

Course Title	Neurobiology
Number of Lectures	23 (46 h)
Number of Seminars	12 (24 h)
Language of the Course	English
Name of the Lecturer, occupation, scientific degree	Associate Professor Alexander Sidorov, PhD in Biology
Lecturer's personal page	http://www.bio.bsu.by/physioha/sidorov_english.html
Goals	To give basic understanding of cell-to-cell communication and basic principles of brain organization and function
Prerequisites	Human Anatomy, Physiology, Developmental Biology, Molecular Biology, Biochemistry, Biophysics
Contents	<p>Introduction. Cell junctions. Transport across cell membrane. Electrical signaling in the cells. Ionic basis of rest potential and action potential. Synaptic transmission. Signaling. Neurotransmitters. Neuromodulators.</p> <p>Structural organization of human nervous system. Development of the nervous system. Neurophysiology of the sensory systems. Neurophysiology of the motor systems. Integrative functions of the brain. Cellular basis of behavior.</p>
Teaching methodology	Lectures, essays and seminars
Recommended literature	<ol style="list-style-type: none"> 1. John G. Nicholls. <i>From Neuron to Brain: 5-th Ed.</i> Sinauer Associates, 2012. 621 p. 2. Kandel E. R. <i>Principles of neural science.</i> New York, 2000. 3. Hammond C. <i>Cellular and Molecular Neurobiology.</i> Academic Press, 2001. 4. O. von Bohlen und Halbach O. <i>Neurotransmitters and Neuromodulators.</i> Darmstadt, 2002. 5. Hille B. <i>Ionic channels of excitable.</i> Sunderland, 1992. 6. <i>Neurotransmitters, Drugs and Brain Function</i> / Ed. R.A. Webster. Chichester, 2001. 7. Noback C. R. <i>The Human Nervous System: Structure and Function.</i> Humana Press, 2005. 8. Sanes D. H. <i>Development of the Nervous System.</i> Academic Press, 2005. 9. Van De Graaff, K. M. <i>Human Anatomy.</i> McGraw-Hill Companies, 2002. 10. Sidorov A.V. <i>Physiology of intercellular communication</i> / A.V. Sidorov. Minsk, 2008 (in Russian).
Examination methodology	Oral examination: 80%. Essay: 20%
Recommended for	Six-year undergraduate students (Master's Degree)