

Comenius University in Bratislava, Faculty of Medicine

Course unit information form		
Code: L-VL-025	Course: PHYSIOLOGY 1	
Study branch: General Medicine		
Guaranteed by: ass. prof. I. Béder, MD, PhD.		Provided by: Institute of Physiology
Term of course unit: 2 nd class WS	Course format (lectures, seminars, practicals): Hours per course: 60 h lectures + 60 h practical lesson	Credits: 9
Prerequisites: Biophysics, Chemistry, Biology and Human Genetics, Histology, Anatomy		
Forms of study check and completion of course unit: Study evaluation during semester (e.g. test, essay ...): 100 % Final evaluation (e.g. examination, final paper ...):		
Aim of the course: Acquiring sound knowledge of blood physiology, membrane, nerve and muscle physiology, physiology of respiration, gastrointestinal tract, nutrition, energetics and metabolic rate.		
Brief syllabus: Blood - blood plasma, blood elements, acid-base balance, osmotic pressure, blood groups, blood coagulation, erythropoiesis. Excitable tissues - receptors, membrane potential, nerve excitability, synapses, reflex and the reflex arc, functional properties of skeletal and smooth muscle. Respiration - functions of the respiratory system, ventilation, exchange of respiratory gases, the lung volumes and capacities, transport of O ₂ and CO ₂ , breathing and regulation of the blood pH, influence of changed atmospheric pressure, regulation of breathing. The digestive system - mastication, swallowing, stomach motility, the small and large intestine motility, the function of digestive juices and their secretion, digestion and absorption of nutrients, the function of the liver, regulation. Metabolism and nutrition - energy intake and expenditure, basal and total metabolic rate, caloric value of foods, caloric equivalent of 1L of O ₂ , respiratory quotient, O ₂ -debt, metabolism of carbohydrates, fats, proteins and their regulation, basics of nutrition, principles of balanced diet.		
Recommended literature: Béder, I. et al.: Manual of Practical Physiology, Comenius University, Medical Faculty, Bratislava, 1998, 177p. Berne, R.M., Levy M. N.: Principles of Physiology, 2 nd Ed. St. Louis, Mosby-Year Book 1996, 795 p. West, J. B. (ed.): Best and Taylor's Physiological Basis of Medical Practice, 12 th Ed. Baltimore, Williams and Wilkins 1990, 1170 p. Ganong, W. F.: Review of Medical Physiology, A Lange Medical Book. London, Prentice Hall 1995, 781p. Guyton, A. C., Hall, J. E.: Human Physiology and Mechanisms of Disease, 6 th Ed. Philadelphia, W.B. Saunders Company 1996, 737 p. Despopoulos, A., Silbernagl, S.: Color Atlas of Physiology, 4 th Ed. Stuttgart, Thieme 1991, 379 p.		
Language of education: English		Signature of Guarantee: Updated on: 31/05/2005