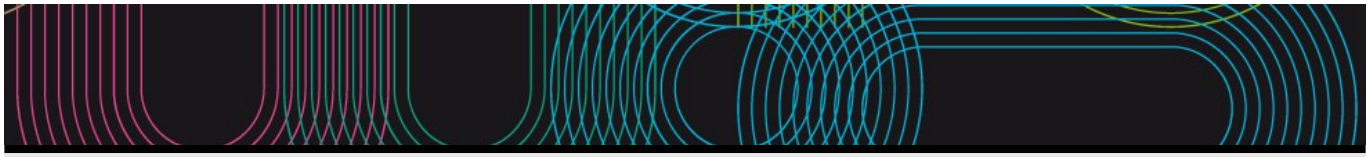

IDENTIFYING DATA				
Animal physiology II				
Subject	Animal physiology II			
Code	V02G031V01307			
Study programme	Grado en Biología			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	6	Mandatory	3rd	2nd
Teaching language	#EnglishFriendly Spanish Galician			
Department				
Coordinator	Soengas Fernández, José Luis			
Lecturers	Conde Sieira, Marta Míguez Miramontes, Jesús Manuel Soengas Fernández, José Luis			
E-mail	jsoengas@uvigo.es			
Web				
General description	English Friendly subject: International students may request from the teachers: a) resources and bibliographic references in English, b) tutoring sessions in English, c) exams and assessments in English Animal Physiology is a compulsory subject in the Biology degree, therefore its knowledge is essential in the comprehensive training of a Biology graduate. The contents of this subject try to explain the basic fundamentals of the functioning of an animal organism, trying to know all the activities (physical-chemical reactions) of the cells, tissues and organs (whose structure and constituent elements have already been studied previously) that make up the body of animals. Likewise, the subject deals in detail with how these systems serve the different animals to adapt to the environment. Because physiological processes are extremely complex, the study and teaching of physiology must be approached considering the different functional systems separately, taking into account, however, that each function represents a partial part of the functional unit that the system conforming an animal. The time table of the subject can be consulted at the link: http://bioloxia.uvigo.es/es/docencia/grado-en-biologia/horarios			

Training and Learning Results	
Code	
A2	Students should know how to apply their knowledge to their work or vocation in a professional way. They also should have the competences that are usually proved through the elaboration and defence of arguments and the resolution of problems within their study field.
A3	Students should prove ability for information-gathering and interpret important data (usually within their study field) to judge relevant social, scientific or ethical topics.
B2	Manage scientific-technical information using diverse and reliable sources. Analyze data and documents and interpret them critically and rigorously, including considerations on their social relevance and in the professional field of Biology.
B3	Apply the knowledge acquired in the degree and use the scientific-technical instrumentation and CIT in contexts of Biology and/or related to the professional practice.
B4	Draft and write reports, documents and projects related to Biology. Proceed to their presentation and debate in the teaching and specialized areas, highlighting the competences of the degree.
C3	Perform and interpret molecular, physicochemical and biological analyses, including samples of human origin. Conduct assays and functional tests under normal and abnormal conditions.
C6	Understanding and integrate the functioning of living beings (cellular, tissue, organ and individual level), explaining their homeostatic and adaptive responses.
C9	Identify resources of biological origin and assess their efficient and sustainable use in order to obtain products of interest. Propose and implement improvements in production systems.
C10	Identify biological and biotechnological processes and their potential applications, in particular in health, agri-food and environmental fields.

D1	Understand the meaning and use of the gender perspective in the different fields of knowledge and in professional practice with the aim of achieving a fairer and more equal society.
D2	Communicate speaking and in writing in Galician.
D3	Commitment to sustainability and the environment. Equal, sensible and efficient use of resources.
D4	Collaborate and work in teams or multidisciplinary groups, promote negotiation skills and the ability to reach agreements.

Expected results from this subject

Expected results from this subject	Training and Learning Results			
Identify the mechanisms and functions of the cardiovascular, respiratory, excretory/osmoregulatory, digestive, and reproductive systems	A2 A3	B2 B3 B4	C3 C6 C9 C10	D1 D2 D3 D4
Identify the regulation and integration of animal functions, as well as functional adaptations to the environment in different groups of animals	A2 A3	B2 B3 B4	C3 C6 C9 C10	D1 D2 D3 D4
Recognize the functioning of the animal as an integrated whole, reinforcing the role of coordination and integration systems	A2 A3	B2 B3 B4	C3 C6 C9 C10	D1 D2 D3 D4

Contents

Topic	
Chapter I: Cardiovascular Physiology (Professor Soengas)	Topic 1. General characteristics of cardiovascular systems Topic 2. The heart Topic 3. Regulation of cardiac activity. Topic 4. Arterial, venous and capillary circulation. Lymphatic system Topic 5. Regulation of blood pressure and circulation
Chapter II: Physiology of respiration (Professor Soengas)	Topic 6. General characteristics of breathing Topic 7. Aquatic breathing Topic 8. Air breathing Topic 9. Diffusion and transport of respiratory gases Topic 10. Regulation of breathing
Chapter III: Excretory function and osmoregulation (Professor Soengas)	Topic 11. General characteristics of excretion Topic 12. Formation of urine Topic 13. Osmoregulation Topic 14. Regulation of acid-base balance
Chapter IV: Digestive Physiology (Professor Míguez)	Topic 15. Functional anatomy of the digestive system of vertebrates Topic 16. Motility and digestive secretions Topic 17. Digestion and absorption Topic 18. Regulation of intake. hunger and satiety
Chapter V: Reproduction (Professor Míguez)	Topic 19. General characteristics of reproduction Topic 20. Male reproductive function in vertebrates Topic 21. Female reproductive function in vertebrates. Topic 22. Fertilization, gestation, birth and lactation

Planning

	Class hours	Hours outside the classroom	Total hours
Lecturing	16	35	51
Lecturing	20	43	63
Seminars	2	16	18
Laboratory practical	12	6	18

*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

Methodologies

	Description
Lecturing	Lectures will be taught during the second semester until completing the scheduled hours. They will be held in the corresponding classroom, with the total number of registered students present. They will discuss, with the help of power point presentations, the theoretical foundations of the subject. Teaching materials will be available to students on the Tele-teaching Platform

Lecturing	Lectures will be taught during the second semester until completing the scheduled hours. They will be held in the corresponding classroom, with the total number of registered students present. They will discuss, with the help of power point presentations, the theoretical foundations of the subject. Teaching materials will be available to students on the Tele-teaching Platform
Seminars	-Topics related to the subject will be proposed for students to prepare, organized in groups of 2-3. -In the first face-to-face meeting with each type B group, the planning of the elaboration of the different topics will be carried out. Before the last meeting, the groups will deliver a report with the topics covered. In the last meeting of group B the students will present each topic (10 minutes).
Laboratory practical	Students will carry out 4 practical sessions in the laboratory of 3 hours each. Attendance at them is mandatory to pass the course. At the end of the practical classes, different groups will prepare a results report to be evaluated

Personalized assistance

Methodologies	Description
Lecturing	They will be interactive and will allow you to establish personalized reinforcement actions. Students may request individualized tutorials to resolve doubts and problems via email and/or the University's virtual classroom system
Laboratory practical	During the practical classes, the teachers will give individual attention to each student for the correct understanding of the experimental objectives and the methodology or techniques used. Once the task is completed, each student or group of students will see their work supervised by the teacher. Students may request individualized tutorials to resolve doubts and problems via email and/or the University's virtual classroom system
Seminars	Seminars will be interactive and will allow you to establish personalized reinforcement actions. Students may request individualized tutorials to resolve doubts and problems via email and/or the University's virtual classroom system
Lecturing	They will be interactive and will allow you to establish personalized reinforcement actions. Students may request individualized tutorials to resolve doubts and problems via email and/or the University's virtual classroom system

Assessment

	Description	Qualification	Training and Learning Results
Lecturing	Partial exam 1 (25% of the score): chapters I and II The exam will be made up of: Objective questions Development questions To pass the exam, a minimum mark of 5 points (out of 10) must be obtained. A minimum mark of 4 points (out of 10) is required to pass the subject. Self-assessment test. The students will have several tests available on the tele-teaching platform in order to facilitate the self-assessment of knowledge and the completion of the exam. Its fulfilment by the students will be autonomous and totally voluntary. There will be 2 tests in relation to the following contents: Test 1. Chapter I (Circulation) Test 2. Chapter II (Breathing). The self-assessment tests DO NOT GIVE marks in the evaluation of the subject	25	A2 B2 C6 D1 A3 C9 D2 C10 D3 D4
Lecturing	Partial exam 2 (35% of the score): chapters III, IV and V The exam will be made up of: Objective questions Development questions To pass the exam, a minimum mark of 5 points (out of 10) must be obtained. A minimum mark of 4 points (out of 10) is required to pass the subject. Self-assessment test. The students will have several tests available on the tele-teaching platform in order to facilitate the self-assessment of knowledge and the completion of the exam. Its fulfilment by the students will be autonomous and totally voluntary. There will be 3 tests in relation to the following contents: Test 1. Chapter III (excretion-osmoregulation). Test 2: Chapter IV (digestive) Test 3: Chapter V (reproduction). The self-assessment tests DO NOT GIVE marks in the evaluation of the subject	35	A2 B2 C6 D1 A3 C9 D2 C10 D3 D4

Seminars	The topics developed will be sent to the teacher in charge before the last meeting of the tutorial group. On that day there will be a 10-minute presentation in which the following will be evaluated: -Quality of the written memory presented (organization, writing, adequacy of the bibliography, focus and depth adjusted to the subject) -Quality of the oral presentation (adequacy to the time , quality of the information presented in the figures, oral expression, ability to transmit information, mastery of technical language) -Answers to the questions presented	30	A2 B3 C6 D1 A3 B4 C9 D2 C10 D3 D4
Laboratory practical	Attendance to practical classes is mandatory. At the end of them, a practiccal classes report will be delivered by each of the subgroups that will be organized in each practical group.	10	A2 B3 C3 D1 A3 B4 C6 D2 C9 D3 C10 D4

Other comments on the Evaluation

1) Continuous evaluation

To pass the subject, students must carry out all the evaluable activities.

Practical classes and seminars: Attendance at scheduled practice sessions and seminars is mandatory and necessary to pass the subject. To pass these activities, a minimum score of 5/10 points must be achieved in each of them. The justification of non-attendance to the practical sessions and seminars will not exempt students from carrying them out in another group, provided that the calendar allows it.

Theory exam. To pass this part it will be necessary to obtain 5 points in each of the two scheduled exams. However, it will be possible to pass the subject if a minimum score of 4 is achieved in each one of the theory exams, offsetting the practical and seminar scores until reaching 5 points. In case of not reaching the minimum score (4) in the theory exams, the final score for the subject will correspond to that score (the scores for practices and seminar will not be taken into account).

Second opportunity and following courses. Activities passed on the first opportunity will be saved for the second opportunity. It will not be possible to recover the practices or the seminars. Thus, the scores of these parts will be those obtained during the period of their completion in the course.

Repeating students. They will only have to evaluate the activities (practices, seminar) not passed in the previous courses, keeping the scores obtained in said activities.

2) Overall evaluation

Students may request the global evaluation that will be carried out on the official dates of first and second opportunities. This evaluation will allow reaching 100% of the subject score and is structured into three parts:

- Score of practices carried out in the period established in the calendar. 10%

- Score of the seminar carried out in the period established in the calendar. 30%

- Score of the global theory exam, which will be carried out on the dates set in the academic calendar for the official exams of the subject. 60%

The academic calendar can be consulted at the following link:http://bioloxia.uvigo.es/gl/docencia/horarios

The exam calendar can be consulted at the following link: http://bioloxia.uvigo.es/gl/docencia/exam

Sources of information

Basic Bibliography

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Randall, D., French, K., **Eckert Animal Physiology 5ª edicion**, WH Freeman, 2021

Moyes, C.D., Schulte, P.M., **Principios de Fisiología animal**, Pearson, Addison and Wesley, 2007

Butler, P., Brown, A., Stephenson, G., Speakman, J., **Animal Physiology, an environmental perspective**, Oxford University Press, 2021

Guyton, A.C. y Hall, J.E, **Tratado de Fisiología Médica edicion 14**, Interamericana-MacGraw-Hill, 2021

Rhoades, R.A. y Tanner, G.A., **Fisiología Médica**, Masson-Little, Brown, 2017

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Koeppen, B.M., Stanton, **Berne & Levy Physiology**, Elsevier, 2017

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Complementary Bibliography

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Randall, D., Burggren, W., French, K., **Fisiología animal.**, McGraw-Hill/Interamericana, 1998

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Thibodeau, G.A. y Patton, K.T., **Anatomía y Fisiología**, Mosby-Doyma, 1995

Tresguerres, J.A.F., **Fisiología Humana**, McGraw-Hill Interamericana,

Willmer, P., Stone, G., Johnston, I, **Environmental physiology of animals, second edition**, Blackwell science, 2000

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Berne, R.M., Levy, M.N, **Fisiología**, Harcourt-Mosby,

Dantzler, W .H, **Comparative physiology**, Oxford University Press,

Martín Cuenca, E, **Fundamentos de fisiología**, Thomson-Paraninfo,

Schmidt-Nielsen, K, **Animal physiology .Adaptation and Environment**, Cambridge University Press, 1997

Hall, J.E., Hall, M.E., **Guyton and Hall textbook of medical physiology 14th ed.**, Elsevier, 2021

Butler, P.J., **Animal physiology: an environmental perspective**, Oxford University Press, 2021

Recommendations

Subjects that continue the syllabus

Biotechnology applied to animal production/V02G031V01410

Subjects that it is recommended to have taken before

Animal physiology I/V02G030V01502

Other comments

For the correct follow-up of the subject, the student must register at the beginning of the course on the tele-teaching platform.

In the registration, it is important that you include the e-mail address that you use regularly, in order to receive information from your teaching staff in a personalized way