

ID	3607
Curricular Unit	Biochemistry
Regent	Cristina Paula Fidalgo de Negreiros Monteiro Bento
Learning Outcomes	<p>This curricular unit aims to give basic instruction in biochemistry, in the perspective of the study of the molecular phenomena underlying the structure and function of the human body, with special emphasis on Human Movement. The students should be able to: identify and classify the different elements and molecules that constitute the human body and to describe their main functions; predict some behavior of biomolecules in water according to their chemical structure and properties; recognize the main participants in the processes of molecular regulation; describe metabolic processes by which the human body can obtain, store and use energy, in an integrated form, in particular during the practice of physical exercise; describe mechanisms of adaptation to regular physical effort and identify factors that limit physical performance; identify reactive oxygen species and relate them to the practice of physical exercise.</p>
Syllabus	<p>The following subjects are explored: origin of life on earth; elemental composition of the human body; macro, micro and trace elements and their main functions; the cell: attributes, structure and functions; basic notions on organic chemistry and chemistry and physics in aqueous solutions; biomolecules: structure, classification and function of carbohydrates, lipids, proteins and nucleic acids; protein synthesis from genetic information, classification and action of enzymes, hormones and neurotransmitters; bioenergetics: metabolism of carbohydrates, lipids and proteins and the physiological integration of these biochemical metabolisms in different situations of practice of physical exercise; oxygen reactive substances in the development of living beings, in the practice of physical exercise and in pathology.</p>
Evaluation	<p>In the lectures, contents are transmitted by using the expository teaching method with the support of slides. In the lecture-practical classes we privilege the adoption of a work group task methodology for the resolution of problems concerning subjects presented both in lecture and lecture-practical classes. Specific topics presented in lecture classes are opened for discussion. Laboratory classes are also included. Classification is obtained by performing a written exam covering all subjects presented in the lecture and lecture/practical classes or by performing one written test (70 % of final score), a laboratory class report (20% of final score) and six work sheets (10% of the final score). In the latter, the student is approved if a minimum score of 9.5 (score from 0 to 20) is obtained in all the elements of evaluation.</p>

Bibliography

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