

ID	3630
Curricular Unit	Sport Physiology
Regent	João Nuno Seabra da Costa Rasoilo
Learning Outcomes	<p>Be able to demonstrate knowledge of the main physiologic mechanisms of acute and chronic adaptation to systematic sports training.</p> <p>Be able to analyze the physiologic demands of different sports.</p> <p>Know how to apply physiologic and functional evaluation techniques.</p>
Syllabus	<p>Basic and applied physiology.</p> <p>Historical events.</p> <p>Acute and chronic adaptations to exercise.</p> <p>Sports training and characterization of the training load.</p> <p>Genetics of physical fitness.</p> <p>Energy metabolism and cellular mechanisms of ATP re-synthesis.</p> <p>Main physiologic support systems to energy transfer.</p> <p>Mechanisms of the O₂ supply chain.</p> <p>VO₂ kinetics, intensity domains and intensity levels.</p> <p>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.</p> <p>Analysis of sports demands: physiologic classification criteria.</p> <p>Physiologic training control.</p> <p>Training, muscular fatigue and overtraining.</p> <p>Environmental factors: hypobaric environment and altitude training; hyperbaric environment, underwater exercise and sports diving; temperature, thermoregulation and acclimatization; circadian rhythms and jetlag influences.</p> <p>Warm-up and cool-down.</p> <p>Training, tapering and detraining.</p>
Evaluation	<p>The teaching methodology follows a logic of knowledge development centred on the students, based on theoretical and lab work.</p> <p>Written examination and course work: presentation and discussion of thematic reports.</p>

Bibliography

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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.

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