

Higher education institution: <i>Slovak Medical University in Bratislava</i>	
Faculty: <i>Faculty of Medicine</i>	
Course code: <i>GM 012A</i>	Course title: <i>Physiology (1)</i>
Type, extent and method of educational activity: <i>Number of hours per semester:</i> <i>Lectures: 56/4 hours per week</i> <i>Practices: 56/4 hours per week</i>	
Number of credits: <i>9 credits</i>	
Recommended semester/trimester study: <i>3. th</i>	
Level of higher education study: <i>1. + 2. level</i>	
Prerequisite courses: <i>Anatomy, Medical biophysics</i>	
Requirements for completion of the course: <i>Method of assessment and completion of the course: active attending of lectures and practical exercises, oral evaluation.</i> <i>During semester - 30%</i> <i>During examination period - 70%</i> <i>Final test: minimum threshold of success: 60%. Evaluation: Evaluation: A: 95% - 100%, B: 88% - 94% C: 77% - 87%, D: 66% - 76%, E: 60% - 65%.</i> <i>Student workload is 113 hours</i>	
Learning outcomes: <i>Acquiring sound knowledge of blood physiology, membrane, nerve and muscle physiology, physiology of respiration, gastrointestinal tract, nutrition, energetics and metabolic rate.</i>	
Brief content of the course (syllabus): <i>Blood – blood plasma, blood elements, acid-base balance, osmotic pressure, blood groups, blood coagulation, erythropoiesis.</i> <i>Excitable tissues – receptors, membrane potential, nerve excitability, synapses, reflex and the reflex arc, functional properties of skeletal and smooth muscle.</i> <i>Respiration – functions of the respiratory system, ventilation, exchange of respiratory gases, the lung volumes and capacities, transport of O₂ and CO₂, breathing and regulation of the blood pH, influence and changed atmospheric pressure, regulation of breathing.</i> <i>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.</i> <i>Metabolism and nutrition – energy intake and expenditure, basal and total metabolic rate, caloric value of foods, caloric equivalent of 1L of O₂, respiratory Quotient, O₂-debt, metabolism of carbohydrates, fats, proteins and their regulation, basics of nutrition, principles of balanced diet.</i>	
Recommended literature: <i>Béder, I. et al.: Practical Physiology, Slovak Medical University, Medical Faculty, Bratislava 2015. 154s.</i> <i>Levy, M.N., Koepfen, B.M., Stanton, B. A. Berne a Levy Principles of Physiology. 4th ed. St. Louis: Mosby, 2006. 836p. ISBN 0-3230-3195-1.</i> <i>Berne, R.M. et al. Physiology. 5th ed. St. Louis: Mosby, 2005. 1024 p. ISBN 0-3230-3390-3.</i> <i>Gyuton, A. C., Hall, J. E. Textbook of Medical Physiology. Philadelphia: W. B. Saunders, 2005. 1104p. ISBN 0721602401.</i> <i>Pocock, G., Richards, Ch.D. Human Physiology. The Basis of Medicine. Oxford: Oxford University Press, 2004. 734 p. ISBN 0-19-85827-6.</i> <i>Schmidt, R.F., Thews, G., Lang, F. Physiologie des Menschen. 29. Aufl. Berlin : Springer, 2005. 994. ISBN 3-540-21882-3.</i> <i>Despopoulos, A., Silbernagl, S. Color Atlas Physiology. 5th ed. Stuttgart : Thieme, 2003. 430 p. ISBN 1588900617.</i>	
Language requirements:-	
Notes: <i>The course runs in Slovak and English language.</i>	
Course assessment <i>Assessed students in total: 0</i>	

A	B	C	D	E	FX
0%	0%	0%	0%	0%	0%
Lecturers: <i>Doc. MUDr. Igor Béder, CSc., mim. prof.</i> <i>MVDr. Vladimíra Koštiaková</i> <i>MUDr. Katarína Zvarová, PhD.</i> <i>MUDr. Oľga Gonščáková</i>					
Date of last modification: 6.6.2016					
Supervised by: <i>prof. MUDr. Peter Šimko, CSc</i>					

Higher education institution: <i>Slovak Medical University in Bratislava</i>	
Faculty: <i>Faculty of Medicine</i>	
Course code: <i>GM 012B</i>	Course title: <i>Physiology (2)</i>
Type, extent and method of educational activity: <i>Number of hours per semester:</i> <i>Lectures: 56/4 hours per week</i> <i>Practices: 56/4 hours per week</i>	
Number of credits: <i>9 credits</i>	
Recommended semester/trimester study: <i>4. th</i>	
Level of higher education study: <i>1. + 2. level</i>	
Prerequisite courses: <i>GM 012A Physiology (1)</i>	
Requirements for completion of the course: <i>Method of assessment and completion of the course: active attending of lectures and practical exercises, oral evaluation, test.</i> <i>During semester - 30%</i> Exam. <i>A, B, C, D, E, Fx</i> <i>Student workload is 88 hours</i>	
Learning outcomes: <i>Acquiring sound knowledge of cardiovascular physiology, body temperature regulation, renal physiology, endocrinology, sensory physiology and physiology of the central nervous system.</i>	
Brief content of the course (syllabus): <i>Cardiovascular system – physiological properties of the cardiac muscle, cardiac cycle, heart sounds, arterial pulse, electrocardiography, regulation, blood flow in vessels, blood pressure, transcapillary exchange, lymph circulation, regional blood circulations.</i> <i>Thermoregulation – body temperature and its biorhythms, heat production and losses, mechanisms of thermoregulation.</i> <i>Kidneys – body fluids and their ion-structure, glomerular filtration rate and tubular processes, acid-base balance, formation of urine, regulation of renal functions.</i> <i>Endocrine glands – mechanisms of hormonal action, function of the hypothalamus – pituitary system, functions of hormones.</i> <i>Special senses – receptors, their classification and function, specialization of receptors, receptor potentials – vision, hearing, taste, olfaction, thermoreception, nociception.</i> <i>Physiology of central nervous system – sensation and preception, regulation of movements, higher nervous functions – memory, learning, speech.</i>	
Recommended literature: <i>Béder, I. et al.: Practical Physiology, Slovak Medical University, Medical Faculty, Bratislava 2015. 154 p.</i> <i>Levy, M.N., Koepfen, B.M., Stanton, B. A. Berne a Levy Principles of Physiology. 4th ed. St. Louis: Mosby, 2006. 836p. ISBN 0-3230-3195-1.</i> <i>Berne, R.M. et al. Physiology. 5th ed. St. Louis: Mosby, 2005. 1024 p. ISBN 0-3230-3390-3.</i> <i>Gyuton, A. C., Hall, J. E. Textbook of Medical Physiology. Philadelphia: W. B. Saunders, 2005. 1104p. ISBN 0721602401.</i> <i>Despopolus, A., Silbernagl, S. Color Atlas Physiology. 5th ed. Stuttgart: Thieme, 2003. 430p. ISBN 1588900617.</i> <i>Ganong, W. F. Review of Medical Physiology. 22nd ed. A Lange Medical Book. New York: McGraw-Hill, Appleton a Lange, 2005. 896p. ISBN 0071440402.</i> <i>Pocock, G., Richards, Ch. D. Human Physiology. The Basis of Medicine. Oxford: Oxford University Press, 2004. 734p. ISBN 0-19-85827-6.</i> <i>Schmidt, R. F., Thews, G., Lang, F. Physiologie des Menschen. 29. Aufl. Berlin: Springer, 2005. 994. ISBN 3-540-21882-3.</i>	
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