

Academic Year/course: 2021/22

## 29205 - Food Microbiology

### Syllabus Information

**Academic Year:** 2021/22

**Subject:** 29205 - Food Microbiology

**Faculty / School:** 229 - Facultad de Ciencias de la Salud y del Deporte

**Degree:** 441 - Degree in Human Nutrition and Dietetics

**ECTS:** 6.0

**Year:** 1

**Semester:** Second semester

**Subject Type:** Compulsory

**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. A wide range of teaching and learning tasks are implemented, such as lectures, laboratory sessions and seminars. Lectures and laboratory sessions are developed simultaneously in order to achieve a better understanding of the course.

#### 4.2. Learning tasks

This course is organized as follows:

- **Lectures** (30 hours). The basic theoretical knowledge of the subject is presented. Due to the space restrictions generated by the COVID 19 health alert, the theoretical classes will be taught on-line, synchronously telematically connected teachers and students through technologies that allow interaction (Google Meet type)
- **Laboratory sessions** (20 hours). They will take place in the Laboratory of Microbiology, in groups of approximately 14 students. Assistance is compulsory.
- **Seminars** (10 hours). Work done in seminars and practices will be presented in one of the seminar sessions. Assistance is compulsory.
- **Practical works supervised** (5 hours)
- **Exams**. 2 hours per call.

#### 4.3. Syllabus

This course will address the following topics:

##### Lectures

- The microbial world. Brief History of Microbiology.

- Microbial growth. Requirements. Growth phases.
- Microbial ecology.
- Control of microorganisms in food. Physical and chemical methods. Antimicrobial agents.
- Foodborne pathogens. Pathogenicity determinants. *Salmonella*. *Shigella*. *Escherichia*. *Yersinia*. *Campylobacter*. *Staphylococcus*. *Clostridium*. *Listeria*. *Bacillus*. *Brucella*. *Mycobacterium*.
- Toxigenic fungi: *Aspergillus*, *Fusarium*, *Penicillium*.
- Virus. Enterovirus. Norwalk virus. Rotavirus.
- Prions and transmission to human food.
- Food-and waterborne parasites.
- Food spoilage, microbial growth and alteration of fresh meat, fish and vegetable products.

#### Practice sessions

- Preparation of culture media.
- Staining and observation of microorganisms.
- Identification of microorganisms. Biochemical tests.
- Antimicrobial sensitivity study.
- Microbiological analysis of food

#### **4.4. Course planning and calendar**

Final exam:

- First call: Date to be determined by the center
- Second call: Date to be determined by the center

Further information concerning the timetable, classroom, office hours, assessment dates and other details regarding this course will be provided on the first day of class or please refer to the Faculty of Health and Sport Sciences website and Moodle.

#### **4.5. Bibliography and recommended resources**

<http://psfunizar10.unizar.es/br13/egAsignaturas.php?codigo=29205>