

**PROGRAM OF LECTURES IN PHYSIOLOGY WITH PATHOPHYSIOLOGY  
FOR THE STUDENTS OF THE 4-YEARS MEDICAL SCHOOL  
(2015/2016)**

	<b>DATES</b>	<b>SUBJECT</b>	<b>TEACHER</b>
1	2 hours 19.10.2015 <b>This lecture starts at 11.45 a.m. Monday</b>	Introduction to physiology and pathophysiology.	ACJ/TZ
2	3 hours 26.10.2015 Monday	Principles of neurophysiology Generation and function of action potential in nerve cells, dendrites, axons, pacemaker cells, cardiac and smooth muscle cells. Mechanism of transmission of the action potential. Physiology of synapses. Mechanisms of signal transmission through electrical and chemical synapses.	ESajSul
3	3 hours 02.11.2015 Monday	Physiology of the sensory system. Receptors and receptive fields. Somatic and visceral sensation. Deep sensation. Physiology of pain and pain inhibition.	ESajSul
4	3 hours 09.11.2015 Monday	Physiology of the motor system. Motor activity of the spinal cord. Functional organization of spinal motor centres. Alpha, beta and gamma motoneurons. Motor and sensory innervation of the skeletal muscle. Muscle spindles as sensory organs. The gamma loop, its role in the generation of movements. Organization of the reflex arch. Spinal reflexes. Autonomic functions of the spinal cord.	EK
5	3 hours 16.11.2015 Monday	Control of spinal motor mechanisms by brain stem centres. Vestibular system. Maintenance of body equilibrium. Role of basal ganglia and cerebellum in the control of motor functions. Clinical aspects of their dysfunction – parkinsonian syndrome, chorea, vertigo, ataxia.	TZ
6	3 hours 23.11.2015 Monday	Neurotransmitter systems in the brain: classical, peptide and unconventional neurotransmitters. Neuroanatomy of these systems, regulation of biosynthesis of individual neurotransmitters, of their release and inactivation. Brain and body functions regulated by individual neurotransmitters. Disturbances of body functions resulting from the impairment of individual neurotransmitters systems.	ESajSul
7	3 hours 30.11.2015 Monday	Learning and memory. Neurobiology of speech. Cognitive disorders (delirium, amnesia, dementia).	BS
8	3 hours 02.12.2015 Wednesday	Biological rhythms. Physiology of sleep and wakefulness. Physiology of the higher psychic functions.	BS
9	3 hours 07.12.2015 Monday	Dysfunctions of cerebral circulation. Hemorrhagic and ischemic stroke.	EK
10	3 hours, 09.12.2015 Wednesday	Characteristics of function and structure of the autonomic nervous system. Synaptic transmission through the autonomic ganglia. Autonomic innervation of the cardiovascular and respiratory system. Examples of autonomic reflexes.	EK
11	3 hours 14.12.2015 Monday	Physiology of skeletal and heart muscle fibers. Structure and function of the contractile systems, electromechanical coupling in skeletal and heart muscle. Physiology of smooth muscle fibers. Mechanism of excitation and contraction of smooth muscle.	EK
	3 hours 16.12.2015 Wednesday	MCQ - instead of lecture	

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12	3 hours 11.01.2016 Monday	Hemodynamic cycle of the heart. Regulation of rhythm and force of contraction. Heart sounds.	ACJ
13	3 hours 13.01.2016 Wednesday	Pathophysiology of the most common heart valve diseases.	AW
14	3 hours 18.01.2016 Monday	Pathophysiology of acute and chronic heart failure.	TZ
15	3 hours 20.01.2016 Wednesday	Principles of blood flow in the cardiovascular system. Arterial blood pressure, vascular resistance, venous circulation.	<b>ACJ</b>
16	3 hours 27.01.2016 Wednesday	Short and long-term regulation of blood pressure. Arterial hypertension.	<b>MŚm</b>

**Teachers:** ACJ – Agnieszka Cudnoch-Jędrzejewska, MD, PhD; KK – Kaja Kasarekło, MSc, PhD;  
EK- prof. Ewa Koźniewska, MSc, PhD; BS – prof. Bogdan Sadowski, MD, PhD;  
ESajSul - prof. Elżbieta Sułkowska, MSc, PhD; ESS – prof. Ewa Szczepańska-Sadowska, MD, PhD;  
MŚm - Maciej Śmietanowski, PhD; AW – Agnieszka Wsół, MD, PhD;  
TZ – Tymoteusz Żera, MD, PhD;

**Please note that lectures  
on Monday are held from 10:30 a.m. till 13:00 p.m. in room 142 (Didactic Center)  
and on Wednesday from 12.00 at noon till 14:30 p.m. in room 234 (Didactic Center).  
This includes 15 min for breaks.**