

Course Title	Physiology I				
Course Code	NURS 103				
Course Type	Compulsory				
Level	BSc (Level 1)				
Year / Semester	1 st / Fall				
Instructor's Name	Dr Georgios Charalambous, Dr George Miltiadous				
ECTS	4	Lectures / week	2	Laboratories/week	-
Course Purpose	The aim of the course is to familiarize students with the concepts and principles of physiology of the human body. The course focuses on functions and mechanisms of the human body by which the various organic systems interact with each other, from simple cellular to complex systemic functions indicating the physiological parameters in humans. At the end of the course, students will be able to describe the basic physiological mechanisms and the role they play in homeostasis and maintaining health.				
Learning Outcomes	<p>By the end of the course, students should be able to:</p> <ul style="list-style-type: none"> - Name and describe the basic concepts of cell physiology: homeostasis and internal environment, cell membrane. - Describe the basic structure of the cell membrane and explain transmembrane transport processes. - Name the composition of the blood and describe the production of hematopoietic cells - Explain the process of hemostasis and coagulation, the defense mechanism and blood types - Describe the heart cycle and the automatic stimulation system of the heart - Interpret the waves on the normal electrocardiogram - Analyze the mechanisms that regulate heart function - Describe the mechanisms of regulating blood circulation - Describe the transport of oxygen and carbon dioxide between the lungs and the body's cells - Analyze the system of control and regulation of respiration 				
Prerequisites	None		Co-requisites	None	
Course Content	<ul style="list-style-type: none"> - Introduction to Physiology. The internal environment and homeostasis. Basic principles of cell physiology - Movement through the cell membrane. Diffusion, Osmosis, Active and facilitated transport - Blood components and functions - Immunity, allergy and blood types 				

	<ul style="list-style-type: none"> - Hemostasis and blood clotting - The pumping function of the heart - Rhythmic heart stimulation - cardiac energy potential and cardiac excitability - Heart sounds and heart cycle. Electrocardiogram - Blood circulation: regulation of pressure, flow and resistance - Local and nervous regulation of blood flow - Lung ventilation and pulmonary circulation - Gas exchange. Oxygen and carbon dioxide transport between the lungs and the body's cells - Control system and regulation of respiration
Teaching Methodology	<p>The course is delivered to the students through lectures, using computer-based presentations programmes. Case Studies, Discussion, Questions / Answers are also used depending on the content of the lecture. Lecture notes and presentations are available online for use by students in combination with textbooks. Relevant material published in international scientific journals are also used to follow the latest developments related to the subject of the course.</p>
Bibliography	<p>(a) Textbooks:</p> <p>Hall, J. E., Hall, M. E., & Guyton, A. C. (2021). <i>Guyton and Hall Textbook of Medical Physiology</i>. Elsevier.</p> <p>Hall, J. E., Hall, M. E., & Guyton, A. C. (2017). <i>Guyton and Hall, Φυσιολογία του Ανθρώπου και Μηχανισμοί των Νόσων 13η έκδοση</i>, Εκδόσεις Παρισιάνου. (In Greek)</p> <p>(b) References:</p> <p>Watson, R. (2011). <i>Anatomy and Physiology for Nurses</i>. ELSEVIER</p> <p>Hull, R. (2011). <i>Anatomy and Physiology for Therapists and Healthcare Professionals</i>. TheWrite Idea</p> <p>Berne, R.M. & Levy, M.N. (2011) <i>Αρχές Φυσιολογίας</i>. Εκδόσεις Κρήτης (In Greek)</p> <p>McGeon, J. G. (2008). <i>Συνοπτική φυσιολογία του ανθρώπου</i>. Ιατρικές Εκδόσεις Π. Χ. Πασχαλίδης (In Greek)</p> <p><i>Through the services of the university library, access is provided to electronic repositories of scientific journals and articles, indicatively ProQuest, Cambridge University Press and Science Direct with thousands of scientific journals in the fields of health sciences.</i></p>
Assessment	<p>The assessment of the course consists of the coursework (midterm exam, student participation) and final exam.</p>

	<p>Mid-Term Exam: 40%. A written midterm exam will be comprised by multiple choice questions, short answer and open questions.</p> <p>Student Participation: 10%. The class participation includes formative assessments with interactive problem solving questions.</p> <p>Written Final Exam: 50%. A written final exam will be comprised by multiple choice questions, short answer and open questions.</p>
Language	Greek / English