ID	2812
Curricular Unit	Sport Physiology
Regent	João Nuno Seabra da Costa Rasoilo
Learning Outcomes	Be able to demonstrate knowledge of the main physiologic mechanisms of acute and chronic adaptation to systematic sports training. Be able to analyze the physiologic demands of different sports. Know how to apply physiologic and functional evaluation techniques.
Syllabus	Basic and applied physiology. Historical events. Acute and chronic adaptations to exercise. Sports training and characterization of the training load. Genetics of physical fitness. Energy metabolism and cellular mechanisms of ATP re-synthesis. Main physiologic support systems to energy transfer. Mechanisms of the O2 supply chain. VO2 kinetics, intensity domains and intensity levels. Evaluation of the power and capacity of the energy systems: ergometry; measuring techniques of physiologic variables and parameters; evaluation of anaerobic and aerobic energy production. Analysis of sports demands: physiologic classification criteria. Physiologic training control. Training, muscular fatigue and overtraining. Environmental factors: hypobaric environment and altitude training; hyperbaric environment, underwater exercise and sports diving; temperature, thermoregulation and acclimatization; circadian rhythms and jetlag influences. Warm-up and cool-down. Training, tapering and detraining.
Evaluation	The teaching methodology follows a logic of knowledge development centred on the students, based on theoretical and lab work. Written examination and course work: presentation and discussion of thematic reports.

Bibliography	Astrand P-O, Rodahl K, Dahl H A, Stromme S B, Textbook of Work Physiology, Fourth Edition, Human Kinetics, Champaign, 2003. MacDougall J D, Wenger H A, Green H J, Physiological Testing of the High-Performance Athlete. 2nd ed., Human Kinetics, Champaign, 1991. Wilmore J H, Costill D L, Physiology of Sport and Exercise, Third Edition, Human Kinetics, Champaign, 2004. Gore C J, ed. Physiological Tests for Elite Athletes, Human Kinetics, Champaign, 2000. Heck H, Schulz H, Bartmus U, Diagnostics of Anaerobic Power and Capacity. European Journal of Sport Science, 2003. 3(3): p. 1-23. McArdle, W D, Katch F I, Katch V L, Fisiologia do Exercício: Energia, Nutrição e Desempenho Humano. 4ª ed., Rio de Janeiro: Guanabara Koogan, 1996.