course: 2021/22

25430 - Cellular and molecular basis of human Pathophysiology

Syllabus Information

Academic Year: 2021/22

Subject: 25430 - Cellular and molecular basis of human Pathophysiology

Faculty / School: 127 - Facultad de Ciencias de la Salud

275 - Escuela Universitaria de Enfermería de Huesca

375 - Escuela Universitaria de Enfermería de Teruel

Degree: 559 - Degree in Nursing

560 - Degree in Nursing

561 - Degree in Nursing

ECTS: 6.0

Year: 1

Semester: First semester

Subject Type: Basic Education

Module:

1. General information

2. Learning goals

3. Assessment (1st and 2nd call)

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

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

4.2. Learning tasks

This is a 6 ECTS course organized as follows:

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

4.3. Syllabus

The course will address the following topics:

Section 1: MICROBIOLOGY IN HUMANS

Topic 1. Introduction to microorganisms.

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 humans.

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

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

4.4. Course planning and calendar

Further information concerning the timetable, classroom, assessment dates and other details regarding this course will be provided on the first day of class or please refer to the "Facultad de Ciencias de la Salud" website (<https://fcs.unizar.es/>)

4.5. 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