

<b>ID</b>	508
<b>Curricular Unit</b>	Biochemistry
<b>Regent</b>	Cristina Paula Fidalgo Negreiros Monteiro Bento
<b>Learning Outcomes</b>	Basic education in biochemistry, in the perspective of the study of the molecular phenomena underlying the structure and function of the biological systems, namely on the biomolecular processes related to human movement. Contribution to the multiple knowledge about the basis of human performance.
<b>Syllabus</b>	After a brief summary on the evolution of Biochemistry, the following subjects are developed: elementary composition of the human body; macro, micro and trace elements, their nutritional importance and influence on motricity; basic notions on organic and inorganic chemistry; basic notions on chemistry and physics in Biochemistry; enzymology; bio molecules: structure, function and preventive nutrition of carbohydrates, lipids, proteins and nucleic acids. Metabolism of carbohydrates, lipids and proteins at rest and during exercise; sequential usage of substrates and limiting factors of physical performance; hormonal response to exercise; physiological integration of biochemical metabolisms. Oxygen free radicals in exercise.
<b>Evaluation</b>	<p>In lectures the expositive teaching method is used with the support of slides. In practical classes a work group methodology is adopted for the resolution of problems concerning theoretical and practical subjects. Specific topics presented in lecture classes are opened for discussion. Laboratory classes are also included.</p> <p>In continuous assessment classification is obtained by a written test about the subjects presented in theoretical and practical classes (90%) and presence with elaboration of a report about laboratory classes. In final assessment Classification is obtained by a written exam about the subjects presented in the lecture and lecture/practical classes. The student is approved and exempt from an oral exam if a minimum score of 10 (from 20) is obtained. Between 8 and 10 he must perform an oral exam. ITis not approved if the score is lower than 7.5. The syllabus, key-words list, the planning of lessons, the slides and the problems sheets are available on the internet.</p>

**Bibliography**

Devlin, T.M. (1986). Textbook of Biochemistry with Clinical Correlations. Ed. Devlin, T.M., 2<sup>a</sup> ed., New York: John Wiley and Sons.

Holm, J.R. (1986). Fundamentals of General Organic and Biological Chemistry. New York: John Wiley and Sons.

Laires, M.J. (2008). Bioquímica, 4<sup>a</sup> ed., Cruz Quebrada: Faculdade de Motricidade Humana.

Manso, C., Freire, A. & Azevedo, M. (1986). Introdução à Bioquímica Humana, 3<sup>a</sup> ed., Lisboa: Fundação Calouste Gulbenkian.

Newsholme, E.A. & Leech, A.R. (1983). Biochemistry for the Medical Sciences. John Wiley and Sons.

Quintas, A., Freire, A.P., Halpern, M.J. (2008). Bioquímica - organização molecular da vida. LIDEL, Lisboa.