Course unit title:	Physiology		
Course unit code:	NUR109		
Type of course unit:	Compulsory		
Level of course unit:	Bachelor		
Year of study:	1		
Semester when the unit is delivered:	2 (Spring)		
Number of ECTS credits allocated :	5		
Name of lecturer(s):	Dr. Evanthia Asimakopoulou		
Learning outcomes of the course unit:	1. Describe the basic functioning of the most important physiological systems in the human body 2. Describe the homeostatic mechanisms and their impact on the functions of the various organs and organ systems in humans 3. Explain the mechanisms by which the various physiological systems in the human body interact with each other 4. Explain how physiological parameters are measured in humans. 5. Explain the basic physiological processes with regard to role they play in overall health (physiological basis of illnesses) 6. Extract conclusions from data		
Mode of delivery:	Face-to-face		
Prerequisites:	None	Co-requisites:	None
Recommended optional program components:	None		
Course contents:	• **Introduction to Physiology:** Cells, tissues, organs, organ systems. The internal environment and homeostasis • **Cell membranes:** Transport (active and passive) across cell membranes. Endo- and exocytosis. Diffusion and osmosis • **Blood and its constituents**: Red blood cells, white blood cells and lymphocytes. Homeostasis – blood vessel constriction and coagulation • **Circulation and the cardiovascular system:** Electrical activity of the heart and its propagation through the heart. Electrocardiogram • **The cardiac pump:** Cardiac muscle, chambers of the heart, valves. Cardiac sounds and cardiac cycle. Measuring cardiac output. Regulation of heart beat. • **Respiratory system:** Respiratory movements. Ventilation and perfusion. Transport of gases in the blood and exchange at the tissues • **Kidney function and anatomy:** Reabsorption and secretion of various solutes. • **Digestive system**: Structure and innervation. Control of gastrenteric movement. Gastrenteric smooth muscle • **Nervous system**: Organization and structure. Central and peripheral nervous system. Microscopic structure of neurons. Transmission of information • **General sensory system**: Principles of sensory physiology – sensory receptors, coding of information (type and positioning of sensation)		

	• **Special senses – optical system**: Structure of the eye and normal vision. Vision impairment • **Autonomic nervous system:** Sympathetic and parasympathetic system. Autonomic functions and the hypothalamus • **Synapses:** Neuromuscular synapses. Resting membrane potential and action potentials. Synaptic transmission • **Muscles:** Muscle structure. Cross-bridge cycle. Isometric and isotonic contractions. Regulation of contraction and relaxation. Skeletal and smooth muscle • **Endocrine system:** Synthesis, storage and secretion of hormones. • **Reproductive physiology**
Recommended and/or required reading:	None
Textbooks:	Guyton and Hall, **Textbook of Medical Physiology 13th Edition** (Greek edition), Parisianos Editions, 2017
References:	1. R.M. Berne and M.N. Levy, ***Physiology Principles*** (Greek edition), Crete Editions, 2011 2. J. G. McGeon, Συνοπτική φυσιολογία του ανθρώπου, Ιατρικές Εκδόσεις Π. Χ. Πασχαλίδης, 2009 3. Roger Watson, Ανατομία και Φυσιολογία για Νοσηλευτές (12η έκδοση), Εκδόσεις Λαγός, 2007
Planned learning activities and teaching methods:	The course is delivered to the students by means of lectures, conducted with the help of computer-based presentations. Lecture notes and presentations are made available for students to use in combination with the recommended textbooks.
Assessment methods and criteria:	• Participation: 10% • Test: 40% • Final Exam 50%
Language of instruction:	Greek
Work placement(s):	No