

Course Description Template for the subject | **physiology**

University/College Name	Al-Ayen University, Iraq / College of Medicine
Subject Name	physiology
Academic Stage	second Stage
Available Attendance Modes	Lecture and Discussion
Subject System	Yearly
Number of Hours per Week	
Academic Year for Preparing this Description"	2023-2022

Week	Lecture title	Details
1	Introduction and functional anatomy Cardiac output Introduction to neurology	<ul style="list-style-type: none"> • Definition of cardiac out put • Factor that determined the (co). • Anatomy of neurology
	Introduction of blood physiology	<ul style="list-style-type: none"> • View about blood • Production Hemopoiesis
2	Introduction to Nervous system	<ul style="list-style-type: none"> • Anatomy and divisions of nervoussystem • Physiologic anatomy of cerebralcortex. • layers of cerebral cortex
3	Cortical areas	<ul style="list-style-type: none"> • parts of cortical areas. • association areas of brain.
	Venous return ----- Nerve action potential	<ul style="list-style-type: none"> • Factors that determine the venousreturn. • Cardiac and systemic vascularfunction curves. ----- • Discuss the mode of actionpotentials.

		How does the electrolyte move?
4	RBC, anemia, polycythemia	<ul style="list-style-type: none"> • Precursor of RBC • types of anemia • Causes of polycythemia.
	Introduction to heart anatomy	<ul style="list-style-type: none"> • Overview of the Cardiovascular Syst • anatomy of heart, • Twall of heart
5	Lobes of brain	<ul style="list-style-type: none"> • anatomy of each lobe of brain. • function and integral role of eachlobe.
	Discussion thevenous return Nerve conduction	<ul style="list-style-type: none"> • Discussion the venous return Role of electrolyte in Nerve conduction
6	Hb and Hemoglobin pathy	<ul style="list-style-type: none"> • Origin and fate of Hb • abnormal Hb and diseases of Hb
	Heart valves	<ul style="list-style-type: none"> • anatomy of heart valves • Intrinsic Control of Heart beat
7	Anatomy and physiology of cerebellum	<ul style="list-style-type: none"> • anatomy of cerebellum. • functional subdivision ofcerebellum. • cerebellar nuclie.
	hemodynamics neuromuscul arjunction	<ul style="list-style-type: none"> • factor that effect the blood flow. • Types of the blood flow <p>.....</p> <p>Anatomy of neuromuscular junction.What is the Role of Acetyle choline in conduction.</p>
8	WBC	<ul style="list-style-type: none"> • Leukocyte Granulocyte Monocyte-macrophage system
	Heart sound and murmurs	<ul style="list-style-type: none"> • Enumeration of normal heartsounds ,murmurs • jugular venous pressure(definitionand waves)
	Physiology of brainstem	<ul style="list-style-type: none"> ▪ anatomy of brainstem . ▪ function

9	<p>The Flow of Bloodthrough Blood Vessels</p> <p>-----</p> <p>Diseases in NMjunction</p>	<ul style="list-style-type: none"> • The histology of the walls of arties and veins. • Blood gas exchange ----- • Myasthenia Gravis and other diseases
10	inflammation	Role of neutrophils and macrophage
	Action potential incardiac muscle	<ul style="list-style-type: none"> • definition. • Phases of Cardiac Muscle Action Potential
11	Physiology of basalganglia	<ul style="list-style-type: none"> • main components of basal ganglia. • funciom of basal ganglia in executing patterns of motor movements
12	Volume Distribution	<ul style="list-style-type: none"> • The values of pressure in the pulmonary and systemic circulation . • The Mean arterial pressure (MAP).
	Immunity andallergy	<ul style="list-style-type: none"> • Resistance of the body to infection • Action of WBC
13	Spinal cord, anatomy, organization formotor function	<ul style="list-style-type: none"> • anatomy and function of spinal cord. • organization for motor function
14	The Microcirculation and the LymphaticSystem	<ul style="list-style-type: none"> • The peripheral circulation and its control. • The Mechanisms of Blood Pressure Regulation. • What is the Short-Term Regulationof blood pressure. • Mechanism of muscle contraction
	Actin myosinproteins	

15	Blood group and compatibility	<ul style="list-style-type: none"> • Types of blood group • Blood transfusion.
	Cardiac cycle	<ul style="list-style-type: none"> • definition. • phases of cardiac cycle.
16	Spinal cord reflexes and muscle tone	<ul style="list-style-type: none"> • spinal reflexes. • components of reflex arc.
	Discussion and review Muscle fatigue	<ul style="list-style-type: none"> • Discussion and review • Muscle action potential and muscle fatigue
17	Hemostasis and blood coagulation	<ul style="list-style-type: none"> • Cascades • Coagulation factors • mechanism of coagulation.
	Regulation of heart pumping	<ul style="list-style-type: none"> • Intrinsic regulation of heart pumping (Frank-Starling Mechanism) • Control of the Heart by the Sympathetic and Parasympathetic Nerves
18	Autonomic nervous system	<ul style="list-style-type: none"> • general organization of ANS. • Physiologic Anatomy of sympathetic and Parasympathetic Nervous System • Effects of Sympathetic and Parasympathetic Stimulation on Specific Organs
19	Fibrinolytic system	<ul style="list-style-type: none"> • Bleeding disorder • fibrinolysis after bleeding
	Rhythmical excitation of heart	<ul style="list-style-type: none"> • Specialized Excitatory and Conductive System of the Heart • Mechanism of Sinus Nodal Rhythmicity.
	Autonomic reflexes	<ul style="list-style-type: none"> • regulation of main visceral organs by autonomic reflexes • Alarm” or “Stress” Response of the Sympathetic Nervous System

20	The Microcirculation and the Lymphatic System	<ul style="list-style-type: none"> • The peripheral circulation and its control. • The Mechanisms of Blood Pressure Regulation. <p>Q-What is the Short-Term Regulation of blood pressure .</p> <p>.....</p> <ul style="list-style-type: none"> • Cell composition • Cell constituents • Function of each part.
	Cell physiology	
	Thromboembolic disorders	<ul style="list-style-type: none"> • Thrombosis • Dislodgement of embolus
	States of Brain Activity (Sleep & Brain Waves)	<ul style="list-style-type: none"> • stages of sleep. • neuronal center of sleep • Cycle Between Sleep and Wakefulness.
21	Physiology of limbic system	<ul style="list-style-type: none"> • functional anatomy of limbic system. • Behavioral Functions of the Hypothalamus and Associated Limbic Structures
	Electrocardiography	<ul style="list-style-type: none"> • what is the ECG. • The indication of ECG. • How to do ECG . <p>.....</p> <p>Function of ER Golgi apparatus body</p>
	Endoplasmic reticulum	
22	Function of brain in communication(language)	<ul style="list-style-type: none"> • Sensory aspect of communication • Motor aspect of communication
	Memory	<ul style="list-style-type: none"> • Classification of memory • Consolidation of memory • Role of specific parts of brain in memory process.
	Electrocardiography	<ul style="list-style-type: none"> • calculation of heart rate . • types of arrhythmia <p>.....</p>

	Water homeostasis	Introduction of nutrients Water loss and gain in the body.
23	Diseases of immune system	WBC Diseases of WBC
	Cerebral blood flow and brain metabolism	regulation of cerebral blood flow control of CBF by carbon dioxide and hydrogen ion
	Cerebrospinal fluid	contents of CSF. cushioning function of CSF
24	Coronary bloodflow Calculation of body compartments	The Coronary perfusion pressure , Cerebral blood flow and renal blood flow. The Cardiovascular stress How can you calculate all the types of body compartments?
25	Problem with blood transfusion	complication of blood transfusion mechanism of ABO incompatibility
	Physiology of pain	Definition of pain Types of pain Pathway for transmission of pain signal
	Cranial nerves	Anatomy, enumeration and function of Cranial nerves

Edema	Mechanisms of Blood Pressure Elevation Edema	Mechanisms of Blood Pressure Elevation. Risk factors for primary hypertension include. Causes of secondary hypertension include. Types of edema Mechanism of Edema in a common diseases
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26	Physiology of endocrine system	<ul style="list-style-type: none"> • introduction to endocrine • Pituitary hormone and their control by hypothalamus • growth hormone • role of hypothalamus • antidiuretic hormone thyroid hormone , hypo and hyperthyroidism
27	Physiology of endocrine system	<ul style="list-style-type: none"> • adrenocortical hormones • cortisone hormone • insulin , glucagone and diabetes mellitus. • control of insulin secretion • thyroid hormone, calcitonin ,calcium and phosphatemetabolism
	Renal physiology	<ul style="list-style-type: none"> • introduction , anatomy • nephron function • blood flow through the kidney • Glomerular filtration rate. • Tubular reabsorption

	Renal physiology	<ul style="list-style-type: none"> • absorption capabilities of different tubule segment • plasma clearance and measure of GFR • Diuresis and diuretics • counter current exchange mechanism • effect of tubular load and transport maximum on urine constituents
28	GIT physiology	<ul style="list-style-type: none"> • anatomic features and innervations • mastication and swallowing • motor function of stomach • movement of small intestine • function of ileocecal valve, defecation
	GIT physiology	<ul style="list-style-type: none"> • secretion of saliva and gastric secretion • pancreatic secretion regulation • secretion of bile and secretion of small intestine

		<ul style="list-style-type: none"> • secretion of large intestine , digestion • liver
29	Respiratory physiology	<ul style="list-style-type: none"> • functional anatomy • lung volume and capacities • pressure change during respiration • pulmonary .circulation • alveolar ventilation
	Respiratory physiology	<ul style="list-style-type: none"> • exchange of gases and diffusion capacity • transport of carbon dioxide by the blood • hypoxia, hypercapnia and hypocapnia • effect of exercise • pulmonary function test

	Respiratory physiology	<ul style="list-style-type: none"> • patterns of breathing ,normal and abnormal • oxygen dissociation curve, co2 dissociation curve • neural factors and brain stem Respiratory regulation ,renal regulation of H • Types of disorders, metabolic and respiratory
30	Skin and eye	<ul style="list-style-type: none"> • Normal temperature , heat production • fever and hypothermia • functional anatomy of the eye • physiology of retina ,visual field and pathway • colour vision,cerebral cortical visual function
	1 eye and 4 ENT	<ul style="list-style-type: none"> • functional anatomy of the ear • properties of hearing system • vestibular function • hearing test
31	4 acid base balance	<ul style="list-style-type: none"> • homeostasis • body fluid ,volume • body fluid composition • edema

	2Gynecological physiology+2sport +1 neonatal	<ul style="list-style-type: none"> • reproductive and hormonal functionof male • female physiology before pregnancy and female hormones • pregnancy and lactation • sport physiology • fetal and neonatal physiology
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Practical course 60 hours

Week	Lecture title	Details
1	Blood	<ul style="list-style-type: none"> • Enumeration of RBC.
	Physiology	<ul style="list-style-type: none"> • Enumeration of WBC.
2		

		<ul style="list-style-type: none"> Differential WBC count -blood film.
3		<ul style="list-style-type: none"> Haemoglobin estimation.
4		<ul style="list-style-type: none"> Determination of blood groups. Determination of erythrocytes sedimentation rate.
5		<ul style="list-style-type: none"> Absolute blood value.
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7		
8	Respiratory system	<ul style="list-style-type: none"> Measurement of lung volumes spirometry.
9		<ul style="list-style-type: none"> Vitalography.
10		<ul style="list-style-type: none"> Recording of respiratory movements (Stethograph)
11	CNS	<ul style="list-style-type: none"> Special sense .
12		1-Vision (Snellen charts for far vision, Ishihara charts for color blindness) .
13		2- Hearing (tunning fork tests-Rine and Weber test)
14		<ul style="list-style-type: none"> Reflexes.

