# ANIMAL PHYSIOLOGY
(approved in Council of Department 8-june-2017)

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<tr>
<th>MODULE</th>
<th>CONTENT</th>
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<tr>
<td>Fundamental Biology</td>
<td>Animal Physiology</td>
<td>2nd</td>
<td>4rd</td>
<td>6 ECTS</td>
<td>Required (Mandatory)</td>
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**LECTURER(S)**

Dr. Laura García Rejón *(T *, P *)
Dr. Maria Alba Martínez Burgos *(T *, P *)

(T *: Theory; P *: Practice)

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**DEGREE WITHIN THE SUBJECT IS TAUGHT**

Degree in Human Nutrition and Dietetics

**TUTORING AND MEETINGS**

Dr. Maria Alba Martínez Burgos *(malbamgr.es)*:
Monday, Tuesday and Thursday: 9-11h, in the office 2 of Sciences Faculty, against class A-10front A-10. (April-June)

Dr. García Rejón *(lagarcia@ugr.es)*:
Monday, Tuesday and Friday: 12-14h, in the office of Sciences Faculty, 2nd floor of the building biology. Office 4. (February-April)

**PREREQUISITES and/or RECOMMENDATIONS (if necessary)**

It is recommended to have studied the subjects of Biology and Cell Biology and Biochemistry Macromolecular

**BRIEF ACCOUNT OF THE SUBJECT PROGRAMME**


**GENERAL AND PARTICULAR ABILITIES**

CG4 - To know the basic principles of the structure and functionality of biological systems.

• CB3 - That students have the ability to gather and interpret relevant data (usually within their area of study) to make judgments that include a reflection on relevant social, scientific or ethical issues
• CBS - Students have developed those learning skills necessary to undertake further studies with a high degree of autonomy
• CT1 - Ability to analyze and synthesize.
• CT2 - Ability to organize and plan.
• CT3 - Ability to apply knowledge in practice and solve problems.
• CT5 - Critical reasoning.
• CT6 - Ethical commitment, with equal opportunities, non-discrimination based on sex, race or religion and attention to diversity.
• CT7 - Sensitivity to environmental issues.
• CT8 - Capacity for decision making.
• CE10 - Ability to describe, analyze and modify phenomena and systems of interest in Biotechnology through the application of the principles of Animal Physiology.
• CE11 - To be able to collaborate in the design / proposal of actions of biotechnological base in processes related to human health and / or the improvement of the animal production and to participate actively in the execution of these proposals.
• CE16 - Understand the general principles that regulate the metabolism and the mechanisms for its adaptation to changing environmental and physiological situations.

OBJECTIVES (EXPRESSED IN TERMS OF EXPECTED RESULTS OF THE TEACHING PROGRAMME)

The student will know / understand:

• The basic concepts and procedures of Animal Physiology
• The principles operating in the functioning of animals, including humans, in relation to its surroundings
• The comparative aspects of physiology of various groups: manifestations of unit and various aspects of the physiology of animals
• The nature and importance of the mechanisms involved in the regulation / adaptation of the different functions in animals.
• The possible applications of the knowledge gained in relation to various professional fields of biotechnology: human health and welfare, animal production, management and maintenance of biodiversity research in this field, transmission of specific knowledge, etc.

DETAILED SUBJECT TOPICS

THEORETICAL UNITS

THEORETICAL AGENDA:

THEMATIC UNIT 1. GENERAL INTRODUCTION TO ANIMAL PHYSIOLOGY

ITEM 1. basic and fundamental concepts of animal physiology. Animal functions. The cell membrane as support functions relationship and keeping animals.

THEMATIC UNIT 2: BASES Functional NERVOUS SYSTEM

ITEM 2. Elements and basic functional organization of the nervous system. Neurons and glial cells. The central and peripheral nervous system. The protection elements.


THEMATIC UNIT 3: PERCEPTION OF MIDDLE internal and external environment: sensory mechanisms
ITEM 4. Sensory receptors. General mechanisms of transduction. somatosensory sensitivity: skin receptors, proprioceptors and nociceptors

ITEM 5. The special senses. Physiology of hearing and balance. Physiology of taste and smell. Physiology of vision / photoreception

THEMATIC UNIT 4: effector systems / ENGINES

ITEM 6. Types of effectors. Physiology of the different types of muscle: skeletal, smooth, heart.

THEME 5 UNIT: SENSORY-MOTOR INTEGRATION AND BRAIN FUNCTION COMPLEX

ITEM 7. Integration somatic motor and vegetative. The different levels and integration centers.


THEMATIC UNIT 6: ENDOCRINE PHYSIOLOGY


THEMATIC UNIT 7: vegetative functions


Unit 8: REPRODUCTIVE FUNCTION


UNIT 17. Physiology of pregnancy, childbirth and lactation. Applications to birth control, induced breeding, etc. Applications to improving animal production.

PRACTICAL AGENDA:

Practice 1. sensory and motor physiology. Study of sensory and motor reflexes receivers.

Practice 2. circulatory and respiratory physiology. Study of blood pressure and pulse. Changes to the exercise. Measurement of lung volumes and respiratory capacities.


5. Practice Exhibition / discussion of results obtained in laboratory practices.
SEMINARS:
Study and exhibition of scientific publications related to the content of the subject. Preparation and problem solving and practical / clinical cases.

SYSTEM FOR ASSESSING THE ACQUISITION OF THE COMPETENCES AND KNOWLEDGE

EVALUATION

1. Continuous Assessment

Ordinary Call

• Evaluation of the theoretical part of the subject (SE1): 70% of the overall grade. It will include in this section: two partial oral exams / exams (both eliminatory and corresponding to the first and second half of the course, respectively), the one of several controls, the attendance and participation of the student in class (SE4).
• Evaluation of practical activities (SE2): 20% of the overall assessment. From this grade, 60% will be assigned to the practical exam and 40% will be assigned to the student's attendance, attitude and participation in them.
• Evaluation of group work (seminars, clinical cases, etc.) (SE3, SE5, SE6): up to 10% of the overall assessment.
• To pass the subject it will be necessary to obtain at least 50% of the maximum grade in each of (1) and (2).

Extraordinary summons

• In this call the student will necessarily examine the part(s) (theoretical and / or practical).
• The student will have the option to appear to the part(s) he deems appropriate (theoretical and / or practical)
• The student who is present to a party, will lose the grade obtained previously in that part.
• The student who is not present to a party, will keep the grade reached in the ordinary call in that part.
• Weighting: theoretical part 70%, practical part (including seminars and group work) 30%.

2. Final evaluation only

"In order to be eligible for the final final evaluation, the student, in the first two weeks of the course, or within two weeks of enrollment if this has occurred after the beginning of the course, will request, through of the electronic procedure, to the Director of the Department, claiming and accrediting the reasons for not being able to follow the continuous assessment system. In the case of undergraduate courses with teaching shared by several Departments, the student will request it from any of the Departments involved. The Director of the Department to which the application was addressed, after hearing the lecturer responsible for the subject, will resolve the request within 10 working days. After said period has elapsed without the student having received an express written response, the application shall be considered as estimated. In the event of a refusal, the student may file an appeal with the Rector within one month, who may delegate to the Dean or Director of the Center, as appropriate, exhausting the administrative route. Notwithstanding the foregoing, exceptional and exceptional reasons may be requested (work reasons, health status, disability, mobility programs, representation or any other similar circumstance), and may request a single final evaluation outside the aforementioned deadlines, under the same administrative procedure. "The final evaluation will consist of two tests, which will be carried out on the same day:
• Examination of theoretical contents: 75% of the grade.
• Examination of practical contents: 25% of the grade."
# BIBLIOGRAPHY

## PRINT BOOKS ON PHYSIOLOGY

### KEY REFERENCES:
- CONTI F. *Medical Physiology*. McGraw-Hill / Interamericana de Mexico, 2010

### FURTHER READING:
- MADRID J.A. y ROL DE LAMA A. (drs.) *Cronobiología*, Editec@Red, 2006

### RECOMMENDED INTERNET LINKS

[http://www.ugr.es/local/fisioaai](http://www.ugr.es/local/fisioaai)