

Module name:	Biophysics	
ECTS:	2	
Learning effects	Course outcomes:	
Knowledge:	1	Student knows physical laws governing structure, function and behaviour of the living organism
	2	Student knows basic physical principles behind measurement and imaging techniques in biology, veterinary and medicine
Skills:	1	Student utilises knowledge acquired during the biophysics course to explain influence of physical factors on living organism
	2	Student utilises knowledge acquired during the biophysics course to evaluate risks for himself and the patient associated with the use of advanced imaging techniques
	3	Student utilises knowledge acquired during the biophysics course to understand aspects of future learning
Competences:	1	Student utilises objective scientific information sources to further enhance his knowledge
Objectives of the module required to obtain learning effects:	<p>During the course student acquires basic and latest information in the field of biophysics: description of physical world, membrane transfer and potential, principles governing interaction of living organism with material world, principles of thermodynamics and energy transfer in living organisms, basics of subatomic interactions, knowledge about physical principles utilised in diagnostics in veterinary and medicine. Lectures cover introduction to biophysics, description of basic units and scientific method in the experiment; function of the cell membrane and physical processes governing membrane transport, protein folding and activity; basics of bioelectricity and electrical measurements in veterinary and medicine; applicability of Newtonian physics to the living organism; elasticity; basics of fluidics, thermodynamics and energy transfer through the living organism; electromagnetic radiation in living world, measurement of the electromagnetic radiation; basics of the acoustics and acoustic-based imaging techniques; basics of radiation, radiobiology and x-ray imaging techniques; bio-magnetism and related medical imaging; selected topics from current physics.</p>	
Assessment methods:	Written exam	