

**COURSE DATA****Data Subject**

|                      |                      |
|----------------------|----------------------|
| <b>Code</b>          | 43092                |
| <b>Name</b>          | Physiology of ageing |
| <b>Cycle</b>         | Master's degree      |
| <b>ECTS Credits</b>  | 4.0                  |
| <b>Academic year</b> | 2022 - 2023          |

**Study (s)**

| <b>Degree</b>                    | <b>Center</b>                      | <b>Acad. year</b> | <b>Period</b> |
|----------------------------------|------------------------------------|-------------------|---------------|
| 2141 - M.U. en Fisiología 12-V.2 | Faculty of Medicine and Odontology | 1                 | Second term   |

**Subject-matter**

| <b>Degree</b>                    | <b>Subject-matter</b> | <b>Character</b> |
|----------------------------------|-----------------------|------------------|
| 2141 - M.U. en Fisiología 12-V.2 | 5 - Optional subject  | Optional         |

**Coordination**

| <b>Name</b>             | <b>Department</b> |
|-------------------------|-------------------|
| BORRAS BLASCO, CONSUELO | 190 - Physiology  |
| VIÑA RIBES, JOSE        | 190 - Physiology  |

**SUMMARY**

The teaching of the Physiology of aging has as a general objective the knowledge of physiological modifications of the organism and of the physical and chemical laws that govern these functions; the acquisition of the necessary methodology for its study; and the development of skills in the maintenance of health, prevention and treatment of a growing sector of the population, the elderly.

In this subject, the functional modifications of different organs and systems of the organism with aging and the changes that they experience in elderly men and women are studied.

The Physiology of aging has great importance for the study of preventive and curative medicine.



## PREVIOUS KNOWLEDGE

### Relationship to other subjects of the same degree

There are no specified enrollment restrictions with other subjects of the curriculum.

### Other requirements

## OUTCOMES

### 2141 - M.U. en Fisiología 12-V.2

- Students should apply acquired knowledge to solve problems in unfamiliar contexts within their field of study, including multidisciplinary scenarios.
- Students should be able to integrate knowledge and address the complexity of making informed judgments based on incomplete or limited information, including reflections on the social and ethical responsibilities associated with the application of their knowledge and judgments.
- Students should communicate conclusions and underlying knowledge clearly and unambiguously to both specialized and non-specialized audiences.
- Students should demonstrate self-directed learning skills for continued academic growth.
- Students should possess and understand foundational knowledge that enables original thinking and research in the field.
- Know how to write and prepare presentations to present and defend them later.
- To acquire a critical attitude that allows you to make reasoned judgments and defend them with rigor and tolerance.
- Search, order, analyze and synthesize scientific information (databases, scientific articles, bibliographic repertoires), selecting the pertinent to focus current knowledge on a topic of scientific interest in Physiology.
- Assess the need to complete the scientific training, in languages, computer science, ethics, etc., attending conferences or courses and/or carrying out complementary activities, self-evaluating the contribution that the performance of these activities implies for their comprehensive training.
- Recognize the modifications of the different devices and systems during aging and describe the different applications for the prevention and treatment of diseases associated with aging.

## LEARNING OUTCOMES

-To understand and describe the functions of the systems and apparatus of the healthy human organism in their different levels of organization, as well as their modifications associated with aging.



- To know the modifications of the different devices and systems during aging.
- To differentiate the different applications for the prevention and treatment of diseases associated with aging.
- To apply different approaches in aging research.
- To assess the physiological changes that occur during aging.
- To develop intervention strategies aimed at treating the modifications pathophysiological that occur during aging.

## DESCRIPTION OF CONTENTS

### 1. Introduction to aging

Concept of aging  
Theories of aging  
Bioamarkers of aging and longevity  
Oxidative stress parameters  
Genetics and aging

### 2. Interventions in aging

Physiological interventions  
Physical exercise  
Nutritional interventions  
Genetic interventions

### 3. Diseases related to aging

Frailty  
\* Sarcopenia  
Alzheimer's disease



## WORKLOAD

| ACTIVITY                             | Hours         | % To be attended |
|--------------------------------------|---------------|------------------|
| Theory classes                       | 24,00         | 100              |
| Tutorials                            | 3,00          | 100              |
| Development of individual work       | 20,00         | 0                |
| Study and independent work           | 15,00         | 0                |
| Readings supplementary material      | 7,00          | 0                |
| Preparation of evaluation activities | 15,00         | 0                |
| Preparing lectures                   | 6,00          | 0                |
| Resolution of case studies           | 10,00         | 0                |
| <b>TOTAL</b>                         | <b>100,00</b> |                  |

## TEACHING METHODOLOGY

- Theoretical classes of participative master lesson.
- Conferences of experts in the subjects.
- Debate and guided discussion on the work carried out.
- Face-to-face and electronic tutorials with teachers.

## EVALUATION

### Evaluation system:

- Written exam consisting of development questions: evaluation up to 10 points.

Minimum passing grade: 5 points.

## REFERENCES

### Basic

- Guyton AC, Hall JE (2011). Tratado de Fisiología Médica. 13ª ed. Madrid. Ed. Elsevier.
- Paola S. Timiras (1997) Bases fisiológicas del envejecimiento y geriatría. 2ª ed. (traducida). Barcelona. Ed. Masson.



- Enlace de interés: Sociedad Española de Geriatria y Gerontología [www.segg.es/](http://www.segg.es/)

