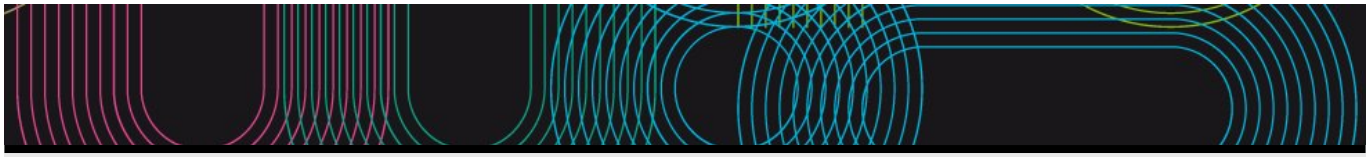
Universidade Vigo

Subject Guide 2015 / 2016



IDENTIFYING DATA				
Physiology: Exercise physiology I				
Subject	Physiology: Exercise physiology I			
Code	P02G050V01104			
Study programme	(*)Grao en Ciencias da Actividade Física e do Deporte			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	6	Basic education	1st	1st
Teaching language	Spanish Galician English			
Department				
Coordinator	González Matías, Lucas Carmelo García Soidan, José Luís			
Lecturers	García Soidan, José Luís González Matías, Lucas Carmelo Pérez Treus, Sergio Taboada Iglesias, Yaiza			
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Web				
General description	This subject pretends to introduce the student in the basic concepts of the human physiology that are applicable to the exercise and to the sport.			

Competencies	
Code	
B1	Conceptualization and identification of the object of study of the Sciences of the Physical Activity and the Sport.
B3	Knowledge and compression of the physiological factors and biomechanics that determine the practice of the physical activity and the sport
B5	Knowledge and comprehension of the effects of the practice of the physical exercise on the structure and function of the human body.
B10	Knowledge and comprehension of the foundations of the sport.
B16	Aptitude to promote and evaluate the formation of lasting and autonomous habits of practice of the physical activity and of the sport.
B18	Aptitude to apply the physiological beginning, biomechanics, behavioral and social, to the different fields of the physical activity and the sport.
B19	Aptitude to evaluate the physical condition and to prescribe physical exercise orientated towards the health
B20	Aptitude to identify the risks that stem for the health of the practice of physical inadequate activities.

Learning outcomes	
Expected results from this subject	Training and Learning Results
Conceptualization and identification of the object of study of the Sciences of the Physical Activity and of the Sport.	B1
Knowledge and compression of the physiological and biomechanical factors that condition the practice of the physical activity and the sport.	B3
Knowledge and understanding of the effects of the practice of the physical exercise on the structure and function of the human body.	B5
Knowledge and understanding of the foundations of the sport.	B10
Capacity to promote and evaluate the training of long time habits and autonomous of practice of the physical activity and of the sport.	B16

Capacity to apply the physiological, biomechanical, comportamental and social principles to the different fields of the physical activity and the sport.	B18
Capacity to evaluate the physical condition and prescribe physical exercise oriented to the health.	B19
Capacity to identify the risks that derive for the health of the practice of unsuitable physical activities.	B20

Contents

Topic	
1. Cellular physiology and of the nervous system.	1) Introduction, history and general appearances. Meaning of the Physiology. 2) Membrane plasmatic. Functional characteristics and transport. 3) electrical Phenomena of membrane. 4) Transmission of the nervous impulse. 5) Physiology of the neuron. Functional organisation of the nervous system. 6) sensory Systems. 7) Control engine.
2. Physiology of the skeletal muscle.	8) Types of muscles. Structure and function of the grooved muscle. Mechanics of the muscular contraction. 9) Mechanisms of excitation and muscular contraction.
3. Physiology of the endocrine system and metabolism.	10) Hormones. 11) Glands of internal secretion. 12) Exogen hormones. 13)Endocrine System and physical activity.
4. Energetic systems and physiological assessment of the exercise.	14) Energetic metabolism. 15) Sources of energy. 16) Anaerobic threshold and energetic continuum 17) Maximum oxygen consumption

Planning

	Class hours	Hours outside the classroom	Total hours
Laboratory practises	15	15	30
Integrated methodologies	4	10	14
Troubleshooting and / or exercises	6	12	18
Group tutoring	5	5	10
Master Session	20	40	60
Multiple choice tests	2.5	0	2.5
Reports / memories of practice	0	15	15

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

Methodologies

	Description
Laboratory practises	Practical application of the subjects studied to theoretical level. They will realise diverse practices in group, for a greater fixation of the concepts related with the nervous system, the muscular contraction, the metabolic roads and the hormonal control of the exercise, as well as distinct proofs of assessment of the exercise.
Integrated methodologies	Practical exercises based in the resolution of problems through the TIC.
Troubleshooting and / or exercises	Formulation, analysis, resolution and debate of a problem or exercise related with the theoretical subjects seen in the classroom.
Group tutoring	In these activities will orient and will guide the process of learning of the *alumnado through the discussion *grupal of the theoretical subjects explained in class.
Master Session	Exhibition of the contents of the session.

Personalized attention

Methodologies	Description
Group tutoring	The attention will realise in groups reduced, in the corresponding dispatch to each one of the two educational that give the matter, according to the subject of the theoretical program that treat .

Assessment

	Description	Qualification	Training and Learning Results

Laboratory practises	The student presents the result obtained in the preparation of a document on the thematic of the subject in which they reflect the characteristics of the work carried out. The students have to describe the tasks and procedures developed, show the results obtained or observations realised, as well as the analysis and treatment of data.Observations realised, as well as the analysis and treatment of data.	Aprobado ou suspenso. Poderá supoñer un incremento dun 20 por cento da nota, unha vez superada a teoría, con máis de 5 pontos en cada un dos dous parciais 20	B5 B10 B16 B18 B19 B20
Master Session	Proofs for the evaluation of the practices purchased, that include enclosed questions with different alternative of answer (true/false, multiple election). The students select an answer between a number limited of possibilities.	0-80	B1 B3 B18 B19 B20

Other comments on the Evaluation

The realisation of the practical is compulsory and approve them is a requirement to approve the matter.

The evaluation of the theory will be by means of an examination written, constituted mainly by questions of type test, although it also will be able to contain questions of short answer or questions of development of a subject. It is necessary to obtain a punctuation of 5 or more points on 10, in each one of the two partial examinations theorists, to be able to approve the matter.

In the second and following announcements, will save the note of the practices in the case that these were approved and, in the theoretical part, will keep the criteria to approve the matter of the 1ª announcement

Sources of information

Lopez Chicharro J., **FISIOLOGÍA DEL ENTRENAMIENTO AERÓBICO**, Madrid: Panamericana, 2013,

Bernardot, D., **Nutrición deportiva avanzada**, 2ª ed. Madrid: Tutor, 2013,

Calderon Montero J., **Fisiología Humana aplicada a la actividad física.**, Madrid: Panamericana, 2012,

Powers. S., **Exercise Physiology: Theory and Application to Fitness and Performance.**, Lippicot. 2012,

Guyton y Hall., **Tratado de fisiología médica.**, 12ª ed., Elsevier. 2011,

Wilmore, J. y Costill, D., **Fisiología del esfuerzo y del deporte**, 6ª. ed. Barcelona: Paidotribo, 2010,

Berne, Robert M., **Fisiología**, 6ª ed.Barcelona : Elsevier, D.L. 2009,

López Chicharro, José, **Fisiología del ejercicio.**, 3ª. ed. Madrid: Panamericana, 2006,

Pocock, Gillian, **Fisiología humana : la base de la medicina**, 2ª ed. Barcelona : Masson, 2005,

Recommendations

Subjects that continue the syllabus

Physiology: Exercise physiology II/P02G050V01401