

Course Title	Physiology I				
Course Code	DES105				
Course Type	Compulsory				
Level	Bachelor of Dentistry				
Year / Semester	1st year/1st semester				
Teacher's Name	TBA				
ECTS	6	Lectures / week	3hrs / 13 weeks + exam week	Lab hours / week	2 hrs / 13 weeks
Course Purpose and Objectives	<p>Purpose: The course is intended to give the students a broad overview of specific structures of the human body and their related physiology. The course aims to familiarize students with the basic concepts of physiological processes and provide an understanding of the physiological function of the human body. All lectures, laboratories, group discussions, and clinical problems emphasize integrations of basic science concepts with clinical significance and applications.</p>				
Learning Outcomes	<p>Upon successful completion of this course students should be able to:</p> <ul style="list-style-type: none"> • Describe cell membrane transport principles, function of ion channels, and membrane polarization of excitable cells. • Explain the physiological anatomy of the muscles and apply their knowledge to analyze the components of muscle contraction • Describe the remodeling of muscle to match contraction • Describe the molecular and cellular composition of blood. • Explain the principles of blood haemostasis and coagulation. • Discuss hypothalamus pituitary axis and regulation of hormone release • Discuss the various aspects of thyroid function, and its importance to human life, growth and development • Describe the importance of the pancreatic gland, its secretions and the relationship with glucose homeostasis • Describe the female and male reproductive system, anatomic differences, hormonal control, production of oocytes and sperm, sexual differentiation • Describe the physiology of the Gastrointestinal track, Alimentary track structures, GT functions: Ingestion/Secretion/Mixing and Movement/Digestion/Absorption/Excretion, its accessory glands (salivary glands, liver, bile duct, pancreas) • Discuss the importance of Body temperature control, Energy balance and Metabolism and Physiologic alterations aiming to homeostatic control. <p>Laboratory skills</p>				

	<ul style="list-style-type: none"> • Perform and understand the physiologic principles in simulation scenarios related to muscle physiology, hemopoietic function and endocrine processes, gastrointestinal functions, temperature, energy and metabolic homeostasis. • Discuss and identify the physiologic processes underlying disease processes in clinical cases of the musculoskeletal, hemopoietic-lymphoid, endocrine, gastrointestinal, and metabolic systems: <ul style="list-style-type: none"> • - Calcium metabolism in bones • - The components of the haemopoietic system, along with their function • - Blood types and blood transfusion • Gastrointestinal functions, Nutritional requirements and disturbances, Obesity epidemic • Thermoregulation, Energy and components of Metabolism <p style="text-align: center;">Laboratory Exercises</p> <ul style="list-style-type: none"> • Simulation patients • Clinical Cases 		
Prerequisites	None	Co-requisites	None
Course Content	<p>This course is intended to familiarize students with:</p> <ul style="list-style-type: none"> • Membrane transport/Cell signaling Cell membrane potential, action potential • Muscle physiology I. Muscle cell, coupling of nerve impulse to muscle contraction • Muscle physiology II. Types and control of muscle contraction • Blood, red blood cells, Ht, Hb, blood cell count Plasma, Lymph, platelets blood clotting, Blood types, principles of flow cytometry • Thyroid, parathyroid glands, "hypothalamus-pituitary gland-thyroid gland Pancreatic hormones, Glucose metabolism • Female and Male Reproductive Physiology, Reproductive Hormones • Physiology of the Gastrointestinal track, GI Functions: Ingestion / Secretion/ Mixing and Movement/Digestion/Absorption/Excretion • Control of body temperature Energy balance and Metabolism, Homeostatic control. 		
Teaching Methodology	Lectures, Face- to- Face, Team-Based Learning, Computer-Assisted learning (CAL), Problem Based Learning, Small Group Discussions, Clinical Association Lectures, Tutorials and individual/peer reflection		
Bibliography	Textbooks:		

	<p>Guyton AC, Hall JE. Textbook of Medical Physiology. St. Louis: Elsevier, 2106.</p> <p>Widmaier E, Raff H, Strang K. Vander's Human Physiology. New York: McGraw Hill, 2018.</p> <p>Sherwood L. Human Physiology: From Cells to Systems. Boston: Cengage Learning, 2015.</p>		
Assessment	Final Examination	60%	
	Lab Report / Oral presentations	30%	
	Participation and attendance	10%	
	Total	100%	
Language	English		