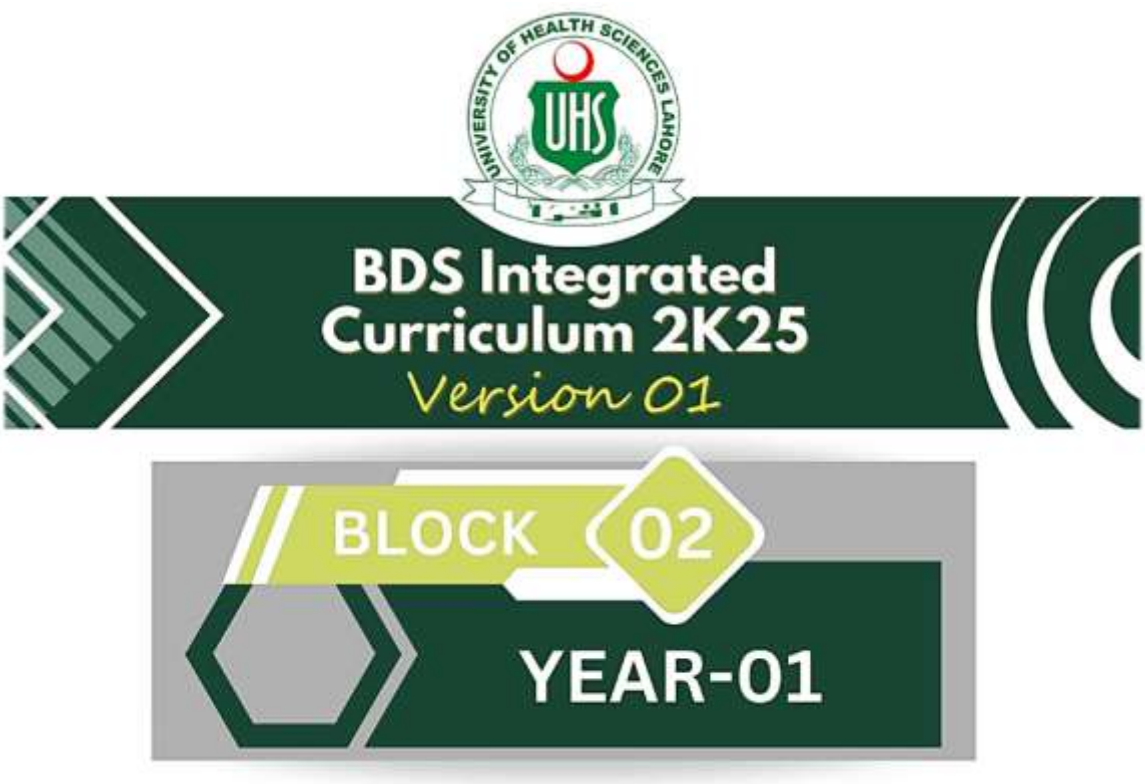
STUDY GUIDE
INTEGRATED CURRICULUM 2k25
1ST YEAR BDS
BLOCK II

LAHORE
MEDICAL & DENTAL
COLLEGE



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STUDY GUID INTRODUCTION

What is a **study guide**?

The study guide is an important academic tool that aids students for different educational activities they are engaged in. It provides pertinent details on the module's structure, assisting students in planning their academic activities accordingly. Another purpose of study guide is to guide students about different rules and regulations as well as teaching and assessment techniques.

Purpose of study guide:

· Conveys details about the organization and management of the module.

· Helps the learners about departmental representatives who can be contacted in case of difficulty.

· Define the learning objectives that should be accomplished by the end of the module.

· Identifies learning methodologies such as lectures, small group discussion, practical that will be implemented during the module.

· Provide a list of learning resource to maximize their learning

· Includes information on the assessment methods and examination related rules and regulations

Time Allocation and Academic Framework

The First Professional BDS academic year consists of a minimum of 1,200 teaching hours, conducted in affiliated colleges. The curriculum is structured into three blocks, each further divided into modules with defined learning outcomes for each subject**.**

ANATOMY

GROSS ANATOMY (HEAD AND NECK)				
CODE	**SPECIFIC LEARNING OUTCOMES**	**TOTAL HOURS = 28**		
		INTEGRATING DISCIPLINE	**TOPIC**	**Snell's Clinical Anatomy by Regions edition 2025-26**
CFII-A-001	Describe the features and structures of different views of skull (Anterior, Posterior, Superior, Inferior, Lateral)	Human Anatomy	Skull	Page No. 613-621
	Discuss the sutures and fontanelles of skull, their age changes and clinical significance.			Page No. 613, 626-627, 763-764
	Identify and enlist all the formina of the skull along with their neurovascular contents			Page No. 618-619
CFII-A-002	List the layers of scalp and describe the anatomical features with neurovascular supply and lymphatic drainage of scalp.	Neuro Anatomy, Human Anatomy	Scalp	Page No. 628-831
	Give anatomical justification of spread of scalp infections, profuse bleeding in			Page No. 632
	Enlist in tabulated manner the muscles of facial expression, giving their nerve supply and actions.			Page No. 630, 635- 636

CFII-A-003	Describe the extracranial course, branches, and distribution of the facial nerve. Explain the causes and clinical consequences of damage to the nerve.	Anatomy	Face	Page No. 693-694, 637
	Describe the extracranial course, branches, and distribution of trigeminal nerve. Explain the causes and clinical consequences of damage to the nerve.			Page No. 657, 688-693
	Describe the innervation of the maxillary and mandibular teeth, and their supporting structures and the anatomical basis of common variations in sensory innervation of the teeth.			Page No. 714-715
	Describe the vascular supply and lymphatic supply of face.	General Pathology, Anatomy		Page No. 633-635
	Describe the danger area of face with it its clinical significance. Define the routes of spread of infection from face and scalp to brain			Page No. 635
	Define the boundaries and openings of orbital cavity. List the structures traversing these openings.			Page No. 653-658

CFII-A-004	In a tabulated manner enlist the extraocular and intraocular muscles of eyeball and eyelid muscles giving their nerve supply and actions	Anatomy	Vision	Page No. 653
	List and define the movements of eyeball with special reference to the axis			
	List the parts of Lacrimal apparatus giving their location and anatomical features. Describe the nerve supply of lacrimal gland			Page No. 658
	Describe the extracranial course, distribution and branches of oculomotor, trochlear and abducent nerves. Describe the location, roots and distribution of ciliary ganglion			Page No. 652-653,, 703
	Give the clinical correlates of nerves supplying the muscles of the eyeball			Page No. 656-657
	Describe the course and branches of ophthalmic artery mentioning its origin and termination			Page No. 658, 664
	Give the anatomical structure of eyeball emphasizing on its three coats and their neurovascular supply			Page No. 681, 660-

				663
CFII-A-005	Describe the bony features of mandible.	Anatomy	Mandible and Temporomandibular Joint	Page No. 622-623
	Describe temporomandibular joint ligaments, nerve supply and movements.			Page No. 623-626
	Identify and describe the muscles of mastication along with origin, insertion, action, and innervation of each muscle	OMFS, Anatomy		Page No. 625
CFII-A-006	Describe the boundaries contents and primary communications of temporal, infratemporal and pterygopalatine fossa	Anatomy	Temporal, Infratemporal and	Page No. 616, 656-666
	Describe the location, roots and distribution of pterygopalatine ganglion		Pterygopalatine fossa	Page No. 667
CFII-A-007	Describe the anatomical features and neurovascular supply of external ear		Ear	Page No. 703-704
	Describe the boundaries, contents, neurovascular supply and communications			Page No.

	of middle ear cavity			705-707, 708
	Describe the anatomical features of auditory tube			Page No. 711-712
	Describe the parts, anatomical features and neurovascular supply of internal ear			
	Describe the course vestibulocochlear nerve			Page No. 694-695
CFII-A-008	Describe the anatomical features and neurovascular supply of external nose		Nose	Page No. 731
	Describe the boundaries of nasal cavity: nasal septum, lateral wall of nose, roof and floor. Give their anatomical features and neurovascular supply			Page No. 732-734
	List the paranasal sinuses giving their locations, openings, neurovascular			Page No. 735-737
	Discuss the clinical correlates of nose: Epistaxis, Foreign body in the nose.			Page No. 734
CFII-A-009	Identify and classify fractures of the maxilla based on anatomical patterns (Le Fort classification)	OMFS, Anatomy	Applied Anatomy	Page No. 622

	Identify and classify fractures of the mandible based on anatomical regions			Page No. 623

GROSS ANATOMY PRACTICALS				
CODE	**SPECIFIC LEARNING OUTCOMES**	**TOTAL HOURS = 05**		
		INTEGRATING DISCIPLINE	**TOPIC**	**Snell's Clinical Anatomy by Regions edition 2025-26**
CFII-A-010	Demonstrate the ability to accurately orient a dry human skull in normal verticals, occipitalis, frontalis, lateralis, and basalis views; and identify key anatomical and surface each view	Applied Anatomy	Skull	Page No. 614-621
	Identify and describe the anatomical features, boundaries, and foramina of the anterior, middle, and posterior cranial fossae, including the grooves of the dural venous sinuses			Page No. 618-621

CFII-A-011	Identify and locate the major anatomical landmarks, foramina (with their contents), and surface features of the mandible; articulate it the skull; recognize surrounding anatomical relations (anterior, posterior, medial, and lateral);and demonstrate basic functional mandibular movements and differentiate the role of muscles of Mastication and accessory muscles in protrusion, lateral excursion, opening, and closing.		Mandible	Page No. 622-626
CFII-A-012	Demonstrate and systematically identify major arteries, veins, and nerves on anatomical models or cadaveric dissections; locate their course, branches, and anatomical relations; and correlate their clinical significance with	Applied Anatomy	Surface Anatomy	Page No. 678-701

	surrounding structures			
CFII-A-013	Identify and demonstrate the origin, insertion, nerve supply, and actions of the muscles of mastication and facial expression on models or cadaveric specimens	Applied Anatomy	Jaw Muscle	Page No. 625, 632-635
CFII-A-014	Demonstrate surface marking of extracranial branches of the facial nerve and trigeminal nerve in relation to relevant structures, and identify their anatomical pathways and clinical relevance.	Clinical Anatomy	Neurovascular Supply of face	Page No. 637, 710, 724, 688-693

NEUROANATOMY				
CODE	SPECIFIC LEARNING OUTCOMES	TOTAL HOURS = 25		
		INTEGRATING DISCIPLINE	TOPIC	Page number SNELL'S CLINICAL NEURO ANATOMY EIGTH EDITION
NS-A-001	Briefly describe general organization of nervous system	NEUROANATOMY	Nervous System Overview	Page No. 1-14
NS-A-002	Define neuron and describe its structure		Neuron	Page No. 33-43
NS-A-003	Classify neurons morphologically and functionally with examples		Neuron Classification	Page No. 37
NS-A-004	Briefly describe components of central and peripheral nervous system		CNS & PNS Overview	Page No. 2-12
NS-A-005	Describe the supporting cells in central and peripheral nervous system		Neuroglia	Page No. 54-60
NS-A-006	Define receptors and effectors		Receptors and Effectors	Page No. 84, 93
NS-A-007	Describe classification of receptors		Receptor Classification	Page No. 84
NS-A-008	Describe the major subdivisions of with comparison of anatomical differences.	NEUROANATOMY	Sympathetic vs. Parasympathetic System	Page No. 2, 387-390
NS-A-009	Describe the structural and functional features of cranial nerves.		Cranial Nerves Overview	Page No. 323-325

NS-A-010	Enlist all cranial nerves and describe their functions	Neuroanatomy	Cranial Nerve Functions	Page No. 324
NS-A-011	Explain the classification, structure, and functions of peripheral nerve fibers in a typical spinal nerve.		Spinal Nerve Anatomy	Page No. 64
NS-A-012	Define dermatome		Dermatome	Page No. 98,116
NS-A-013	Enlist the parts of the brain.		Brain Regions	Page No. 4-10
NS-A-014	Identify the lobes, sulci & gyri and cortical areas of cerebrum		Cerebral Cortex Anatomy	Page No. 249
NS-A-015	Describe functional areas of cerebrum		Functional Cortex	Page No. 263
NS-A-016	Describe internal structure of cerebral hemisphere (white matter, basal ganglia, lateral ventricle)		Cerebral Hemisphere Structure	Page No. 260-266
NS-A-017	Describe ventricular system (Lateral, 3rd & 4th ventricles)		Ventricular System	Page No. 437-447
NS-A-018	Describe various parts of internal capsule		Internal Capsule	
NS-A-019	Label, and identify the key structures in cross-sectional anatomy of the brainstem at the levels of the midbrain, pons, and medulla, highlighting the distribution of grey and white matter.	Neuroanatomy	Brainstem Cross-Sectional Anatomy	Page No. 195-219

NS-A-020	Describe the location of cranial nerve nuclei, their functional components, and distribution, and trace the course of cranial nerve V, VII, VIII, IX, and XII from its intracranial origin to the respective skull foramina.	Neuroanatomy	Cranial Nerve Nuclei and Pathways	Page No. 323-348
NS-A-021	Identify the lobes of cerebellum		Cerebellar Lobes	Page No. 229-230
NS-A-022	Discuss the functional classification of cerebellum		Cerebellar Functions	Page No. 233
NS-A-023	Define important clinical correlates, vermis syndrome, ataxia, dysarthria, dysdiadochokinesia, nystagmus, and vertigo.		Cerebellar Clinical Correlates	Page No. 241-243
NS-A-024	Identify the location, extent, coverings, and blood supply of spinal cord		Spinal Cord Overview	Page No. 464-472
NS-A-025	Discuss & tabulate nuclear organization at different levels of spinal cord		Spinal Cord Nuclei	Page No. 138
NS-A-026	Describe, draw & label the transverse section of spinal cord at mid cervical level showing ascending & descending tracts		Spinal Cord Cross-Section	Page No. 141

NS-A-027	Elaborate the cross-sectional details of white and gray matter of cervical and thoracic segments of spinal cord		Spinal Cord Gray & White Matter	Page No. 138-141
NS-A-028	Tabulate the sensory nerve endings, and anatomical sites of first, second, third order neurons of ascending tracts		Ascending Tracts	Page No. 142-152
NS-A-029	Tabulate first, second, descending tracts		Descending Tracts	Page No. 152-160
NS-A-030	Differentiate clearly between upper and lower motor neuron lesions		UMN vs. LMN Lesions	Page No. 164-167
NS-A-031	Discuss/Draw and label the formation of Circle of Willis		Circle of Willis	Page No. 470
NS-A-032	Discuss the location, origin and termination of dural venous sinuses.	Neuroanatomy	Dural Venous Sinuses	Page No. 422
NS-A-033	Discuss the important structures associated with the cavernous sinus and its clinical significance in relation to the danger area of the face		Cavernous Sinus	Page No. 424
NS-A-034	Discuss the anatomical basis of extradural, subdural and subarachnoid hemorrhages		Intracranial Hemorrhages	Page No. 429

NS-A-035	Explain the formation, circulation and absorption of CSF (Cerebrospinal fluid)		CSF Physiology	Page No. 448-451
NS-A-036	Discuss the origin, course, branches and distribution of internal carotid and vertebral artery		Brain Blood Supply	Page No. 464-467
NS-A-037	Basal Reticular System		Reticular System	Page No. 299
NS-A-038	Thalamus and hypothalamus in relation to limbic system	Neuroanatomy	Thalamus & Hypothalamus Overview	Page No. 363-383
NS-A-039	Discuss the blood		Thalamus & Hypothalamus Connections	Page No. 363-383
	Describe the Hypothalamo-Hypophyseal Portal System		Hypophyseal Portal System	Page No. 377
	Discuss the clinical correlates of thalamus and hypothalamus(Thalamic		Thalamic & Hypothalamic Clinical Correlates	Page No. 382,369
NEUROANATOMY				
CODE	**SPECIFIC LEARNING OUTCOMES**	**TOTAL HOURS = 04**		
		INTEGRATING DISCIPLINE	**TOPIC**	**SNELL'S CLINICAL NEURO ANATOMY EIGTH EDITION**

NS-A-040	Demonstrate gross neuroanatomical knowledge of the brain and brainstem with particular focus on the cranial nerves, including identification of their origin, course, nuclei, associated foramina, functional components, and clinical correlations using anatomical models and dissected cadaveric specimens	Neuroanatomy	Nervous system	Page No. 323-348

BIOCHEMISTRY

MODULE-4 (CRANIOFACIAL-II)

BIOCHEMISTRY		
CODE	**SPECIFIC LEARNING OUTCOMES**	**RESOURCES**
CFII-B- 001	Describe the structure and function of myoglobin, its role in oxygen storage and delivery in muscle tissue, and its significance as a biochemical marker in muscle injury and how is it different from hemoglobin.	Lippincott Illustrated Reviews Biochemistry (8th edition). Emine Ercikan Abali, Susan D. Cline, David S. Franklin, Susan M. Viselli. Wolters Kluwer /Lippincott Williams & Wilkins. Chapter No: 3 Globular Proteins Page. No: 26 to 30
	Describe the structure, types, and functions of collagen and elastin, and explain their roles in maintaining the mechanical strength and elasticity of muscle connective tissue.	Lippincott Illustrated Reviews Biochemistry (8th edition). Emine Ercikan Abali, Susan D. Cline, David S. Franklin, Susan M. Viselli. Wolters Kluwer /Lippincott Williams & Wilkins. Chapter No: 4 Fibrous Proteins Page. No: 45 to 53
	Identify disorders associated with collagen and elastin defects, particularly those affecting muscle support structures and connective tissue integrity.	

	Explain the composition and function of the extracellular matrix (ECM) in muscle tissue, including the roles of proteoglycans, collagen, fibronectin, and integrins in muscle cell adhesion, signaling, and repair.	A LANGE Medical book Harper's Illustrated Biochemistry (31st edition). Victor W. Rodwell, David A. Bender, Kathleen M. Botham, Peter J. Kennelly, P. Anthony Weil. McGraw-Hill Education. Chapter No: 50 The Extracellular matrix Page. No: 592 to 609 • Handouts
	Differentiate muscle fiber types (Type I, IIa, IIb) based on structure, metabolism, and functional properties.	• A LANGE Medical book Harper's Illustrated Biochemistry (31st edition). Victor W. Rodwell, David A. Bender, Kathleen M. Botham, Peter J. Kennelly, P. Anthony Weil. McGraw-Hill Education. Chapter No: 51 Muscle & the cytoskeleton Page. No: 621 • Mark's Basic Medical Biochemistry: A clinical approach (4th edition).

		Michael Lieberman, Allan D. Marks. Wolters Kluwer /Lippincott Williams & Wilkins. Chapter No: 47 Metabolism of Muscle at Rest and during exercise Page. No: 885-886
	Describe the mechanism of glucose uptake into tissues through glucose transporters and explain its role in cellular energy availability.	Lippincott Illustrated Reviews Biochemistry (8th edition). Emine Ercikan Abali, Susan D. Cline, David S. Franklin, Susan M. Viselli. Wolters Kluwer /Lippincott Williams & Wilkins. Chapter No: 8 Introduction to Metabolism and Glycolysis Page. No: 105 to 107
	Explain the function and regulation of the pyruvate dehydrogenase (PDH) complex in linking glycolysis to the tricarboxylic acid (TCA) cycle.	Lippincott Illustrated Reviews Biochemistry (8th edition). Emine Ercikan Abali, Susan D. Cline, David S. Franklin, Susan M. Viselli. Wolters Kluwer /Lippincott Williams &
	Describe the TCA cycle and explain how it generates reduced coenzymes (NADH, $FADH_2$) that	

	fuel oxidative metabolism.	Wilkins. Chapter No: 9 Tricarboxylic Acid Cycle and Pyruvate Dehydrogenase Complex Page. No: 120 to 125
	Explain the structure and function of the electron transport chain (ETC) and describe how oxidative phosphorylation, utilizing ATP synthase, generates ATP through the proton motive force.	Lippincott Illustrated Reviews Biochemistry (8th edition). Emine Ercikan Abali, Susan D. Cline, David S. Franklin, Susan M. Viselli. Wolters Kluwer /Lippincott Williams & Wilkins. Chapter No: 6 Bioenergetics and Oxidative Phosphorylation Page. No: 80 to 88
CFII-B- 002	Identify the effects of ETC inhibitors and uncouplers on electron transport and ATP synthesis, and discuss their implications for cellular energy production.	Lippincott Illustrated Reviews Biochemistry (8th edition). Emine Ercikan Abali, Susan D. Cline, David S. Franklin, Susan M. Viselli. Wolters Kluwer /Lippincott Williams & Wilkins. Chapter No: 6 Bioenergetics and Oxidative

		Phosphorylation Page. No: 80 to 88
	Explain the processes of glycogenesis and glycogenolysis in muscle tissue, including their regulation, the role of key enzymes, and their contribution to ATP production during exercise.	Lippincott Illustrated Reviews Biochemistry (8th edition). Emine Ercikan Abali, Susan D. Cline, David S. Franklin, Susan M. Viselli. Wolters Kluwer /Lippincott Williams & Wilkins. Chapter No: 11 Glycogen Metabolism Page. No: 137 to 147
	Discuss the role of muscle glycogen as an energy source during different exercise intensities, its depletion and recovery, and how regular exercise influences glycogen storage capacity and muscle adaptation.	
	Describe the ATP-PC system, its role in providing immediate energy during high-intensity activities, and the regeneration of ATP through phosphocreatine breakdown.	A LANGE Medical book Harper's Illustrated Biochemistry (31st edition). Victor W. Rodwell, David A. Bender, Kathleen M. Botham, Peter J. Kennelly, P. Anthony Weil. McGraw-Hill Education. Chapter No: 51 Muscle & the cytoskeleton Page. No: 620-621

MODULE-5 (NEUROSCIENCES)

BIOCHEMISTRY		
CODE	**SPECIFIC LEARNING OUTCOMES**	**RESOURCES**
NS-B-001	Elaborate the structure of mannitol & give its clinical uses.	• Handouts
NS-B-002	Briefly describe the metabolism & importance of glutamine in human body.	Lippincott Illustrated Reviews Biochemistry (8th edition). Emine Ercikan Abali, Susan D. Cline, David S. Franklin, Susan M. Viselli. Wolters Kluwer /Lippincott Williams & Wilkins. Chapter No: 19 Amino Acids: Nitrogen Disposal Page. No: 282-283
NS-B-003	Enlist inherited & acquired causes of hyperammonemia. Describe the effects of hyperammonemia on brain. Outline the management options for hyperammonemia.	Lippincott Illustrated Reviews Biochemistry (8th edition). Emine Ercikan Abali, Susan D. Cline, David S. Franklin, Susan M. Viselli. Wolters Kluwer /Lippincott Williams & Wilkins. Chapter No: 19

		Amino Acids: Nitrogen Disposal Page. No: 283-286 • Handouts
NS-B-004	Discuss chemistry, sources, RDA, biochemical role, deficiency & toxicity of B1, B6 & B12.	Lippincott Illustrated Reviews Biochemistry (8th edition). Emine Ercikan Abali, Susan D. Cline, David S. Franklin, Susan M. Viselli. Wolters Kluwer /Lippincott Williams & Wilkins. Chapter No: 28 Micronutrients: Vitamins Page. No: 425-429 • Handouts
NS-B-005	Explain the biosynthesis, mechanism of action, and physiological role of acetylcholine, and discuss the clinical consequences of its deficiency.	Mark's Basic Medical Biochemistry: A clinical approach (4th edition). Michael Lieberman, Allan D. Marks. Wolters Kluwer /Lippincott Williams & Wilkins. Chapter No: 11 Cell Signaling by Chemical Messengers Page. No: 172-174

	Outline the reactions involved in biosynthesis of catecholamines. Elaborate the mechanism of action of catecholamines. Give the cause & management of Parkinson disease.	Lippincott Illustrated Reviews Biochemistry (8th edition). Emine Ercikan Abali, Susan D. Cline, David S. Franklin, Susan M. Viselli. Wolters Kluwer /Lippincott Williams & Wilkins. Chapter No: 21 Amino Acids: Conversion to Specialized Products Page. No: 317-318
	Describe the synthesis & biochemical importance of serotonin, melatonin & GABA.	A LANGE Medical book Harper's Illustrated Biochemistry (31st edition). Victor W. Rodwell, David A. Bender, Kathleen M. Botham, Peter J. Kennelly, P. Anthony Weil. McGraw-Hill Education. Chapter No: 30 Conversion of Amino Acids to Specialized Products Page. No: 300,303
NS-B-006	Briefly describe the cause, clinical feature & management of Phenylketonuria	Lippincott Illustrated Reviews Biochemistry (8th edition). Emine Ercikan Abali, Susan D. Cline, David

		S. Franklin, Susan M. Viselli. Wolters Kluwer /Lippincott Williams & Wilkins. Chapter No: 20 Amino Acids: Degradation & Synthesis Page. No: 298-302
	Outline the metabolism of branched chain amino acids (BCAA). Briefly describe the cause, clinical features & management of maple syrup urine disease (MSUD).	Lippincott Illustrated Reviews Biochemistry (8th edition). Emine Ercikan Abali, Susan D. Cline, David S. Franklin, Susan M. Viselli. Wolters Kluwer /Lippincott Williams & Wilkins. Chapter No: 20 Amino Acids: Degradation & Synthesis Page. No: 295-296, 302

MODULE: 04 PHYSIOLOGY

Craniofacial II Theory

CODE	SPECIFIC LEARNING OUTCOMES	INTEGRATING DISCIPLINE	TOPIC	REFERENCE	PAGE NO.
CFII-P-001	Describe the physiological anatomy of a neuron, including its structure and function.	Physiology, Anatomy	Membrane Potentials and Action Potentials (Nerve)	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap 46 Pg 570 Lecture slides
CFII-P-002	Enlist the neuroglia cells responsible for myelination in CNS & PNS.	Physiology	Myelinated and Unmyelinated Nerve Fibers		Lecture slides
	Enlist the steps of myelination in peripheral nervous system.				Lecture slides
	Define Multiple sclerosis.				Lecture slides
CFII-P-003	Explain Nernst potential of Na & K.		Membrane Potentials	Guyton and Hall 14th Ed.	Chap 5 Pg.63-66
	Derive the Nernst equation.				
	Explain the physiological basis of the Goldman equation and write the equation.				

CFII-P-004	Describe the resting membrane potential of a nerve fiber and the role of various ion channels.		Resting Membrane Potential	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap 5 Pg.66-71,76
	Discuss role of different channels in calculating resting membrane potential.				
	Define Action potential and ionic basis.				
	Discuss the role of voltage-gated channels in generating action potentials.				
	Define threshold stimulus.				
CFII-P-005	Define the All-or-None Law.		Action Potentials	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap 5 Pg. 71,72,76,
	Define absolute and relative refractory periods and their physiological basis.				
	Discuss effects of hypocalcemia on nerve excitability.				
	Explain the	Physiology,			

	mechanism of local anesthetics on nerve excitability.	Pharmacology			
CFII-P-006	Explain the propagation of action potentials.	Physiology	Propagation of the Action Potential	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap 5 Pg 71-75
	Define Saltatory conduction and its benefits.				
	Explain mechanism of tetany.				
CFII-P-007	Describe the physiological anatomy of skeletal muscles.	Physiology, Anatomy	Contraction of Skeletal Muscle	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap 6 Pg. 79-81
	Describe the structure of Sarcomere.				
CFII-P-008	Explain general mechanism of skeletal muscle contraction.		General Mechanism of Muscle Contraction	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap 6 Pg. 81-84
CFII-P-009	Define and differentiate isotonic and isometric contractions with 2 examples of each.	Physiology	Characteristics of Whole Muscle Contraction	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap 6 Pg. 87-91
	Give physiological basis of tetanization and multiple fiber				

	summation.				
	Define motor unit.				
	Give physiological basis of Rigor mortis.	Pathology			
	Explain muscle fatigue.				
CFII-P-010	Describe the physiological anatomy of Neuromuscular Junction (NMJ).	Physiology	Neuromuscular Transmission & Excitation -Coupling	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap 7Pg. 93-97
	Explain neuromuscular transmission and generation of End Plate Potential.				
	Give pathophysiology of Myasthenia Gravis.	Physiology, Pathology			
CFII-P-011	Differentiate between types of smooth muscles. Give their physiological anatomy.	Physiology, Anatomy	Excitation and Contraction of Smooth Muscle	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap 8 Pg. 101-109
	Describe mechanism of smooth muscle contraction in comparison to skeletal muscle.	Physiology			
	Explain latch phenomenon of smooth muscles				

	and its benefits.				

Module:05 Neurosciences Theory

CODE	SPECIFIC LEARNING OUTCOMES	INTEGRATING DISCIPLINE	TOPIC	REFERENCE	PAGE NO.
NS-P-001	Describe the general organization of nervous system. Classify synapse and explain the physiological anatomy of chemical synapse. Elaborate the role of synapse in processing information. Classify the substances that act as neurotransmitters or synaptic transmitters. Enlist functions related to dentistry of each group. Define Excitatory and inhibitory postsynaptic potential and explain their mechanism of generation Explain spatial and temporal summation	Physiology	Organization of the Nervous System, Basic Functions of Synapses, and Neurotransmitters	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap 46 Pg. 569-85

	Explain the mechanism of synaptic fatigue (its significance) and synaptic delay Discuss the effects of hypoxia, acidosis and alkalosis on synaptic transmission				
NS-P-002	Define and classify the sensory receptors in the body on the basis of stimuli they detect. Discuss tonic and phasic receptors with 2 to 3 examples of each.	Physiology	Sensory Receptors, Neuronal Circuits for Processing Information	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap 47 Pg. 587-591
NS-P-003	- Classify nerve fibers by diameter and speed of conduction.	Physiology	Sensory Receptors, Transduction of sensory stimuli into nerve impulses	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap 47 Pg.591
NS-P-004	- Classify somatic sensations. Explain two main ascending pathways (DCML and Anterolateral system) for transmitting sensation to CNS . Enlist sensations carried by dorsal column medial Lemniscal system and Anterolateral	Physiology	Somatosensory Cortex	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap 48 Pg. 599-610

	Pathway with special reference to Trigeminal sensory system. Trace these pathways from receptors to sensory cortex and compare their features. Give location and functions of Primary somesthetic area and sensory association area of sensory cortex. Name the sensations perceived by these areas. Describe the sensations lost when there is damage to somesthetic areas. Discuss representation of body parts in sensory cortex .				
NS-P-005	Classify pain. Discuss location and stimulation of pain receptors Discuss dual pain pathway of spinal cord and brain for transmission of pain signals into CNS with especial reference to tooth pain compare the features of dual pain pathways	Physiology	Pain, Headache, and Thermal Sensations	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap 49 Pg. 611-623

	Explain Analgesia system/pain suppression system of brain and spinal cord. Discuss its significance Define and give physiological basis of referred pain with two examples. Define Trigeminal Neuralgia and describe its clinical features, basic causes, and dental relevance.				
NS-P-006	Name the motor areas of cerebral cortex and give representation of body parts. Discuss the functions of motor areas Enlist the functions of brain stem Name the descending motor tracts. Describe the functions of corticospinal tract.	Physiology	Cortical and Brain Stem Control of Motor Function	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap.56 Pg.697-704
NS-P-007	Give Functional organization of spinal cord. - Define motor unit. Define reflex action and	Physiology	Spinal Cord Motor Functions;the Cord Reflexes	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap.55 Pg.688-690

	identify the components of a reflex arc. Define, classify and enlist components of stretch reflex with special reference to jaw reflex).				
NS-P-008	Explain the features of upper motor neuron lesion. Explain the features of lower motor neuron lesion. Define and give types of cerebrovascular accident along with their salient features.	Medicine	Effect of Lesions in the Motor Cortex or in the Corticospinal Pathway		
NS-P-009	Enlist the components of limbic system and its general functions. Enlist functions of different portions hypothalamus Explain the physiological basis and features of Alzheimer's disease	Physiology	The Limbic System and the Hypothalamus	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap.59 Pg.744-751
NS-P-010	Define memory. Classify memory on the basis of duration and information stored. Define retrograde and anterograde	Physiology	Memory	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap.58 Pg.735-739

	amnesia				
NS-P-011	Explain the effects of sympathetic and parasympathetic on various organs/ system of body Enlist types of autonomic receptors present in heart, blood vessels, smooth muscles, GIT, & EYE. Give features of Alarm or stress response Enlist the functions of CSF Define hydrocephalus	Physiology	The Autonomic Nervous System and the Adrenal Medulla Cerebral circulation	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap.61 Pg.763- 774 Chap.62 Pg777-778,783
NS-P-012	Give types and features of sleep. Also mention the neurotransmitters involved in sleep	Physiology	Sleep	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap.60 Pg.753- 756
NS-P-013	Give functional divisions of cerebellum along with their functions Enlist cerebellar nuclei Enlist features of cerebellar dysfunction.	Medicine	Cerebellum and Basal Ganglia Contributions to Overall Motor Control	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap.57 Pg.711-720
NS-P-014	Enlist components of basal ganglia in relation to other structures of the brain Discuss functions of basal ganglia Discuss	Physiology	Cerebellum and Basal Ganglia Contributions to Overall Motor Control	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap.57 Pg.720- 724

	pathophysiology and features of Parkinson's disease. Elaborate the role of Dopamine in basal ganglia				
NS-P-015	Discuss functional anatomy of the eye. Enlist refractive surfaces of the eye and elaborate mechanism of image formation on retina Define cataract and glaucoma .	Physiology	Special senses Optics of the eye Fluid system of the eye— intraocular fluid	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap.50 Pg.627-637
NS-P-016	Describe the principal visual pathway from retina to visual cortex. Define the physiological blind spot and describe its location. Explain Pupillary Light Reflex.	Physiology	Central Neurophysiolo gy of Vision	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap.52 Pg.653-662
NS-P-017	Discuss how sound is conducted from tympanic membrane to cochlea? Describe the mechanism of impedance matching and its significance Describe the mechanism of attenuation reflex and its	Physiology	The sense of Hearing Tympanic membrane and the Ossicular system	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap.53 Pg.663-669

	significance				
NS-P-018	Describe the physiological anatomy and function of basilar membrane & organ of corti Give the normal range of frequency for hearing Describe the role of Place principle in determination of sound frequency	Physiology	Functional anatomy of the cochlea Auditory nervous pathways	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap.53 Pg.663-669
NS-P-019	Enlist the primary taste sensations. Describe the physiological anatomy and location of taste buds. Trace the taste pathway Enlist the primary sensations of smell Describe the physiological anatomy and location of olfactory membrane and olfactory receptors	Physiology	The Chemical Senses— Taste and Smell	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap.54 Pg.675-682

Module: 5 Neurosciences Practical's

CODE	SPECIFIC LEARNING OUTCOMES	TOPIC	Reference
NS-P-022	Examination of Olfactory nerve	Sensory System	Physiology Practical Copy
NS-P-023	Examination of 3rd, 4th and 6th nerve	CN III, IV, VI	
NS-P-024	Examination of trigeminal nerve	CN V	
NS-P-025	Examination of facial nerve	CN VII	
NS-P-026	Examination of 9th, 10th, 11th & 12th nerve	CN IX, X, XI, XII	
NS-P-027	Demonstrate following superficial reflexes: Corneal Reflex, Conjunctival Reflex & Plantar reflex.	Motor System	
NS-P-028	Examination of Deep tendon reflexes	Deep Reflexes	
NS-P-029	Recording body temperature	Hypothalamus	

ORAL BIOLOGY

Learning Objectives

CODE	Block II- Module 4 Craniofacial II	Chapter	Page number
CFII-OB-001	Describe the organic and inorganic components of the bone matrix	Chp 6: Bone	91
	Distinguish between compact and spongy bone, and their locations and functions.	Chp 6: Bone	91
	describe the origin of bone cells and the molecular factors involved	Chp 6: Bone	103-105
	Describe the functions of osteoblasts, osteocytes, and osteoclasts in Bone Formation and Remodeling	Chp 6: Bone	92-103
	Understand the processes of intramembranous and endochondral ossification.	Chp 6: Bone	105-111
	Describe the microscopic Structure of Bone: (Osteon, central canal, lamellae, lacunae, canaliculi, and blood vessels).	Chp 6: Bone	91
	Relate bone histology to dental procedures such as tooth extraction, implant placement, and bone grafting.	Chp 6: Bone	96
CFII-OB-002	Describe the histology of the Temporomandibular joint (temporal and condylar bone, muscles, capsule, disk, synovial membrane, and ligaments)	Chp 13: The Mastication apparatus	290-302
CFII-OB-003	Describe the concept of muscle contraction, illustrating the role of the motor unit, muscle spindles, and Golgi	Chp 13: The Mastication apparatus	303- 303

	tendon organs.		
	Describe the nerve supply of the joint emphasizing the role of nerve endings	Chp 13: The Mastication apparatus	305-309
	Describe the biomechanics of TMJ	Chp 13: The Mastication apparatus	304-305
	Identify the common TMJ associated clinical manifestations	Chp 13: The Mastication apparatus	
CFII-OB-004	Describe the anatomy and histology of the maxillary sinus		
	PRACTICALS		
CFII-OB-005	Draw and label the histological factor of compact and spongy bone		
CFII-OB-006	Identify and interpret histological sections of bone tissue under a microscope.		
CFII-OB-007	Analyze and interpret microscopic images of bone to identify its components and features.		
CFII-OB-008	Draw & label the histological section of the temporomandibular joint, showing temporal bone, disc, condylar bone, capsule, articular disc, and synovial membrane.		
CODE	**Block II- Module 6** **Alveo-cemental complex**	**Chapter**	**Page number**
ALC-OB- 001	Define the alveolo-cemental complex (periodontium) and explain its role in dental support.	Chp 9: Periodontium	193

ALC-OB- 002	Identify its components (cementum, PDL, alveolar bone, gingiva) and their diagrammatic arrangement around the tooth.	Chp1: structure of the oral tissues	2 (Figure 1-1)
ALC-OB- 003	Recognize and define key terms (e.g., cementoid, Sharpey's fibers, proprioception) related to alveolocemental complex	Chp 9: Periodontium	
ALC-OB- 004	Discuss the development of Supporting Tissues	Chp 9: Periodontium	194-196, 206-208
ALC-OB- 005	Enlist the structure and function of the periodontal ligament.	Chp 9: Periodontium	206-218
ALC-OB- 006	Describe the different groups of fibers in the periodontal ligament.	Chp 9: Periodontium	211
ALC-OB-007	Describe the adaptation of the periodontal ligament to the functional demands.	Chp 9: Periodontium	215
ALC-OB-008	Relate the study of the periodontal ligament with developmental disturbances and clinical implications.	Chp 9: Periodontium	
ALC-OB-009	Differentiate between the structure of cellular and acellular cementum.	Chp 9: Periodontium	119-204
ALC-OB-010	Classify and explain the structure of different types of cementum and their properties.	Chp 9: Periodontium	119-204
ALC-OB-011	Describe the role of cementum in the attachment apparatus.	Chp 9: Periodontium	193
ALC-OB-012	Describe resorption and repair of cementum and age changes.	Chp 9: Periodontium	
ALC-OB-013	Relate the study of cementum with developmental disturbances and clinical implications.	Chp 9: Periodontium	

ALC-OB-014	Describe the histology of bone cells and their molecular regulation	Chp 6: Bone	92-105
ALC-OB-015	Describe the structure and functions of alveolar bone.	Chp 9: Periodontium	205
ALC-OB-016	Elaborate its changes with age and its clinical considerations.	Chp 9: Periodontium	
ALC-OB-017	Describe the histological aspects of gingiva.	Chp12: Oral Mucosa	278-286
ALC-OB-018	Enumerate gingival fibers & their functions.	Chp 9: Periodontium	211
ALC-OB-019	Tabulate blood and nerve supply of gingiva.	Chp12: Oral Mucosa	286
ALC-OB-020	Describe the structural and functional characteristics of different areas of Gingival epithelium	Chp12: Oral Mucosa	278-286
ALC-OB-021	Explain the structure of dentogingival junction.	Chp12: Oral Mucosa	283
ALC-OB-022	Explain the structure of mucogingival junction.	Chp12: Oral Mucosa	283
ALC-OB-023	Describe eruption and phases of tooth movement.	Chp 10: Physiological tooth movement Eruption and shedding	218
ALC-OB-024	Elaborate pre-eruptive tooth movement.	Chp 10: Physiological tooth movement Eruption and shedding	218-220
ALC-OB-025	Discuss the mechanism and factors responsible for eruptive tooth movement.	Chp 10: Physiological tooth movement Eruption and shedding	220-221
ALC-OB-026	Describe the types of movement a tooth makes posteruption to maintain its functional position in the jaw in terms of mechanism and	Chp 10: Physiological tooth movement Eruption and	222

	significance.	shedding	
ALC-OB-027	Discuss histology and causes of tooth shedding.	Chp 10: Physiological tooth movement Eruption and shedding	222-226
ALC-OB-028	Describe the factors involved in abnormal tooth movement.	Chp 10: Physiological tooth movement Eruption and shedding	227-228
ALC-OB-029	Describe modeling and remodeling of bone. Bone	Chp 6: Bone	112-114
ALC-OB-030	Explain orthodontic tooth movement.	Chp 10: Physiological tooth movement Eruption and shedding	228-230
ALC-OB-031	Describe the investing layer associated with the crowns of unerupted teeth.		
ALC-OB-032	Define the alveolo-cemental complex (periodontium) and explain its role in dental support	Chp 9: Periodontium	193

PERIODONTOLOGY

CODE	SPECIFIC LEARNING OUTCOMES	TOTAL HOURS = 03			
		INTEGRATING DISCIPLINE	TOPIC	REFERENCE BOOK	PAGE NUMBER
ALC-OP- 001	Define key terminologies related to periodontal diseases: Gingivitis, periodontitis,	Oral Pathology and Periodontology	Periodontal Disease Terminology	Newman and Carranza's Clinical Periodontology and Implantology, 14th	Chapter 8, page 93-113

	periodontal pockets, clinical attachment level and periodontal bone loss			edition	
ALC-OP- 002	Identify the microbial composition of healthy gingival and periodontal tissues. Explain the role of commensal bacteria in maintaining periodontal homeostasis.		Healthy Microbial Composition and Periodontal Homeostasis		Chapter 10, page 129 - 162
ALC-OP- 003	List key bacterial species involved in periodontal disease (e.g., Porphyromonas gingivalis, Tannerella forsythia, Treponema denticola).		Pathogenic Bacterial Species in Periodontal Disease	Newman and Carranza's Clinical Periodontology and Implantology, 14th edition	Chapter 10, page 129 - 162
ALC-OP- 004	Explain how bacterial enzymes, toxins, and metabolic byproducts contribute to tissue destruction.		Role of Bacterial Enzymes and Toxins in Tissue Destruction		Chapter 8, page 93-113
ALC-OP- 005	What is Plaque biofilm and how is it form and what is its role in periodontal diseases.		Plaque Biofilm Formation and Role in Disease		Chapter 10, page 129 - 162
ALC-OP- 006	Describe dental plaque biofilm as the major factor contributing to development of periodontal disease, and its relationship with host, genetic and local predisposing factors in exacerbating		Biofilm-Host Interaction and Risk Factors		Chapter 10, page 129 - 162

	periodontal conditions.				
ALC-OP- 007	Demonstrate the adherent nature of plaque and the inability to visualize easily. Describe why it is important to disclose plaque; and demonstrate the need for mechanical plaque removal both by the patient and professionally.	Oral Pathology and Periodontology	Plaque Visualization, Disclosure, and Mechanical Removal		Chapter 10, page 129 - 162
ALC-OP- 008	Explain the role of dental calculus in periodontal disease, differentiate between supragingival and subgingival calculus, describe the formation, mineralization, and microbial composition of calculus, and explain how calculus acts as a plaque-retentive surface contributing to periodontal disease progression.		Dental Calculus Formation, Composition, and Role in Disease		Chapter 24, page 341 -358
ALC-OP- 009	Enlist other predisposing factors (other than calculus) that predispose to plaque formation and consequent periodontal disease like gingivitis.		Other Predisposing Factors for Plaque Formation		Chapter 24, page 341 -358
ALC-OP- 010	Describe the etiology and pathogenesis of scurvy with emphasis on the		Scurvy and Vitamin C Role in Periodontal Health		Chapter 25, page 359-379

	biochemical role of Vitamin C in collagen synthesis and its clinical implications on periodontal tissue integrity				

CODE	SPECIFIC LEARNING OUTCOMES	TOTAL HOURS = 03	
		INTEGRATING DISCIPLINE	TOPIC
ALC-OP- 011	Demonstrate plaque disclosure and visualization techniques.	Periodontology	Plaque Disclosure and Visualization
ALC-OP- 012	Record plaque index using standard methods.		Plaque Index Recording
ALC-OP- 013	Demonstrate plaque removal techniques including proper brushing and flossing		Brushing and Flossing Techniques
ALC-OP-014	Observe professional plaque removal techniques including scaling (formative observation only, not assessed).		Professional Plaque Removal Observation

PHARMACOLOGY
Module-04

Microbiology			
Code	**Specific Learning Outcomes**	**TOTAL HOURS = 07**	
CFII-Mic-003	Summarize the mechanism of action of major classes of chemotherapeutic agents (e.g., B-Lactams, aminoglycosides)	Pharmacology, Microbiology	Mode of actions of chemotherapeutic agents
	Identifying the appropriate chemotherapeutic agent for specific bacterial infections		
Pharmacology			
Code	**Specific Learning Outcomes**	**TOTAL HOURS = 02**	
CFII-Ph-001	i. Classify skeletal muscle relaxants according to their mechanism of action.	Katzang Edition 15th: Page 495. Lippincott Edition 10th Page.67.68.69	ANS
	ii. Describe the mechanism of action of non-depolarizing skeletal muscle relaxants.	Katzang Edition 15th: Page 495. Lippincott Edition 10th Page.67.68.69	
	iii. Explain the pharmacological actions of non-depolarizing skeletal muscle relaxant	Katzang Edition 15th: Page 493.494 Lippincott Edition 10th Page.68	
	iv. Describe the mechanism of action of succinylcholine. Enumerate therapeutic uses of peripherally acting skeletal muscle relaxants.	Katzang Edition 15th: Page 495.496 Lippincott Edition 10th Page.69	
Physiology			
Code	**Specific Learning Outcomes**	**TOTAL HOURS = 19**	
CFII-P-005	Explain the mechanism of local anesthetics on nerve Excitability.	Physiology, Pharmacology	
Block -02, Module-05 Pharmacology			
Code	**Specific Learning Outcomes**	**TOTAL HOURS = 22**	
NS-Ph-001	Classify sedative-hypnotics	Katzang Edition	Sedative/Hypn

		15th: Page Lippincott Edition 10th Page.116	otics
	Illustrate GABAA receptor-chloride ion channel macromolecular	Katzang Edition 15th: Page 400.401.402 Lippincott Edition 10th Page.117	
	Complex and identify site of action of various sedative hypnotics		
	List their clinical uses and adverse Effects	Katzang Edition 15th: Page 404.406 Lippincott Edition 10th Page.118 - 124	
	Outline the management of overdose of sedative hypnotics	Katzang Edition 15th: Page 406,407.	
	Compare BZD, barbiturates; and BZD, Buspirone	Katzang Edition 15th: Page 398,399 Lippincott Edition 10th Page.121, 122	
	Identify the distinctive properties of buspirone,	Katzang Edition 15th: Page 399, 398, 400, 405 Lippincott Edition 10th Page 121, 123, 124	
	eszopiclone, ramelteon, zaleplon, zolpidem and suvorexant		
NS-Ph-002	Classify local anesthetics Describe their mechanism of action Outline various methods of giving local anesthesia	Katzang Edition 15th: Page 480 Lippincott Edition 10th Page.161, 174	Local Anesthetics
	Explain the relationship among tissue pH, drug pKa, and the rate of onset of local anesthetic action	Katzang Edition 15th: Page Lippincott Edition 10th Page.175	
	Discuss 4 factors that determine the susceptibility of nerve fibers to local anesthetic blockade	Katzang Edition 15th: Page 482 Lippincott Edition 10th Page.	

	Describe the major toxic effects of the local anesthetics	Katzang Edition 15th: Page 484 Lippincott Edition 10th Page.175, 176	
	Explain how hyperkalemia facilitates the cardiac toxicity of local anesthetics	Katzang Edition 15th: Page 500 Lippincott Edition 10th Page.	
NS-Ph-003	Name the major inhalation and intravenous anesthetic drugs.	Katzang Edition 15th: Page Lippincott Edition 10th Page.161	General Anesthetics
	Define the terms blood: gas partition coefficient and minimum alveolar concentration (MAC), and explain their significance in the pharmacology of inhalational anesthetics.	Katzang Edition 15th: Page 462 Lippincott Edition 10th Page.164	
	Enlist the molecular targets of action of anesthetic drugs and describe their associated toxicities.	Katzang Edition 15th: Page 456, 457, 464, 465 Lippincott Edition 10th Page.	
	List main pharmacokinetic characteristics of commonly used intravenous and inhaled anesthetic agents.	Katzang Edition 15th: Page 458 – 462, 466 - 468 Lippincott Edition 10th Page.163, 164, 169, 170	
NS-Ph-004	Write pharmacodynamics classification of Opioid analgesics. Identify 3 opioid receptor subtypes and describe ionic mechanisms that result from their activation.	Katzang Edition 15th: Page 573, 574, 580 Lippincott Edition 10th Page.180, 181	Opioid Analgesics
	Describe cardinal signs and treatment of opioid drug overdose and of the withdrawal syndrome.	Katzang Edition 15th: Page 586 Lippincott Edition 10th Page.190, 191	

	Describe the classification, mechanism of action, therapeutic uses, and adverse effects of opioid analgesics.	Katzang Edition 15th: Page 573, 576, 584-586 Lippincott Edition 10th Page.	
NS-Ph-005	Classify anti-seizure drugs	Katzang Edition 15th: Page 423 Lippincott Edition 10th Page.149	Anti-seizure drugs
	List the drugs of choice for partial seizures, generalized tonic-clonic seizures, absence and myoclonic seizures, and status epilepticus	Katzang Edition 15th: Page 427-435, 442-444, 449 Lippincott Edition 10th Page.	
	Identify the mechanisms of anti-seizure drug action at the levels of specific ion channels and/or neurotransmitter systems	Katzang Edition 15th: Page 425, 426 Lippincott Edition 10th Page.158	
	Highlight the uses, adverse effects and drug interactions of carbamazepine, phenytoin, and valproic acid	Katzang Edition 15th: Page 427-433, 440-441 Lippincott Edition 10th Page.153, 155, 156	
	Identify the distinctive toxicities of new anti-seizure drugs	Katzang Edition 15th: Page Lippincott Edition 10th Page.158	
	Outline the management of status epilepticus	Katzang Edition 15th: Page 449 Lippincott Edition 10th Page.157	
NS-Ph-006	Enlist types and sub types of various ANS receptors along with their locations in different structures and organ systems of the body	Katzang Edition 15th: Page 103 Lippincott Edition 10th Page.	Introduction to ANS

	Describe the synthesis, storage, release and degradation of the Neuro-transmitters of the ANS	Katzang Edition 15th: Page 97, 98 Lippincott Edition 10th Page.48, 49, 50	
	Explain the negative and positive feedback controls of neurotransmitter release		
NS-Ph-007	Classify cholinomimetics according to chemistry & mechanism of action.	Katzang Edition 15th: Page Lippincott Edition 10th Page 48	Cholinergic Drugs (agonists)
	Describe actions of acetylcholine on different organ systems of body.	Katzang Edition 15th: Page 116-119 Lippincott Edition 10th Page.48-53	
	Enumerate the adverse effects of acetylcholine & cholinergic drugs	Katzang Edition 15th: Page 125.126 Lippincott Edition 10th Page.48-53	
	Explain the salient pharmacological properties of cholinesterase with their appropriate clinical uses.	Katzang Edition 15th: Page 114-116 Lippincott Edition 10th Page.48-53	
	Differentiate between cholinergic and myasthenia crisis	Katzang Edition 15th: Page 123 Lippincott Edition 10th Page.55, 56	
	Describe the management of myasthenia gravis.	Katzang Edition 15th: Page 123 Lippincott Edition 10th Page.56	
	Explain the role of Pilocarpine in glaucoma	Katzang Edition 15th: Page Lippincott Edition 10th Page.54	
	Enumerate the signs and symptoms of organophosphate poisoning due to cholinergic excess.	Katzang Edition 15th: Page 119-121	

	Enlist steps in the management of organophosphate compound (OPC) poisoning	Lippincott Edition 10th Page.57.58	
	Describe aging and role of oximes in the management.		
	Explain the prevention of OPC poisoning		
	Classify anti-cholinergic drugs (on the basis of therapeutic uses)	Katzang Edition 15th: Page Lippincott Edition 10th Page.62	
	Describe pharmacological actions of atropine Differentiate between atropine and hyoscine Enlist therapeutic uses of atropine	Katzang Edition 15th: Page 130-134 Lippincott Edition 10th Page.63-65	
	Enumerate adverse effects of anti-cholinergic drugs	Katzang Edition 15th: Page 138 Lippincott Edition 10th Page.65.66	
NS-Ph-008	Classify skeletal muscle relaxants according to their mechanism of action.	Katzang Edition 15th: Page 495 Lippincott Edition 10th Page.67.68.69	Skeletal Muscle Relaxants
	Describe mechanism of action and adverse effects of non-depolarizing skeletal muscle relaxants		
	Enumerate therapeutic uses of peripherally acting skeletal muscle relaxants.	Katzang Edition 15th: Page 502 Lippincott Edition 10th Page.70	
	Define and give pharmacological basis and treatment of malignant hyperthermia	Katzang Edition 15th: Page 465 Lippincott Edition 10th Page.168	
NS-Ph-009	Classify Sympathomimetics on the basis of chemistry & receptor selectivity.	Katzang Edition 15th: Page 144.146 Lippincott Edition 10th Page.	Sympathomimetic Drugs
	Explain the mechanism of action of adrenaline, the prototype drug of the group.	Katzang Edition 15th: Page 153	

		Lippincott Edition 10th Page.78.79	
	Describe the important pharmacological actions of adrenaline on different organ systems of the body.	Katzang Edition 15th: Page Lippincott Edition 10th Page.79.80	
	Enlist and explain the therapeutic uses of adrenaline	Katzang Edition 15th: Page 156-158 Lippincott Edition 10th Page.80.	
	Enumerate important adverse effects & contraindications of the drug.	Katzang Edition 15th: Page Lippincott Edition 10th Page.80.81	
	Explain the differences in response, therapeutic uses& side-effects of other catecholamine with reference to adrenaline	Katzang Edition 15th: Page 88 mini Lippincott Edition 10th Page.156-158	
	Differentiate between catecholamine and non-catecholamine	Katzang Edition 15th: Page Lippincott Edition 10th Page.99-101	
	Explain the pharmacological actions of important non-catecholamines in light of their mode of action	Katzang Edition 15th: Page Lippincott Edition 10th Page.83-88	
	Enlist important therapeutic uses and side-effects of Important non-catecholamines.		
	Classify sympathomimetics according to their clinical Indications	Katzang Edition 15th: Page 154-155 Lippincott Edition 10th Page.	
NS-Ph-010	Classify alpha blockers according to receptor selectivity.	Katzang Edition 15th: Page 164. Lippincott Edition 10th Page.91-93	Alpha Receptor Blocking drugs

	Explain the pharmacological actions of alpha blockers	Katzang Edition 15th: Page.163. Lippincott Edition 10th Page.91-93	
	Enlist and important clinical uses and side-effects of this drug group.	Katzang Edition 15th: Page.165-166 Lippincott Edition 10th Page.91-93	
	Describe their role in benign prostatic hyperplasia & Pheochromocytoma		
NS-Ph-011	Classify beta blockers according to receptor selectivity, ISA, MSA, lipid solubility & duration of action.	Katzang Edition 15th: Page 85-87 Lippincott Edition 10th Page.93-99	Beta Receptor Blocking drugs
	Describe the pharmacological actions of beta blockers on different systems of the body.	Katzang Edition 15th: Page 168-169 Lippincott Edition 10th Page.93-99	
	Explain important pharmacokinetic features of the Group	Katzang Edition 15th: Page 167-168 Lippincott Edition 10th Page.93-99	
	Enlist and explain important clinical uses of beta blockers especially with reference to CVS	Katzang Edition 15th: Page 171-172 Lippincott Edition 10th Page.93-99	
	Enlist non-cardiac clinical uses of beta blockers	Katzang Edition 15th: Page 173 Lippincott Edition 10th Page.93-99	
	Enlist important side effects and contraindications of beta blockers	Katzang Edition 15th: Page 173.174 Lippincott Edition 10th Page.93-99	
NS-Ph-012	Name central Sympathoplegics and centrally acting alpha-2 agonists.	Katzang Edition 15th: Page 154	Centrally Ac□ng

	Explain mechanism of action, uses and side effects of alpha methyl Dopa & clonidine	Lippincott Edition 10th Page.214	Sympathoplegic Drugs
	Differentiate between alpha methyl Dopa & clonidine		

GENERAL PATHOLOGY

Sr.#	Day/Date	Topic	Facilitator	Reading Material
F-Pa-001		Define the terms: pathology, etiology & pathogenesis	Prof. dr. Shazia	Robbin's BASIC PATHOLOGY 10TH edition pg 31
F-Pa-002		Discuss causes of cell injury Describe the types and mechanism of cell injury Identify different types of cellular adaptations to stress with examples Discuss the mechanism of cellular adaptations to stress in detail	Prof. dr.Shazia Dr. Maimoona	Robbin's BASIC PATHOLOGY 10TH edition pg # 32-33 33 - 34/ 41-48 48 – 51
F-Pa-003		Identify the two types of cell death Enumerate the differences between them	Prof. dr Shazia	Robbin's BASIC PATHOLOGY 10TH edition pg # 34 – 40
F- Pa - 004		Define necrosis Identify its various types with examples	Prof. dr. Shazia	Robbin's BASIC PATHOLOGY 10TH edition pg# 35 -37
F-Pa-005		Define apoptosis with examples Describe its mechanism and pathways in detail	Prof. dr. Shazia	Robbin's BASIC PATHOLOGY 10TH edition pg # 37 38 -40
F-Pa-006		Discuss mechanism & types of intracellular accumulations	Dr. Maimoona	Robbin's BASIC PATHOLOGY 10TH edition pg# 51 -52

F-Pa-007		Define pigmentation and identify various endogenous & exogenous pigments	Dr. Maimoona	Robbin's BASIC PATHOLOGY 10TH edition pg # 52-53
F-Pa-008		Define calcification and differentiate between dystrophic & metastatic calcification	Dr. Maimoona	Robbin's BASIC PATHOLOGY 10TH edition pg # 53 – 54
F- Pa -009		Explain the changes taking place due to aging at the cellular level	Dr.Maimoona	Robbin's BASIC PATHOLOGY 10TH edition pg # 54 – 56

		MICROBIOLOGY		
Sr. #	**Date/day**	**Topic**	**Facilitator**	**Reference book**
F-Pa-010		Enlist microbes that cause infectious diseases along with important features. Differentiate between Eukaryotes & Prokaryotes.	Prof. Dr. Sadia / Dr. Sonia	Levinson's review of Medical Microbiology and Immunology 17th edition Pg.# 1 Pg # 1-2

F-Pa-11		Discuss morphology, structure of bacteria including cell wall, cytoplasmic membrane, and cytoplasm of bacteria. Discuss important structures outside cell wall & bacterial spores.	Prof. Dr. Sadia / Dr. Sonia Prof. Dr. Sadia / Dr. Sonia	Pg # 4-10 Pg# 10 – 11
		Differentiate between gram positive & negative bacterial cell wall on the basis of staining. Discuss bacterial growth curve.	Prof. Dr. Sadia / Dr. Sonia	Pg # 7 Pg# 14
		Define anaerobic & aerobic growth and discuss fermentation of sugars and iron metabolism. Define mutation and its different types and Define Recombination	Prof. Dr. Sadia / Dr. Sonia	Pg # 15 Pg # 17-20
		Discuss transfer of DNA within and between bacterial cells including conjugation, transduction, and transformation. Discuss classification of medically important bacteria.	Prof. Dr. Sadia / Dr. Sonia	Pg # 18-19 Pg # 22-23
		Define normal flora, colonizer, dysbiosis, and elaborate significance of normal flora. Discuss normal flora of different body sites including	Prof. Dr. Sadia / Dr. Sonia	Pg # 24 – 27

		oral cavity, skin, respiratory tract, intestinal tract, etc.		Pg# 25 – 26
		Define pathogen, pathogenesis, virulence factors, ID50, LD50. Discuss principles of pathogenesis.	Prof. Dr. Sadia / Dr. Sonia	Pg # 29 – 30 Pg # 30 – 42
		Enlist different types of bacterial infections and Describe stages of bacterial pathogenesis.	Prof. Dr. Sadia / Dr. Sonia	Pg # 43 -44
		Discuss determinants of bacterial pathogenesis that includes: • Transmission • Adherence to cell surfaces. • Invasion • Inflammation & intracellular survival • Toxin production • Immuno-pathogenesis	Prof. Dr. Sadia / Dr. Sonia	Pg # 30 – 42
		Enlist different strains of the same bacteria that can produce different diseases. Mechanisms of Antimicrobial Drugs	Prof. Dr. Sadia / Dr. Sonia	Pg # 43 Pg # 63 - 77

		Define typical stages of an infectious disease. Discuss role of biofilm and glycocalyx in causing infection.	Prof. Dr. Sadia / Dr. Sonia	Pg # 43 Pg# 34/10
F-Pa-012		Tabulate the differences between sterilization and disinfection. Define sterilization and disinfection and describe the various methods of sterilization.	Prof. Dr. Sadia / Dr. Sonia	Pg # 93-96 Pg # 93-96
PRACTICAL WORK				
F-Pa-013		Identify the types of necrosis on slides/ pictures		Cell Injury
F-Pa-014		Identify the cellular adaptation (atrophy, metaplasia, hyperplasia)		Cell Adaptations
F-Pa-015		Demonstrate the proper usage of hot air oven and autoclave		Microbiology Sterilization
F-Pa-016		Perform centrifugation and micro pipetting		Hematology Introduction to Lab Techniques

Sr.#	Day/Date	Topic	Facilitator	References
CF1-Pa- 001		Define genetic disorders and explain their causes	Dr. Fauzia	Reference book Levinson's review of Medical Microbiology and Immunology 17th edition Pg # 244 -247
CF1-Pa- 002		Describe different types of mutations (point mutations, insertions, deletions) with examples relevant to dentistry	Dr. Fauzia	244
CF1-Pa- 003		Explain Mendel's principles and their application to autosomal and X-linked disorder and examples relevant to dentistry	Dr. Fauzia	245
CF1-Pa- 004		Describe chromosomal abnormalities (e.g., trisomy, monosomy, translocations) and examples relevant to dentistry	Dr. Fauzia	263
CF1-Pa- 005		Define, Identify and Correlate specific syndromes with their embryological defects i. Down Syndrome ii. Turner Syndrome iii. Treacher Collins Syndrome iv. Pierre Robin Sequence v. Goldenhar Syndrome vi. Crouzon Syndrome vii. Apert Syndrome viii. Van der Woude Syndrome ix. Hemifacial Microsomia x. Cleidocranial Dysplasia xi. Nager Syndrome	Dr. Fauzia	264, 267, web sources

		xii. DiGeorge Syndrome		170,266
CF1-Pa- 006		Describe how PCR and sequencing help in genetic testing. Compare different genetic tests and their uses. Differentiate between karyotyping, sequencing, and biochemical tests. Identify the role of genetic tests in prenatal and carrier screening.		Web sources
MICROBIOLOGY				
CF1-Pa- 007		Define microbial teratogens and their role in congenital craniofacial and dental anomalies	Dr. Sadia	Web sources
CF1-Pa- 008		Define TORCH infections and identify the impact of maternal infections (TORCH complex) on embryonic development and their dental implications.	Dr. Sadia	

MODULE 4 CRANIOFACIAL

MICROBIOLOGY

Sr.#	Day/Date	Topic	Facilitator	Reference
CFII-Mic-001		Describe the composition and types of culture media (e.g., selective, differential enrichment). Compare and contrast the applications of different culture media in microbiology lab	Dr Sadia/Dr.Sonia	Reference book Monica part 2

CFII-Mic-002		Identify the factors influencing microbial pathogenicity, such as host and immune evasion	Dr Sadia/Dr.Sonia	Reference book Levinson's review of Medical Microbiology and Immunology 17th edition Pg # 32
CFII-Mic-003		Summarize the mechanism of action of major classes of chemotherapeutic agents (e.g., B-Lactams, aminoglycosides) Identifying the appropriate chemotherapeutic agent for specific bacterial infections	Integration with pharma	Pg # 68
CFII-Mic-004		Explain the genetic and biochemical mechanisms of bacterial resistance to antibiotics	Dr. Sadia/ Dr. Sonia	Pg # 83
CFII-Mic-005		Define osteomyelitis. Enlist various osteomyelitis causing Microorganisms	Dr Sadia/Dr.Sonia	Pg # 603
CFII-Mic-006		Discuss Actinomycetes with its epidemiology, virulence factors, pathogenesis	Dr Sadia/Dr.Sonia	Pg # 187

NEUROSCIENCES

PATHOLOGY/MICROBIOLOGY

Sr.#	Day/Date	Topic	Facilitator	Reference
NS-Pa- 001		Define meningitis. Identify different types of meningitis according to etiology	Dr. Maimoona	Pg # 862
NS-Pa- 002		Define concussion and contusion Enlist their clinical features	Dr. Maimoona	Pg #858
NS-Pa- 003		Enumerate various demyelinating diseases of CNS Enlist clinical features and diagnosis of Multiple Sclerosis & Guillain-Barre syndrome	Dr. Maimoona	Pg # 871 Pg # 838
NS-Pa- 004		Introduction to viruses, structure of virus, classification of DNA and RNA viruses	Dr. Sadia/ Dr. Sonia	Reference book Levinson's review of Medical Microbiology and Immunology 17th edition Pg # 218, 241
NS-Pa- 005		Discuss herpes simplex virus with its epidemiology, virulence factors, pathogenesis, lab diagnosis & prevention.	Dr Sadia/ Dr.Sonia	Pg # 287
NS-Pa- 006		Discuss varicella zoster virus with its epidemiology, virulence factors, pathogenesis, lab diagnosis & prevention.	Dr Sadia/ Dr. Sonia	Pg # 291

NS-Pa-007		Discuss Polio virus with its virulence factors, pathogenesis, lab diagnosis & prevention	Dr Sadia/ Dr. Sonia	Pg # 335
NS-Pa-008		Discuss Clostridium tetani and Clostridium botulinum with its virulence factors, pathogenesis, lab diagnosis	Dr Sadia/ Dr. Sonia	Pg # 133

BLOCK 2 MODULES 6

ALVEO-CEMENTAL COMPLEX PATHOLOGY IMMUNOLOGY

Sr.#	Day/date		Facilitator	References
ALC-Pa-001		Define acute inflammation and its pathological basis relevant to dental conditions	Prof. shazia	Robbins, basic pathology, 10th edition Pg # 60
ALC-Pa-002		Enlist stimuli for acute inflammation, including microbes, trauma, and chemical irritants relevant to oral infections.	Prof. shazia	Robbins, basic pathology, 10th edition Pg # 60
ALC-Pa-003		Classify chemical mediators of acute inflammation and their role in dental diseases such as dental abscess formation.	Prof. shazia	Robbins, basic pathology, 10th edition Pg # 70

ALC-Pa-004		Explain vascular and cellular events in acute inflammation and its relation to dental conditions like pulpitis and periodontitis.	Prof. shazia	Robbins, basic pathology, 10th edition Pg # 60
ALC-Pa-005		Describe systemic effects of acute inflammation, such as fever and leukocytosis, and their impact on dental treatment.	Prof. shazia	Robbins, basic pathology, 10th edition Pg # 77
ALC-Pa-006		Recognize microbes causing acute inflammation in dental infections like Streptococcus mutans and Porphyromonas gingivalis.	Prof. Sadia/ dr. sonia	
ALC-Pa-007		Analyze morphological patterns of acute inflammation, such as purulent or fibrinous types, in oral diseases	Prof. shazia	Robbins, basic pathology, 10th edition Pg # 78
ALC-Pa-008		Define chronic inflammation and its significance in persistent oral and systemic conditions.	Prof. shazia	Robbins, basic pathology, 10th edition Pg # 86,87
ALC-Pa-009		Identify chronic inflammatory cells, such as macrophages and lymphocytes, and mediators like TNF-α and IL-1.	Prof. shazia	Robbins, basic pathology, 10th edition Pg # 82
ALC-Pa-010		Discuss Porphyromonas and Fusobacterium with its pathogenesis.	Prof. Sadia/ dr. Sonia	

BLOCK 2
MODULE 6
ALVEO-CEMENTAL COMPLEX
PATHOLOGY IMMUNOLOGY

Sr.#	Day/Date	Topic PRACTICAL TOPICS	Facilitator	Reference
ALC-Pa-011		Identify histological slides of acute inflammation.	Prof. Shazia	Robbins, basic pathology, 10th edition Pg # 60
ALC-Pa-012		Perform a clinical examination to detect signs of acute inflammation.	Prof. Shazia	Robbins, basic pathology, 10th edition page 58
ALC-Pa-013		Distinguish between granulomatous and non-granulomatous inflammation in histological slides.	Prof. Shazia	Pg# 81
ALC-Pa-014		Identify clinical signs of chronic inflammation such as ulcers, gingival swelling, and oral lesions.	Prof. Shazia	Pg # 86,87

GENERAL PATHOLOGY				
Sr.#	**Date/day**	**Topic**	**Facilitator**	**Reference**
CVS-Pa-001		Define white blood cell (WBC) disorders and classify them into benign and malignant types. Differentiate between reactive and neoplastic WBC disorders based on clinical and laboratory findings. Recognize the causes of reactive leukocytosis (infections, stress, inflammation) that result in elevated WBC counts and its impact on planning and postoperative healing in dental patients. Explain the pathophysiology of leukemoid	Dr. Nazia / Dr. Hira	Robbin's BASIC PATHOLOGY 10TH edition Pg # 460

		reactions and leukemias.		
CVS-Pa-002		Differentiate between reactive and neoplastic WBC disorders based on clinical and laboratory findings. Explain the pathophysiology of leukemoid reactions and leukemias.	Dr. Nazia / Dr. Hira	Pg # 463
CVS-Pa-003		Define the clinical aspects of innate and acquired immunity, including active and passive immunity. List the types of immune cells, such as phagocytes, T cells, B cells, and NK cells, and explain their roles in immunity and disease progression. Describe the complement activation pathways (classical, alternative, and lectin)	Prof. Shazia	Robbins Basic pathology, 10th edition, page 122-124 page 75-77
CVS-Pa-004		List the types of antibodies (IgG, IgA, IgM, IgE, IgD) and discuss their relevance in hypersensitivity reactions.	Prof. Shazia	
CVS-Pa-005		Explain the types and pathogenesis of hypersensitivity reactions (Type I–IV) and their implications in dental conditions like latex allergies, drug reactions, and autoimmune oral lesions.	Prof. Shazia	Pg # 136 - 142
CVS-Pa-006		Define the principles of ABO and Rh blood grouping systems. State the importance of compatibility testing, including crossmatching, for safe transfusions.	DR.Nazia/ Dr.Hira	Pg # 491

		Identify scenarios in dentistry where blood grouping knowledge is essential, such as surgeries or trauma management.	Oral and Maxillofacial Surgery	
CVS-Pa-007		Define thrombosis, embolism, infarction, and hemorrhage as hemodynamic disorders relevant to systemic and oral health. Describe the types of thrombosis, including arterial and venous, and their potential impact on dental procedures, such as delayed healing or increased bleeding risks. Discuss the pathophysiology of thrombosis, focusing on Virchow's triad (endothelial injury, stasis, and hypercoagulability), and its relevance to dental patients with cardiovascular disorders.	Dr.Nazia/ Dr.Hira Integration with General Medicine Oral Pathology Oral Medicine Oral and Maxillofacial Surgery	Pg # 106 112, 114, 100
CVS-Pa-008		Explain the mechanisms and clinical features of embolism, including pulmonary and systemic embolism. Explain the pathophysiology of embolism, including detachment of thrombi and subsequent vascular occlusion, and its potential effects on oral tissues or emergency scenarios during dental care. Outline the types of infarctions (white and red) and their effects on oral tissues, such as necrosis or ischemic lesions. Describe the pathophysiology of infarction, focusing on ischemia and necrosis in oral and systemic contexts.	Dr.Nazia/ Dr.Hira	Pg # 112 Pg #114
CVS-Pa-009		Define bleeding disorders and their relevance to clinical dentistry. Classify bleeding disorders into vascular, platelet, coagulation, and mixed types.	Dr.Nazia/ Dr.Hira Integration with dental	Robbin's BASIC PATHOLOGY 10TH edition

		Enlist causes of thrombocytopenia, such as decreased production, increased destruction, or sequestration of platelets.	dept.	Pg # 485 Pg # 488
CVS-Pa- 010		List first-line laboratory investigations for bleeding disorders, including complete blood count (CBC), platelet count, bleeding time (BT), clotting time (CT), prothrombin time (PT), activated partial thromboplastin time (aPTT), and international normalized ratio (INR). Discuss interpretation of laboratory findings and their clinical correlation in diagnosing bleeding disorders (platelet & coagulation related disorder) in dental patients.	Dr.Nazia/ Dr.Hira	Hematology practical book Dacie and web sources
CVS-Pa- 011		Apply knowledge of Streptococcus viridans and Staphylococcus aureus to recognize their role in infective endocarditis and bacteremia, and their implications for dental care. Recognize oral manifestations of HIV, including candidiasis, hairy leukoplakia, and periodontal disease, in immunosuppressed patients. Identify oral ulcerations caused by Cytomegalovirus (CMV) or Epstein-Barr Virus (EBV) in immunocompromised individuals. Apply infection control protocols to prevent cross contamination and transmission of blood borne pathogens and parasites during dental procedures.	Dr.Sadia/ Dr.Sonia integration with Oral Pathology Oral Microbiology Oral Medicine	Reference book Levinson's review of Medical Microbiology and Immunology 17th edition
CVS				
CVS-Pa- 012		Define and classify types of shock (hypovolemic, cardiogenic, septic) and evaluate their pathophysiology and relevance in dental emergencies	Dr. Nazia / Dr. Hira	Robbin's BASIC PATHOLOGY 10TH edition pg# 115
CVS-Pa- 013		Correlate septicemia caused by cardiovascular pathogens (e.g., Staphylococcus aureus, Pseudomonas aeruginosa) with oral	General Medicine, Oral	

		manifestations such as petechiae or splinter hemorrhages. Identify microbial causes of myocarditis, such as Coxsackievirus and their systemic effects influencing dental care. Assess the role of oral pathogens like Treponema denticola and Porphyromonasgingivalis in contributing to cardiovascular diseases, including atherosclerosis, and integrate this knowledge into periodontal therapy.	Pathology Oral Medicine Oral and Maxillofacial Surgery	
PRACTICAL CVS				
CVS-Pa-014		Perform differential WBC count and correlate findings with clinical cases of leukocytosis or leukopenia. (Practical) Identify oral manifestations of WBC disorders (e.g., gingival bleeding, delayed wound healing). (Tutorial) Demonstrate infection control measures for patients with compromised immunity. (Tutorial)	Pathology Dental dept. Microbiology	
CVS-Pa-015		Demonstrate skin prick testing for Type I hypersensitivity reactions. (Practical) Identify oral manifestations of autoimmune diseases. (Tutorial)	Pathology, Oral Medicine	
CVS-Pa-016		Perform blood typing and crossmatching procedures. (Practical) Recognize clinical signs of transfusion reactions and their emergency management. (Tutorial) Identify scenarios in dentistry requiring knowledge of blood grouping (e.g., trauma management). (Tutorial)	Hematology, General Medicine Oral and Maxillofacial surgery	

			General Surgery	
CVS-Pa-017		Identify clinical signs of thrombosis, embolism, or hemorrhage during oral examinations. (Tutorial) Interpret lab findings related to coagulation profiles (e.g., INR, PT, aPTT). (Practical) Manage dental patients on anticoagulant therapy to minimize bleeding risks. (Tutorial)	General Medicine, Oral Pathology Oral and Maxillofacial Surgery General Surgery	

GENERAL PATHOLOGY				
Sr. #	**Day/date**	**Topic**	**Facilitator**	**Reference**
GIT-Pa-001		Define heartburn and describe its pathophysiology as a symptom of gastroesophageal reflux disease (GERD). Enumerate the etiology and clinical features of GERD and peptic ulcer disease.	Dr. Shahbaz Dr. Shahbaz	Robbin's BASIC PATHOLOGY 10TH edition pg# 593 pg # 600
GIT-Pa-002		Define peptic ulcer disease (PUD) and distinguish between gastric and duodenal ulcers. Discuss H. Pylori as Peptic Ulcer Disease causing organism, its epidemiology, virulence factors, pathogenesis, lab diagnosis & prevention Enlist causes of PUD Explain the pathogenesis of PUD	Dr. Shahbaz	Pg # 600
GIT-Pa-003		Discuss the pathophysiology of irritable bowel Syndrome	Dr. Shahbaz	Pg # 601

MICROBIOLOGY				
GITMic-001		Enlist different organisms causing oral lesions. Briefly discuss HPV, EBV, as disease causing organisms, their epidemiology, virulence factors, pathogenesis, lab diagnosis & prevention.	Dr. Sadia/ Dr. Sonia Dr. Sadia/ Dr. Sonia	Reference book Levinson's review of Medical Microbiology and Immunology 17th edition Pg # 342,295P
GITMic-002		Briefly discuss HPV, EBV, as disease causing organisms, their epidemiology, virulence factors, pathogenesis, lab diagnosis & prevention. Define terms as: constipation, Acute Diarrhea & Chronic Diarrhea, Vomiting and Dysentery Enlist different Diarrhea causing organisms. Briefly discuss E. coli with its epidemiology, virulence factors, pathogenesis, lab diagnosis & prevention. Briefly discuss Salmonella as diarrhea and typhoid causing organism, its epidemiology, virulence factors, pathogenesis, lab diagnosis & prevention. Briefly discuss Clostridium botulinum, Clostridium difficile with its epidemiology, virulence factors, pathogenesis, lab diagnosis & prevention. Briefly discuss intestinal protozoa (Entamoeba histolytica, Giardia, Cryptosporidium) with its epidemiology, virulence factors, pathogenesis, lab diagnosis & prevention.	Dr. Sadia/ Dr. Sonia Dr. Sadia/ Dr. Sonia Dr. Sadia/ Dr. Sonia Dr. Sadia/ Dr. Sonia Dr. Sadia/ Dr. Sonia Dr. Sadia/ Dr. Sonia Dr. Sadia/ Dr. Sonia	Pg # 342,295 Pg # 625 Pg # 146 Pg # 149 Pg # 132 Pg # 429

COMMUNITY DENTISTRY					
CODE	**SPECIFIC LEARNING OUTCOMES**	**TOTAL HOURS = 03**			
		INTEGRATING DISCIPLINE	**TOPIC**	**Recommended Book**	**Page Number**
ALC-CD-001	Define the key periodontal indices epidemiological studies, including indices for gingivitis, periodontitis, and plaque assessment.	Community Dentistry	Periodontal Indices	Fundamentals of Community & Preventive Dentistry *Nazli Gul Ghani, Shujaat H. Idris*	PAGE 77
ALC-CD-002	Explain the principles and methodology for measuring periodontal diseases in population-based studies.		Periodontal Indices	Fundamentals of Community & Preventive Dentistry *Nazli Gul Ghani, Shujaat H. Idris*	PAGE 77
ALC-CD-003	Describe various indices used for measuring gingivitis (e.g., Löe & Silness Gingival Index) and their significance in assessing community oral health.		Gingivitis Indices in Community Health	Fundamentals of Community & Preventive Dentistry *Nazli Gul Ghani, Shujaat H. Idris*	PAGE 76
ALC-CD-004	Discuss the different periodontitis measur		Periodontitis Measurement Methods	Fundamentals of Community & Preventive Dentistry *Nazli Gul Ghani, Shujaat H. Idris*	PAGE 82

	ement methods, including the Community Periodontal Index (CPI) and clinical attachment loss (CAL).				

CODE	SPECIFIC LEARNING OUTCOMES	TOTAL HOURS = 02			
		INTEGRATING DISCIPLINE	TOPIC		
ALC-CD-005	CPITN	Community Dentistry	Indices in Community dentistry	Fundamentals of Community & Preventive Dentistry *Nazli Gul Ghani, Shujaat H. Idris*	PAGE 80

DENTAL RADIOLOGY

CODE	SPECIFIC LEARNING OUTCOMES	TOTAL HOURS = 03		References	References
		INTEGRATING DISCIPLINE	TOPIC		

ALC-DR-001	Define the role of radiology in diagnosing and assessing periodontal diseases.	Dental Radiology	Role of Radiology in Periodontal Disease Diagnosis	Book name Interpreting Dental Radiographs Author: Brain Beeching Edition:1st Page no: 33-44	Book name (Selection Criteria Dental Radiographs) Author: K. Horner, K A Eaton Edition:3rd Page no: 65-68
ALC-DR-002	Explain the radiographic features gingivitis and periodontitis.		Radiographic Features of Health and Disease		
ALC-DR-003	Interpret key radiographic signs of periodontal disease, including crestal bone loss, widening of the periodontal ligament space, and calculus deposits.		Interpretation of Radiographic Signs in Periodontal Disease		

CODE	SPECIFIC LEARNING OUTCOMES	TOTAL HOURS = 03		References
		INTEGRATING DISCIPLINE	TOPIC	
ALC-DR-004	Identify normal periodontal structures on radiographs (OPG and periapical).	Dental Radiology	Normal Periodontal Structures on Radiographs	Book name White and Pharohs Oral Radiology Principal and Interpretation Author: Sanjay M. Mallya Ernst W.N Lam Edition:8th Publisher Elsevier Page no: 756-780
ALC-DR-005	Observe alveolar bone and assess bone levels.	Dental Radiology	Alveolar Bone Observation and Level Assessment	
ALC-DR-006	Identify the periodontal ligament (PDL) space on radiographs.	Dental Radiology	Periodontal Ligament Space Identification	

The Holy Quran

1. MODULE RATIONALE

The Holy Quran provides wisdom and knowledge to be followed in every applied component of modern civilization covering Ethical, Social, Legal, Financial and Healthcare Domains. The complete Quran encompasses the guidelines, all full of 'Hikmah' (wisdom) to deal with all practical scenarios encountering patients and health professionals. As the Holy Quran is the guiding light for humanity and a way of life for all the believers of one true Allah, therefore, understanding the message of this Holy Book is mandatory for realizing the duties which one has towards other human beings in general and the profession in particular. Holy Quran is a guide for the modern society and scientific development therefore, orbiting around Quranic doctrines and axioms of Hadith, all challenges faced by modern healthcare can be solved. Therefore, this longitudinal curriculum is developed so that all health professionals can get, as enunciated by the Holy Quran itself, "the best of this world as well as the best of the Hereafter".

2. VISION & MISSION

2.1 : Vision: Building the personality and character of health professionals in light of teachings of the Holy Quran and Sunnah, to alleviate human sufferings.

2.2 : Mission: Teaching Holy Quran and Sunnah to undergraduate students of Health Sciences, building their personality and character, enabling them to apply these principles in patient care and innovative research.

3. CURRICULUM DESIGN AND ORGANIZATION

3.1 : Course Aim: The Holy Quran course aims to imbibe Health profession students with professionalism, general and medical, based on Divine teachings. The professionals thus groomed shall be able to correlate religion with healthcare delivery and modern science with an understanding that evidence-based practice itself originated from the system by which the "Hadith" was preserved after centuries.

3.2 : Mode of Delivery: The module will be taught in the form of interactive lectures.

3.3 : Learning Experience: Classroom environment will be used.

3.4 : Attendance: Eighty five percent (85%) attendance is mandatory to be eligible to sit in the professional examination.

3.5 : Course Modules for Year 1 and Year 2

The curriculum will be taught under three Major Sections

- Faith
- Worship
- Specific Quranic Commandments

3.6 : Module Credit hours & Contact hours: This will be a three (03) credit hour course where each credit hour will be equivalent to eighteen (18) contact hours.

3.7 : Assessment Portfolio

The assessment will be done through student portfolios based on four written assignments and two quizzes per year. The portfolio submission to the Quran teacher will be mandatory for sending admission to the university and sitting in the professional examination. The assignments will be based on the topics discussed during the year. One will be given after first half of the course will be completed for the year and second will be given at the completion of the Quran course.

3.8 : Reference Material

- Translations of the Holy Quran approved by the Quran Board
- Six Authentic Books of Hadith

3.9. Module Faculty

At least one full time faculty member (Lecturer or above) will be hired for running the Holy Quran course throughout four years. The qualifications of the faculty member will be certified by the academic council of the college/institution to be declared as the teacher of Holy Quran
course.

Quran: Year-1

SECTION ONE: FAITH (AQAID)

LEARNING OUTCOMES

a. Oneness of Allah (SWT) (Tawheed)

i. Describe Unity of Allah in being
ii. Describe Unity of Allah in attributes
iii. Describe concept of Shirk
iv. Impact of Tawheed in human life

b. Prophethood (Risalat)

i. Explain Significance of Risalat
ii. Identify Prophets as role models
iii. Recognize finality of Prophethood - Prophet Muhammad (PBUH)

c. Belief in Hereafter (Aakhirat)

i. Appraise continuity of life beyond material world
ii. Concept of Doomsday and its various stages
iii. Concept of Day of Judgment and accountability in the Hereafter
iv. Concept of "Meezan"

d. Divine Revelations (Holy Books)

i. Explain the divine decree in sending the Holy Books
ii. Identify the Holy Quran as the only preserved & authenticated divine revelation to date
iii. Interpret Quran as Furqan

e. Angels

i. Discuss belief in angels and its significance
ii. Describe the universal role of angels (their specific duties)

f. Qadr

i. Identify Taqdeer as Knowledge of Allah
ii. Explain the concept of Faith in Good and Evil

CONTENTS

1. Oneness of Allah subhan wa taala (Tawheed)
2. Prophethood (Risalat)
3. Belief in Hereafter (Akhirat)

4. Devine revelations (Holy Books)

SECTION TWO: WORSHIP (IBADAAT)

LEARNING OUTCOMES

a. Prayer (Namaz)

i. Recognize the importance of physical purity (Taharah)
ii. Discuss the philosophy of prayer and its role in purification of soul
iii. Recognize the importance of prayer in building personal character - sense of duty, patience, perseverance, punctuality and self/social discipline
iv. Spiritual, moral and social impact of prayer in building of righteous community
v. Role in creating brotherhood, equality and unity in ummah
vi. Identify the conditions in which relaxation in prayer is allowed e.g. during operation, travelling etc.

b. Obligatory Charity (Zakat)

i. Identify obligatory importance of Zakat and other items as outlined under the title of 'Infaq-fee- sabilillah'
ii. Categorize the people who can be the beneficiaries of Zakat
iii. Role of zakat in eradication of greed and love of material world
iv. Effect of Zakat and sadaqat in circulation of wealth and alleviation of poverty
v. Explain the essence of zakat and sadaqat in building just communities
vi. Describe the role of state in collection and disbursement of zakat

c. Fasting (Roza)

i. Discuss the importance and significance of fasting
ii. Relate the Holy Quran and the month of Ramadan
iii. Role of fasting in building personal qualities like self-control, piety and soft corner for the poor and needy persons
iv. Identify the applications of "Taqwa" through fasting

d. Pilgrimage (Hajj)

i. Discuss the importance and significance of Hajj
ii. Identify the conditions in which Hajj becomes an obligation
iii. Role of manasik-e-Hajj in producing discipline and complete submission
iv. Recognize the importance of Hajj in uniting the ummah
v. Sacrifice for Allah subhan wa taala (essence of qurbani)

TOPIC AREAS
1. Prayer (Salah/Namaz) 2. Obligatory charity (Zakat) 3. Fasting (Saum/Roza) 4. Pilgrimage (Hajj)

Quran: Year-2

SECTION THREE: SPECIFIC QURANIC COMMANDMENTS
LEARNING OUTCOMES

a. Importance of the protection of Human life

i. Concept of the sanctity of human life in Quran and Sunnah

ii. Importance and significance of a single human being even during war

iii. Concept of punishment in regard to the killing of a human being, voluntarily or involuntarily

b. Jihad

i. Concept of Jihad and its significance (hikmat)

ii. Different forms of Jihad and their importance

iii. Principles and preparation of Jihad

iv. Devine reward of Jihad

c. Heirship/Inheritence (Virasat)

i. Heirship and division of wealth in accordance with divine teachings

ii. Heirs and their shares

iii. Legal aspect of virasat (Hud-e-Illahi)

d. Amar-bil-maroof-wa-Nahi-anil-munkar

i. Differentiation between Maroof and Munkar

ii. Importance and significance (effects of avoiding this principle)

iii. Necessary conditions of both amar-bil-maroof and nahi-anil-munkar

iv. The different stages and the necessary prerequisites

e. Hadood-e Illahee and taazeerat

i. Meaning and various types of hadood-e-Illahee
ii. Authority for fixation of limit (hudd)
iii. Criteria and permissible relaxation in fixing the limits
iv. Difference between 'Hadood', 'Qisas' and 'Tazeerat'. Punishments which are left to the court of law
v. Benefits for the good of community

f. Justice (Adal-o-insaf)

i. Justice of Allah subhan wa taala
ii. Importance of justice for the survival of community
iii. Need of justice to be prevailed irrespective of religion
iv. Devine reward for fair justice

g. Business (Bay-o-tijarat)

i. Importance of fair business and its necessary constituents
ii. Permissible and impermissible conditions of businesses
iii. Concept of loan in businesses

h. Interest (Riba or Sudi karobar)

i. Meaning of Riba or interest and its different forms
ii. Impact of Riba on a society in general
iii. Devine declaration and its punishment both in this world and Hereafter

i. Nikah-o-talaq

i. Basic rulings regarding marriage and divorce
ii. Importance of Nikah and its constituents

MODULE RATIONALE

This module comprises of Islamiyat & Pakistan Studies. All the medical or other curricula relate to our core context and internal fiber. The study of religion and country endorses all relevancy and competency acquisition for the purpose of service to humanity and community orientation.

iii. Conditions of Nikah and various forms of prohibited/impermissible nikah
iv. Misconception of dowry
v. Talaq and its various forms
vi. Meaning of Khula and its conditions

CONTENTS

1. Importance of the protection of Human life
2. Jihad
3. Heirship/Inheritence (Virasat)
4. Amar-bil-maroof-wa-Nahi-anil-munkar
5. Hadood-e Illahee and taazeerat
6. Justice (Adal-o-insaf)
7. Business (Bay-o-tijarat)
8. Interest (Riba or Sudi karobar)
9. Nikah-o-talaq

ISLAMIYAT (Total Hours = 30)

A short course on Islamic Studies will be completed in First and Second year with an exam at the end of second year.

Course Content:

1. Understand the basic principles of Islam.
2. Explain the concept of the Islamic state.
3. Explain the Quran as a guide for modern society and scientific development.
4. Describe the life of the Holy Prophet Peace be upon him as an example to follow.
5. Explain ethics in the Islamic prospective.
6. Describe the rights of the individual in Islam.
7. Describe the rights of women and children in Islam.
8. Explain the contribution of Islamic scholars to science and medicine.
9. Understand Islam in terms of modern scientific development.
10. Explain the concept of Rizk-e-Hilal.
11. Explain the concept of Hukook-ul-Ibad.

PAKISTAN STUDIES (Total Hours = 30)

A short course on Pakistan Studies will be completed in First and Second year with an exam at the end of second year.

Course Content:

1. Describe brief the salient features of the Pakistan movement.
2. Explain the basis for the creation of Pakistan.
3. Give a brief account of the history of Pakistan.
4. Explain the ethnic and cultural distribution of the population of Pakistan.
5. Describe the Provinces and resources available in Pakistan.
6. Explain current problems faced by Pakistan.
7. Describe the social, economic and health problems of the rural population of Pakistan.

ISLAMIYAT AND PAKISTAN STUDIES BOOKS

- Standard Islamiyat (Compulsory) for B.A, B.Sc., M.A, M.Sc., MBBS by Prof. M.Sharif Islahi Ilmi Islamiyat (Compulsory) for B.A. B.Sc., & equivalent.
- Pakistan studies (Compulsory) for B.A. B.Sc., B.Com., Medical/Engineering by Prof. Shah Jahan Kahlun
- Pakistan studies (Compulsory) for B.A, B.Sc., B.Com., B.Ed., Medical/Engineering by Prof. Shah Jahan Kahlun

PRISME

BLOCK II

Domain	Topic & References	Integrated Subjects / Learning Objectives	
		Hours= 30	
	Introductory Lecture: Introduction to Professionalism and its Attributes (AMEE guide 61)	Behavioral Sciences	Define Professionalism Discuss Different Attributes of Professionalism

Professionalism	**Ethics and Morals in Dentistry** GDC Professional Standards: https://standards.gdc-uk.org/ PM&DC Ethical Guidelines Articles from Academic Medicine on Professionalism in Health Education IPEC Core Competencies: https://www.ipecollaborative.org/ipec-core- competencies FGDP: https://www.fgdp.org.uk/ ADEA Competencies: https://www.adea.org/professionalism ADEA Resources: https://www.adea.org/ethics ADC Professional Competencies:https://adc.org.au/files/accreditation/competencies/ADC_Professional_Competencies_of_the_Newly_Qualifie d_Practitioner.pdf Gibbs Reflective Cycle Guide: Creately – Gibbs Cycle	Behavioral Sciences	Understand and describe ethical codes (GDC, ADA, PM&DC)
Research Reference Book: Text Book of Preventive & Commun	Introduction to Research (Part IV: Pg 508)	Community Dentistry & Public Health	Define research and its types Explain the need for research in healthcare Recognize research applications
	Types of Research (Part IV: Pg 508)	Community Dentistry & Public Health	Distinguish between qualitative and quantitative research Define basic, applied, clinical, and translational research

ity Dentistry (S.S Hiremath 2nd Edition	**Research Cycle** (Part IV: pg 508)	Community Dentistry & Public Health	Identify and describe key stages of the research cycle
	Literature Search I (Hands on)	Community Dentistry & Public Health / All subjects	Conduct effective literature searches through searching databases (PubMed, Google Scholar etc.)
			Learn research through keywords and MESH terminologies
	Literature Search II (Hands on)	Community Dentistry & Public Health / All subjects	Conduct literature search in computer lab (By the students) Conduct effective literature searches through searching databases (PubMed, Google Scholar etc.) Learn research through keywords and MESH terminologies
	Literature Review I IMRAD article: Resource: How to critically appraise a research paper (Derek Alderson)	Community Dentistry & Public Health / All subjects	Identify the structure of research article (IMRAD) Critically review scientific papers (Observational Studies only). Identify problem and gap in scientific literature
	Literature Review II	Community Dentistry & Public Health / All subjects	Critically review scientific papers (Observational Studies only). Identify problem and gap in scientific literature

	Assessment I	Community Dentistry & Public Health / All subjects	Conduct Mock exercise of literature review to be carried out led by faculty *(To be attended by all research propos al/ synopsis supervisors for second year BDS)*
Informa tics	**Define** informatics and differentiate it from IT, data science and computer science		Introduction to Informatics
	Describe the data-information-knowledge- wisdom (DIKW) hierarchy using dental examples		
	Explain how informatics supports evidence- based practice and patient-centered care in dentistry.		
	Define Artificial Intelligence.		Foundations of Artificial Intelligence (non- coding)
	Enlist the types of Artificial Intelligence (AI) based on capabilities and functionality		
	Define Generative AI and which Category of Artificial Intelligence does it belong?		
	Define and Enlist Types of Generative AI i.e. Single Modality Generative AI and Multimodal Generative AI Model along with Examples		
	Compare and Contrast between Large Language Models (LLM) and Large Multimodel Models (LMM). Also compare both the models with conventional rule base AI.		
	Describe World Health Organization's ethical principles for AI in health. https://www.who.int/news/item/28-06-2021-who- issues-first-global-report-on-ai-in-health-and-six-guiding-principles-for-its-design-and-use https://iris.who.int/bitstream/handle/10665/34199 6/9789240029200-		Ethical, Social and Legal Implications of AI

	eng.pdf?sequence=1		
	• Explain the principles and applications of Artificial Intelligence (AI) in various dental specialties, and evaluate its current use in diagnostic and clinical practices, particularly in low- and middle-income countries (LMICs). • Critically assess the challenges, ethical considerations, and future opportunities for integrating AI into dental education and practice in LMIC settings. https://bmcoralhealth.biomedcentral.com/articles/10.1186/s12903-024-03970-y		
	Explain cognitive-load limit and **recognise** at least three cognitive-load pitfalls in slide design (extraneous text, visual clutter, distracting animations).		

	List and explain the core design rules for slide decks 1. 6 × 6 Rule 2. One Idea per Slide 3. High Contrast 4. Readable Fonts 5. Consistent Visual Hierarchy 6. Balanced Whitespace 7. Quality Imagery over Text 8. Colour-Blind–Safe Palette 9. Minimal Animation Accessible Content		Fundamental Principles & Psychology of Presentation
	Describe the psychological principles that affect legibility, including appropriate font size, dyslexia- friendly typefaces, and optimal line spacing.		
	Explain how colour psychology influences audience attention, emotion, and memory during a presentation.		
	Outline and illustrate the multimedia-learning principles of dual coding, signalling, and segmenting as methods for turning a cluttered slide into an audience-friendly format.		
	Describe the components of visual hierarchy (titles, headings, call-outs) that guide audience gaze across a three-slide sequence.		
	Distinguish between decorative and informative graphics, noting which add genuine cognitive value		
	Discuss common cues of audience disengagement and suggest straightforward remedies based on presentation-psychology insights.		

	Identify key interface elements (Ribbon, Quick- Access Toolbar, status bar). • **Recognise** the difference between character and **Demonstrate** saving, exporting to PDF and printing a document.		Microsoft Word Fundamentals
	PRACTICALS **Generate** a patient-friendly post-op instruction sheet via Gen-AI with ≥90 % factual accuracy after peer-review. **Modify** the prompt to accommodate dyslexic patients (font & readability) and patients with low health literacy.		Generative AI
	Generateand**interpret** a basic frequency report (e.g., count of missing teeth) on DIKW hierarchy on Word Document with proper formatting of the draft.		Informatics
	Transform one *"busy"* slide from the PDF into a compliant version that integrates key design rules, colour codes, layout grid, accessibility, and multimedia-learning principle **Run** MS Accessibility Checker and correct critical errors.		Fundamentals of Presentation
	Design and present on any topic related to the subjects being taught that integrates key design rules, accessibility, and multimedia-learning principle.		
	Critique a peer's slide deck for adherence to accessibility standards		

	and provide constructive feedback.		
Social Responsibility, Cultural Sensitivity & Accountability including Ethics and Jurisprudence Reference HANDBOOK OF BEHAVIORAL SCIENCES BY MH RANA	**Introduction to Social Responsility Section D: Sociology and Anthropology** (p.125-141) • Sociology and Health • Anthropology and Health	Behavioral Sciences & DDE	Define the concept of social responsibility.
	Cultural Identity, Norms, and Beliefs in Oral Health Section D: Sociology and Anthropology (p.125-141) • Anthropology and Health Section E: Psychosocial Peculiarities of Dentistry (p.170)	Behavioral Sciences	Discuss the role of dentists in promoting social welfare through professional practice. Analyze how cultural backgrounds influence oral health beliefs and behaviors. Develop strategies for delivering culturally inclusive dental care.
	Understanding Social Determinants of Oral Health Section D: Sociology and Anthropology (p.125-141) • Sociology and Health Section E: Psychosocial Aspects of Health and Disease (p.143-174)	Behavioral Sciences	Define key social determinants affecting oral health. Explain the impact of income, education, and housing on oral hygiene behaviors. Identify social barriers to accessing oral health services. Apply real-world examples showing how non-clinical factors influence oral health behaviors.

	Community Participation, Mutual Respect, and Service Ethics **Section B: Medical Ethics and Professionalism** (p.36-61) • Professionalism in Health Care • Doctor-Patient Relationship Section D: Sociology and Anthropology (p.125- 141)	Behavioral Sciences	Discuss the importance of mutual respect in community engagement. Describe ethical practices for health promotion in dentistry. Explain informed consent in the context of community dental outreach. Assess the role of cultural sensitivity in ethical community dental services.
	Dentist's Role in Public Advocacy **Section B: Medical Ethics and Professionalism (p.36-61)** • Responsibilities of the Doctor • Professionalism in Health Care	Behavioral Sciences	Identify the dentist's role in improving community oral health beyond clinical settings. Describe the impact of public education campaigns on oral health awareness. Highlight priority oral health issues requiring advocacy. Justify the dentist's role in shaping oral health policies for community benefit.
Management & Entrepreneurship	**Introduction to Management** Antoniadou, M. Leadership and Managerial Skills in Dentistry: Characteristics and Challenges Based on a Preliminary Case Study. Dent. J. 2022, 10, 146. https://doi.org/10.3390/dj10080146 Satwik, A. T. (2016). Practice management skills of graduating dental students entering the work force. Journal of Pharmaceutical Sciences and Research, 8(9), 1094.	DDE	Define basic management concepts and explain their relevance in a dental healthcare setting.

	Time Management https://www.ada.org/resources/practice/practice- management/office-hours and https://pubmed.ncbi.nlm.nih.gov/37208799/	DDE (Students Academic time manageme nt skills workshop)	Demonstrate techniques to manage academic time management

ASSESSMENT POLICY/ STATUTES

1. The First Professional BDS Examination shall be held at the end of the first year.

2. Every candidate shall be required to study contents of relevant to Each Block and will be assessed accordingly. PRISME (Professionalism, Research, Informatics, Social Responsibility including Ethic and Jurisprudence, Management and Entrepreneurship including Leadership and Evidence Based Dentistry) will be portfolio (log book) based for First year and will be counted towards Internal Assessment of Block 2 and Block 3.

3. The teaching and assessment shall be done in three modular blocks.

4. There will be four papers in the first professional examination.

First Professional Exam:

a. Paper I will be based on contents of Block 1;

b. Paper II will be based on contents of Block 2;

c. Paper III will be based on contents of Block 3;

d. Paper IV will be based on contents of Islamic studies/Civics and Pakistan Studies

5. Each paper will comprise of two components "Written" and "Oral/Practical/Clinical" examinations.

6. The "Written" and "Oral/Practical/Clinical" examination in each paper will carry **150** marks each, making the total marks of **300** for each of the papers 1,2, and 3 (inclusive of Internal Assessment).

7. Total marks for the First Professional Examinations shall be **1000**, each. Marks of Islamic Studies/Civics and Pakistan Studies shall not be counted towards total marks of First Professional examination, and determination of position or merit of a candidate. However, the candidates failing in the subject of Islamic Studies/Civics & Pakistan Studies, while passing other subjects of First professional examination, may not be subjected to detention, as the subject has no contribution towards total marks of any professional examination, and determination of position or merit. The students may rather be allowed to pass the examination in the subject, before appearing in their final professional BDS examination, and in case of their failure to clear the subject they may not be allowed to take their final professional BDS examination.

8. **Written Examination**

   a. The written component of Papers 1, 2, and 3 will consist of 'One-best-type' Multiple Choice Questions (MCQ)and Structured Essay Questions (SEQ)

   b. Each MCQ will have five options (one best response and four distractors) and will carry one (**01**) mark.

   c. There will be no negative marking.

   d. There will be no sections within an SEQ, and it will be a structured question with five (**04**) marks each.

   e. SEQ's will only be based on the major content areas of the year.

   f. There will be total of **80** MCQs and **10** SEQs in every written paper in Papers1,2, and 3.

   g. The duration of each written paper will be **190** minutes (**03 hours &10 min**).

   h. The MCQ section will be of **80** minutes duration and the SEQ section of **110** minutes.

9. **Oral/Practical/Clinical Examination**

   a. The 'Oral/Practical/Clinical' component of each Papers 1, 2, and 3 will consist of a total of Sixteen (16) OSPE/OSCE/OSVE stations in each 'Oral/Practical/Clinical' examination.

   b. There will be Eight (08) Observed interactive OSVE (Objective Structured Viva Examination) and Eight (08) OSPE/OSCE Stations. Each OSVE station will have a structured viva, to assess a practical component along with evaluation of the underlying principle relevant to that practical with a component of applied/practical knowledge and related clinical application.

c. Each OSPE/OSCE station will carry nine (09) marks.

d. Each OSVE station will carry sixteen (06) marks

e. Time for each OSPE. OSCE and OSVE station will be Six (06) minutes.

f. The MCQ section will be of **80** minutes duration and the SEQ section of **110** minutes.

10. **Oral/Practical/Clinical Examination**

a. The 'Oral/Practical/Clinical' component of each Papers 1, 2, and 3 will consist of a total of Sixteen (16) OSPE/OSCE/OSVE stations in each 'Oral/Practical/Clinical' examination.

b. There will be Eight (08) Observed interactive OSVE (Objective Structured Viva Examination) and Eight (08) OSPE/OSCE Stations. Each OSVE station will have a structured viva, to assess a practical component along with evaluation of the underlying principle relevant to that practical with a component of applied/practical knowledge and related clinical application.

c. Each OSPE/OSCE station will carry nine (09) marks.

d. Each OSVE station will carry sixteen (06) marks

e. Time for each OSPE. OSCE and OSVE station will be SIx (06) minutes.

11. Every candidate shall take the examination in the following Blocks (modules) in First Professional BDS Examinations: -

Paper Block/s Marks

I. Block 1 (Foundation + Craniofacial-I + Cariology)**300**

II. Block 2 (Craniofacial-I + Neurosciences + Alveo- cemental complex)

300

III. Block 3 (Blood & Cardiovascular system+ Gastrointestinal Tract + Occlusion-I)

A. **Block 2 (Craniofacial-I + Neurosciences + Alveo- cemental complex)**

The examination in Block 2 shall be as follows: -

I. One written paper of 120 marks having two parts:

i. Part I shall have eighty Multiple Choice Questions (MCQs) of total 80 marks (01 mark for each MCQ) and the time allotted shall be 80 minutes. There will be no negative marking.

i. Part II shall have Ten(10) Structured Essay Questions (SEQs) of total 40 marks (04 marks for each SEQ) and the time allotted shall be 110 minutes.

II. 'Oral/Practical/Clinical' examination shall have 120 marks in total.

III. The continuous internal assessment through '**Block Examination'**, conducted by the college of enrollment shall carry **60** marks, i.e., 20% of the total allocated marks (300) for the block. The score will be equally distributed to the Written and 'Oral/Practical/Clinical' Examination.

Block 2 **Modules** (Craniofacial-I + Neurosciences + Alveo- cemental complex	Part I MCQs (80)	80 Marks	Practical / Clinical Examination	06 OSPE 02 OSCE 08 OSVE	Marks 54 18 48	**300**
	Part II SEQS (10)	40 Marks				
	Internal Assessment 10%	30 Marks	Internal Assessment 10%	30 Marks		
	Total	**150**	Total	**150**		

Block 2 Internal Assessment for Theory Examination - 30 Marks

TABLE OF SPECIFICATIONS

BDS Integrated Curriculum 2K25, 1st Professional Exam							
BLOCK 2 - ASSESSMENT PARAMETERS AND DIVISION OF MARKS							
Subject	**Written Exam**			**Oral/Practical Exam**			
	MCQ (1 mark and 1 minute each)	**SEQ** (4 marks each and 11 minutes for each SEQ)	**Marks**	**OSPE** (9 Marks Each and 6 minutes each)	**OSCE** (9 Marks Each and 6 minutes each)	**OSVE** (6 Marks Each and 6 minutes each)	**Marks**
Anatomy	18	2	**26**	1	0	1	**15**

Scoring Parameter	Percentage Allocation	Marks Allocation
Attendance in lectures*	20%	6
Block Examination (Theory)	50%	15
Continuous Assessment (Class Tests, Mock Exam, Assignments, Attitudes)	30%	9
Total	**100%**	**30**

* Attendance Marks will be according to the following criteria:

1. if 85 % = Eligible
2. if > 90% ≤ 93 % = 3 marks
3. if > 93% ≤ 95 % = 5 marks

3. if > 95% = 6 marks

Block 2 Internal Assessment for Practical/ Tutorials Examination - 30 Marks

Scoring Parameter	Percentage Allocation	Marks Allocation
Attendance in Practicals/ Tutorials*	20%	6
Block Examination (Practical/ Oral Examination)	50%	15
Continuous Assessment/ Log Books- Portfolio for PRISME / Practical Notebooks/ Assignments / Attitudes	30%	9
Total	**100%**	**30**

* Attendance Marks will be according to the following criteria

1. if 85 % = Eligible
2. if > 90% ≤ 93 % = 3 marks
3. if > 93% ≤ 95 % = 5 marks

3. if > 95% = 6 marks

STUDY PLAN

Lahore Medical & Dental College
Canal Bank North, Tulspura, Lahore-53400
Contact No: +923464418891-98
E-mail: info@lmdc.edu.pk
No. LMDC/FD/ /25 dated

Block – II TIMETABLE 1st YEAR BDS Session 2024-2025 Module IV (3 WEEKS)

Day	8:00 am to 9:00 am	9:00 am to 10:00 am	10:00 am to 11:00 am	11:00 am to 12:00 pm	12:00 pm to 12:20 pm	12:20 pm to 1:20 pm	1:20 pm to 2:20 pm	2:20 to 3:00 pm
Monday	Anatomy Lecture/Tutorial Lecture Theatre 8	Anatomy DH	Physiology Lecture Lecture Theatre 8	Biochemistry Lecture Lecture Theatre 8	BREAK	Anatomy Lecture/Tutorial Lecture Theatre 8	Anatomy Lecture/Tutorial Lecture Theatre 8	Biochemistry Lecture Lecture Theatre 8
Tuesday	Physiology Lecture Lecture Theatre 8	Oral Biology Lecture Lecture Theater 8	Oral Biology Tutorial Lecture Theatre 8	Biochemistry Lecture Lecture Theatre 8		Pharmacology Lecture Lecture Theatre 8	1:20 pm to 3 pm PRACTICALS Oral Biology Oral Biology Lab	
Wednesday	Anatomy Lecture/Tutorial Lecture Theatre 8	Biochemistry Lecture Lecture Theatre 8	Oral Biology Tutorial Lecture Theatre 8	Pathology/ Microbiology Lecture Theatre 8		Anatomy Lecture/Tutorial Lecture Theatre 8	1:20 pm to 2:00 pm Anatomy Lecture/Tutorial Lecture Theatre 8	2:00 pm to 3:00 pm Oral Biology Lecture Lecture Theatre 8
Thursday	Biochemistry Lecture Lecture Theater 8	Oral Biology Lecture Lecture Theater 8	Physiology Lecture Lecture Theatre 8	Islamiyat/PRISME Lecture Theatre 8		Pathology/ Microbiology Lecture Theatre 8	1:20 pm to 2:10 pm Anatomy Lecture/Tutorial Lecture Theatre 8	2:10 pm to 3:00 pm Anatomy Lecture/Tutorial Lecture Theatre 8
Friday	Oral Biology Lecture Lecture Theater 8	Biochemistry Tutorial Lecture Theatre 8	Physiology Lecture Lecture Theatre 8	Anatomy Tutorial Lecture Theatre 8	12:00 pm to 1:00 pm Islamiyat/PRIME Lecture Theatre 8	1:00 pm to 3 pm SDL		

NO. LMDC/FD/ /2025, Dated:

Copy for information to the:

1. Heads of all concerned departments.
2. Dental Education Department, LMDC, Lahore
3. Director Administration, Lahore Medical and Dental College, Lahore
4. Director I.T. Operation, LMDC
5. Assistant Director Student's affairs, LMDC.
6. M/S Ali Tours
7. Lecture Theatre In-charge.
8. Notice Board, LMDC, Lahore.
9. Class Representatives (Boys/ Girls)

PRINCIPAL / DEAN
(PROF. Dr. AQIB SOHAIL)
DENTAL COLLEGE, LMDC

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E-mail: info@lmdc.edu.pk
No. LMDC/FD/ /25 dated

Block – II TIMETABLE 1st YEAR BDS Session 2024-2025 Module V (5 WEEKS)

Day	8:00 am to 9:00 am	9:00 am to 10:00 am	10:00 am to 11:00 am	11:00 am to 12:00 pm	12:00 pm to 12:20 pm	12:20 pm to 1:20 pm	1:20 pm to 2:10 pm	2:10 pm to 3:00 pm
Monday	Anatomy Lecture/Tutorial Lecture Theatre 8	Anatomy Dissection Hall	Physiology Lecture/Tutorial Lecture Theatre 8	Biochemistry Lecture/Tutorial Lecture Theatre 8	BREAK	Pharmacology Lecture Lecture Theatre 8	Physiology Lecture/Tutorial Lecture Theatre 8	Pathology/ Microbiology Lecture Lecture Theatre 8
Tuesday	8:00 am to 8:50 am	8:50 am to 10:20 am	10:20 am to 11:10 am	11:10 am to 12:00 pm		Pharmacology Lecture Lecture Theatre 8	Anatomy Lecture/Tutorial Lecture Theatre 8	Physiology Lecture/Tutorial Lecture Theatre 8
	Physiology Lecture/Tutorial Lecture Theatre 8	PRACTICLE Physiology	Physiology Lecture/Tutorial Lecture Theatre 8	Biochemistry Lecture/Tutorial Lecture Theatre 8				
Wednesday	Pathology/ Microbiology Lecture Lecture Theatre 8	8:50 am to 10:20 am PRACTICLE Physiology	10:20 am to 11:10 am Physiology Lecture/Tutorial Lecture Theatre 8	Anatomy Lecture/Tutorial Lecture Theatre 8		Physiology Lecture/Tutorial Lecture Theatre 8	Physiology Lecture/Tutorial Lecture Theatre 8	Pharmacology Lecture Lecture Theatre
Thursday	8:00 am to 9:00 am	9:00 am to 10:00 am	10:00 am to 11:00 am	11:00 am to 12:00 pm		Pathology/ Microbiology Lecture Lecture Theatre 8	Physiology Lecture/Tutorial Lecture Theatre 8	Anatomy Lecture/Tutorial Lecture Theatre 8
	Biochemistry Lecture/Tutorial Lecture Theatre 8	Pharmacology Lecture Lecture Theatre	Physiology Lecture/Tutorial Lecture Theatre 8	Islamiyat/PRISME Lecture Theatre 8				
Friday	Pharmacology Lecture Lecture Theatre	Biochemistry Lecture/Tutorial Lecture Theatre 8	Physiology Lecture/Tutorial Lecture Theatre 8	Anatomy Tutorial Lecture Theatre 8	12:00 pm to 1:00 pm Islamiyat/PRIME Lecture Theatre 8	1:00 pm to 3 pm SDL		

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Block – II TIMETABLE 1st YEAR BDS Session 2024-2025 Module VI (2 WEEKS)

Day	8:00 am to 9:00 am	9:00 am to 10:00 am	10:00 am to 11:00 am	11:00 am to 12:00 pm	12:00 pm to 12:20 pm	12:20 pm to 1:20 pm	1:20 pm to 2:20 pm	2:20 to 3:00 pm
Monday	Pathology Practical Pathology LAB		Periodontology Lecture Lecture Theatre 8	Oral Biology Lecture Lecture Theatre 8	BREAK	Radiology Lecture Lecture Theatre 8	PRACTICAL Radiology	
Tuesday	Community Dentistry Lecture Lecture Theatre 8	Oral Biology Lecture Lecture Theater 8	Oral Biology Tutorial Lecture Theatre 8	Pathology Lecture Lecture Theatre 8		Oral Biology Lecture Lecture Theatre 8	1:20 pm to 3 pm PRACTICAL Oral Biology Oral Biology Lab	
Wednesday	Radiology Lecture Lecture Theatre 8	Oral Biology Lecture Lecture Theatre 8	Oral Biology Tutorial Lecture Theatre 8	Pathology Lecture Lecture Theatre 8		Periodontology Lecture Lecture Theatre 8	1:20 pm to 2:00 pm PRACTICAL Periodontology	2:00 pm to 3:00 pm
Thursday	Periodontology Lecture Lecture Theatre 8	Oral Biology Lecture Lecture Theater 8	Radiology Lecture Lecture Theatre 8	Islamiyat/PRISME Lecture Theatre 8		Community Dentistry Lecture Lecture Theatre 8	1:20 pm to 2:10 pm PRACTICAL Community Dentistry	2:10 pm to 3:00 pm
Friday	Oral Biology Lecture Lecture Theater 8	Community Dentistry Lecture Lecture Theatre 8	Islamiyat/PRISME Lecture Theatre 8	Pathology Lecture Lecture Theatre 8	12:00 pm to 1:00 pm Islamiyat/PRISME Lecture Theatre 8	1:00 pm to 3 pm SDL		

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