Jordan University of Science and Technology

Faculty of Medicine

Doctor Of Medicine (Md) Department

MED132 General Physiology - JNQF Level: 7

Second Semester 2022-2023

Course Catalog
3 Credit Hours. This is an introductory course in general physiology that covers the fundamental concepts and principles of human physiology. This course is designed to introduce and familiarize first-year medical students with all organ systems by studying their functionality at the cellular, tissue, and organ levels of organization, the overarching theme of the course will be that of systems integration. We will initially investigate how individual organ systems function as standalone functional units. As the semester progresses, we will integrate our understanding of these systems to build a picture of the organism level of organization. The course is designed to provide the students with basic knowledge of homeostasis, the internal environment, and examples of homeostasis mechanisms of major body systems. It will also cover the physiology of body fluids and electrolytes, the renal system, cardiovascular system, digestive system, respiratory system, endocrine glands, the reproductive system, the physiology of nerve and muscle, including membrane potential, action potential, nerve fiber excitability, muscle contraction, and impulse transmission across the synapse and neuromuscular junction, and finally the physiology of the central nervous system and peripheral nervous systems.

Text Book	
Title	Fundamental of Human Physiology by Sherwood
Author(s)	Sherwood
Edition	4th Edition
Short Name	Ref #1
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
Ref # 2	Textbook of Medical Physiology	Guyton and Hall	13th Edition	

Instructor	
Name	**Prof. Mukhallad Al-Janabi**
Office Location	-M2 L0
Office Hours	
Email	mukmoh@just.edu.jo

Class Schedule & Room
Section 1: Lecture Time: Mon, Wed : 11:30 - 13:00 Room: مدرج د. سعد حجازي Section 2: Lecture Time: Sun, Tue : 14:00 - 15:30 Room: مدرج الفاروق Section 3: Lecture Time: Sun, Tue : 08:30 - 10:00 Room: مدرج د. سعد حجازي Section 4: Lecture Time: Mon, Wed : 08:30 - 10:00 Room: MIDDLE HALL Section 5: Lecture Time: Mon : 13:00 - 14:30 Room: مدرج الفاروق

Tentative List of Topics Covered		
Weeks	**Topic**	**References**
Week 1	Introduction	
Week 1	Introduction to physiology and homeostatic mechanisms of major functional systems	From **Ref # 2**
Week 2	Body water- total body water and body fluid compartments	From **Ref # 2**
Week 2	- Basic principles of osmosis and osmotic pressure & Edema	From **Ref # 2**
Week 3	Introduction to renal physiology	From **Ref #1**
Week 3	- Origin of bioelectric potentials	From **Ref #1**
Week 4	Chemical synaptic -Transmission and synaptic potentials	From **Ref #1**
Week 4	Cardiovascular system physiology: Overview of the cardiovascular system , Electrical activity of the heart	From **Ref #1**
Week 5	Hemodynamics, blood pressure and blood flow	From **Ref #1**
Week 5	Overview of endocrine system	From **Ref #1**

Week 6	Hormones of pituitary gland	From **Ref #1**
Week 6	Hormones of thyroid gland	From **Ref #1**
Week 7	Introduction to reproductive system	From **Ref #1**
Week 7	Overview of hematological system: Red and white blood cells ; function and the role of hemoglobin	From **Ref #1**
Week 8	Blood grouping , Platelet structure & function & hemostasis, White blood cells and their functions	
Week 8	Overview: functions and organization of nervous system, Cerebral cortex areas and their functions	From **Ref #1**
Week 9	Basal ganglia, cerebellum, thalamus and hypothalamus	From **Ref #1**
Week 9	Spinal cord	From **Ref #1**
Week 10	Overview of autonomic nervous system	From **Ref #1**
Week 10	Overview of the respiratory systems, Alveolar and pulmonary ventilation	From **Ref #1**
Week 11	Gas diffusion and transport of oxygen and carbon dioxide, Control of breathing	From **Ref #1**
Week 11	Molecular basis of skeletal muscle contraction of skeletal muscle contraction	From **Ref #1**
Week 12	Neuromuscular junction	From **Ref #1**
Week 12	Overview of digestive system	From **Ref #1**

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	**Course Outcome Weight (Out of 100%)**	**Assessment method**
Define the basic biological processes required for homeostasis maintenance and discuss the significance of homeostasis to the overall survival of the organism. [1PLO1] [1L7K1]	10%	
Describe the structure of major human organs and explain their role in the maintenance of healthy individuals. [1PLO1] [1L7K1]	30%	
Explain the interplay between different organ systems and how organs and cells interact to maintain biological equilibrium in the face of a variable and changing environment [1PLO1] [1L7K1, 1L7S1, 1L7S2]	30%	

Correlate specific structural features of human cells, tissues, organs, and systems of the human body with their normal functions, and identify the changes that occur during human development, aging, and disease. [1PLO1] [1L7K1, 1L7S1, 1L7S2]	30%	

Relationship to Program Student Outcomes (Out of 100%)													
PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11	PLO12	PLO13	PLO14
100													

Relationship to NQF Outcomes (Out of 100%)		
L7K1	L7S1	L7S2
60	20	20

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