STUDY GUIDE INTEGRATED 2025
1ST YEAR BDS
BLOCK III

LAHORE
MEDICAL & DENTAL
COLLEGE

TABLE OF CONTENTS

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				
Block 3 Module 7				**Snell's Clinical Anatomy by Regions 2025-2026 Edition**
CODE	**SPECIFIC LEARNING OUTCOMES**	**TOTAL HOURS = 13**		
		INTEGRATING DISCIPLINE	**TOPIC**	
CVS-A-001	Describe the Blood components Describe the structure of heart wall and functioning of heart Classify and exemplify various types of blood vessels	General Anatomy **(Laiq Hussain Siddiqui General Anatomy 7th Edition)**	Circulatory system	Pg. 99-100 Pg. 101 Pg.101-109
	Describe and exemplify various types of anastomoses Describe three circulatory routes Define portal system and describe its two varieties Describe the vascular supply of blood vessels Describe various components of lymph vascular system			P Pg.109-110 Pg.110-114 Pg.114-116 Pg.116 Pg.116-119
CVS-A-002	Describe the boundaries and contents of cubital fossa Describe the clinical significance of cubital fossa: taking blood pressure and collecting blood sample	Gross Anatomy	Phlebotomy	Pg. 111 Pg.112

CVS-A-003	Describe the superficial veins, muscles, nerves and vessels of flexor/anterior compartment of forearm Describe the clinical significance of median forearm vein.	Gross Anatomy	Phlebotomy	Pg.111 Pg.113
CVS-A-004	Describe the superficial veins, muscles, tendons, vessels and nerves of dorsum of hand Describe the boundaries, contents and Describe the clinical importance of dorsal venous arch, cephalic and basilic veins	Gross Anatomy	Phlebotomy	Pg.130-137 Pg.122 Pg.158-159

PRACTICALS				
ANATOMY				**Laaiq Hussain Siddiqui 9th Edition**
CODE	**SPECIFIC LEARNING OUTCOMES**	**TOTAL HOURS = 04**		
		INTEGRATING DISCIPLINE	**TOPIC**	
CVS-A-005	Identify under light microscope/ draw and label arteries	Microscopic Anatomy	Arteries	Pg.126-128
CVS-A-006	Identify under light microscope/ draw and label veins and capillaries	Microscopic Anatomy	Veins	Pg.128-132
CVS-A-007	Demonstrate proper hand hygiene and use of personal protective equipment (PPE) during preparation for the procedure.	Clinical Skills / Medical Emergencies	Infection Control and PPE in Clinical Practice	Pg.
CVS-A-008	Identify appropriate venous access sites on a simulation model using surface anatomy and vein palpation techniques.	Clinical Skills / Medical Emergencies	Venous Access Site Identification	Pg.

CVS-A-009	Perform intravenous cannulation on a simulation arm model, including: Patient preparation and positioning, Tourniquet application, Site cleaning and asepsis, Cannula insertion, flashback confirmation, and securing the IV line, Disposal of sharps and used materials.	Clinical Skills / Medical Emergencies	IV Cannulation Procedure	Pg.
CVS-A-010	Manage post-procedure care, including documentation, patient monitoring, and recognizing signs of infiltration or complications.	Clinical Skills / Medical Emergencies	Post-IV Cannulation Care and Complications Management	Pg.
CVS-A-011	Communicate effectively and empathetically with simulated patients or team members before, during, and after the procedure.	Professionalism / Communication Skills	Effective Patient and Team Communication	Pg.
CVS-A-012	Demonstrate confidence and	Professionalism / Clinical Competency	Professional Conduct in Clinical Skills	Pg.
CVS-A-013	Reflect on the importance of IV access in medical emergencies related to dental practice (e.g., anaphylaxis, hypoglycemia, cardiac emergencies).	Medical Emergencies / Dental Practice	IV Access in Dental Medical Emergencies	Pg.

Block 3 Module 8				Snell's Clinical Anatomy by Regions 2025-2026 Edition
ANATOMY				
CODE	**SPECIFIC LEARNING OUTCOMES**	**TOTAL HOURS = 26**		
		INTEGRATING DISCIPLINE	**TOPIC**	
GIT-A-001	Describe the parts and boundaries of oral cavity.	Anatomy / Oral Biology	Oral Cavity Anatomy	Pg.712-715
GIT-A-002	Describe the anatomical features of tongue with emphasis on its musculature, vascular supply and lymphatic drainage.	Anatomy / Oral Biology	Tongue Structure and Vascular Supply	Pg.715-717
GIT-A-003	Describe the extracranial course, distribution and branches of nerves with special reference to their lesions: Trigeminal, Glossopharyngeal, Hypoglossal, Vagus.	Anatomy / Oral Biology	Extracranial Cranial Nerve Anatomy and Lesions	Pg. 688-699
GIT-A-004	Describe the anatomical features of hard and soft palate with their neurovascular supply.	Anatomy / Oral Biology	Palate Anatomy and Neurovascular Supply	Pg.718-720
GIT-A-00	Describe the attachments of muscles of soft palate along with their actions and	Anatomy / Oral Biology	Muscles of Soft Palate	Pg.721

5	nerve supply.			
GIT-A-006	Describe anatomical features and neurovascular supply of salivary glands.	Anatomy / Oral Biology	Salivary Glands Anatomy and Neurovascular Supply	Pg.722-725
GIT-A-007	Discuss the clinical correlates of parotid gland: Mumps, Frey's syndrome.	Anatomy / Oral Biology	Parotid Gland Clinical Correlates	Pg.724
GIT-A-008	Describe the location, roots and distribution of submandibular and otic ganglia.	Anatomy / Oral Biology	Submandibar and Otic Ganglia	Pg.710,724
GIT-A-009	Name the parts of pharynx giving their extent, anatomical features, structure and neurovascular supply.	Anatomy / Oral Biology	Pharynx Anatomy and Neurovascular Supply	Pg.726-728
GIT-A-010	Describe the attachments of muscles of pharynx along with their actions and nerve supply.	Anatomy / Oral Biology	Muscles of Pharynx	Pg.729

GIT-A-011	Discuss the location,	Anatomy / Oral Biology	Palatine Tonsil Anatomy and Vascular Supply	Pg.730
GIT-A-012	Discuss the clinical correlates of piriform fossa and tonsils: Adenoids, Quincy, Tonsilitis.	Anatomy / Oral Biology	Piriform Fossa and Tonsils Clinical Correlates	Pg.730
GIT-A-013	Enlist the structures forming the Waldeyer's ring of lymphatic tissue.	Anatomy / Oral Biology	Waldeyer's Ring of Lymphatic Tissue	Pg.730
GIT-A-014	Describe the anatomical features of cervical part of esophagus with its neurovascular supply.	Anatomy / Oral Biology	Cervical Esophagus Anatomy and Neurovascular Supply	Pg.731
SYSTEMS-BASED HISTOLOGY				**Laaiq Hussain Siddiqui 9th Edition**
CODE	**SPECIFIC LEARNING OUTCOMES**	**TOTAL HOURS = 02**		
		INTEGRATIN G DISCIPLINE	**TOPIC**	
GIT-A-015	Describe the light microscopic structure of lip	Systems- Based Histology	Oral Cavity	Pg.185
	Describe the light microscopic structure of lip			Pg.185

SYSTEMS-BASED EMBRYOLOGY				Langman's Medical Embryology 15th Edition
CODE	SPECIFIC LEARNING OUTCOMES	TOTAL HOURS = 02		
		INTEGRATING DISCIPLINE	TOPIC	
GIT-A-016	**Describe the development of tongue**	Systems- Based Embryology	**Oral Cavity**	Pg. 302

PRACTICALS				Laaiq Hussain Siddiqui 2025-2026 Edition
MICROSCOPIC ANATOMY				
CODE	SPECIFIC LEARNING OUTCOMES	TOTAL HOURS = 04		
		INTEGRATING DISCIPLINE	TOPIC	
GIT-A-015	Identify under light microscope and draw and label the light microscopic structure of lip.	Oral Histology	Microscopic Structure of Lip	Pg 185.
GIT-A-016	Identify under light microscope and draw and label the light microscopic structure of tongue.		Microscopic Structure of Tongue	Pg.185-186

BIOCHEMISTRY		
CODE	**SPECIFIC LEARNING OUTCOMES**	**RESOURCES**
CVS-B- 001	Define Zwitter ion and isoelectric pH.	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: 3 Amino acids & Peptides Page. No: 18-20
CVS-B- 002	Define limiting amino acids and provide suitable examples of limiting amino acids.	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: 27 Nutrition: Overview and Macronutrients Page. No: 411 to 414
CVS-B- 003	Understand the nutritional importance of proteins and correlate this information to protein energy malnutrition. Compare and contrast the salient features of kwashiorkor and marasmus.	
CVS-B- 004	Define conjugated proteins and provide suitable examples of conjugated proteins in the human body (lipoproteins, glycoproteins, nucleoproteins, chromoproteins, and metalloproteins).	• 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: 5 Proteins: Higher Orders of Structure Page. No: 34 • Notes
CVS-B- 005	Elaborate the role of chaperones in protein folding.	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: 2 Protein Structure
CVS-B- 006	Briefly describe the consequences of protein misfolding (Alzheimer's disease and prion diseases).	
CVS-B- 007	Differentiate between denaturation and coagulation.	

		Page. No: 20-23
CVS-B- 008	Enlist the functions and give the clinical importance of plasma proteins (albumin, fibrinogen, and transferrin).	• 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: 52 Plasma Proteins & Immunoglobulins Page. No: 627-645 • Notes
CVS-B- 009	Draw and label the general structure of an antibody. Enlist five major types of immunoglobulins and give functions/significance of each class separately.	
CVS-B- 010	Explain the process of beta-oxidation of fatty acids and how it contributes to ATP production during sustained, low-intensity 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: 16 Fatty acid, TAG, & Ketone Body Metabolism Page. No: 209-216
CVS-B- 011	Define eicosanoids. Outline classification and biomedical importance of eicosanoids. Enlist functions of prostaglandins, leukotrienes and thromboxanes. Explain how low-dose aspirin therapy helps in the management of patients with IHD.	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: 17 Phospholipid, Glycosphingolipid, & Eicosanoid Metabolism Page. No: 236-238
BIOCHEMISTRY PRACTICALS		
CVS-B- 012	Understand the principle, procedure and uses of electrophoresis (demonstration only).	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: 52 Plasma Proteins & Immunoglobulins
CVS-B- 013	Describe the types of plasma proteins and explain their general functions.	
CVS-B- 014	Describe serum albumin and globulins and explain their biological roles in the human body.	

		Page. No: 627-645
CVS-B- 015	List the components of a lipid profile and describe the significance of cardiac enzyme markers (Trop T, CK-MB) in cardiovascular health.	• 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: 5 Enzymes Page. No: 69-72 • Notes

MODULE-8 (GASTROINTESTINAL TRACT)

BIOCHEMISTRY		
CODE	**SPECIFIC LEARNING OUTCOMES**	**RESOURCES**
GIT-B- 001	Elaborate the composition and functions of saliva.	• Ganong's Review of Medical Physiology (23rd Edition). Kim E. Barrett, Scott Boitano, Susan M. Barman, Heddwen L. Brooks. The McGraw-Hill Companies. Chapter No: 26 Overview of Gastrointestinal Function & Regulation Page. No: 429-450 • Notes
	Give etiology and clinical features of xerostomia. Suggest the management options for patients suffering from xerostomia.	
	Give biochemical explanation for rampant caries in cases of xerostomia.	
GIT-B- 002	Give composition and functions of gastric juice. Correlate chronic use of NSAIDs with development of peptic ulcer	
GIT-B- 003	Give composition and functions of pancreatic juice, bile and succus entericus	
GIT-B- 004	Describe the mechanism of digestion and absorption of dietary carbohydrates.	Lippincott Illustrated Reviews Biochemistry (8th edition). Emine Ercikan Abali, Susan D. Cline, David
	Give cause, clinical features, diagnosis and	

	management of lactose intolerance.	S. Franklin, Susan M. Viselli. Wolters Kluwer /Lippincott Williams & Wilkins. Chapter No: 7 Introduction to Carbohydrates Page. No: 95-97
	Describe the mechanism of digestion and absorption of dietary proteins.	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: 273-276
	Give the causes and clinical features of: • Hartnup Disease • Cystinuria	
	Explain the process of digestion and absorption of dietary lipids.	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: 15 Dietary Lipid Metabolism Page. No: 191-197

PHYSIOLOGY					
MODULE: 07 CVS					
CODE	**SPECIFIC LEARNING OUTCOMES**	**INTEGRATING DISCIPLINE**	**TOPIC**	**REFERENCE**	**PAGE NO.**
CVS-P 001	Enumerate the types of white blood cells along with their normal blood count. Discuss their site of genesis.		Resistance of the Body to Infection: I. Leukocytes, Granulocytes, the Monocyte Macrophage System, and Inflammation	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap 34 Pg 449-458 Lecture slides
CVS-P 002	Describe the characteristics and functions of Neutrophils Explain the process of phagocytosis and lysis of invading agent by neutrophils		Resistance of the Body to Infection: I. Leukocytes, Granulocytes, the Monocyte Macrophage System, and Inflammation	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap 34 Pg 449-458 Lecture slides
	Explain the process of phagocytosis and lysis of invading agent by macrophages Explain the process of opsonization				
	Describe the process of inflammation Enlist different lines of defense during inflammation				
CVS-P-003	Explain the process of Migration of neutrophils from the blood into inflamed tissue		Resistance of the Body to Infection: I. Leukocytes, Granulocytes, the Monocyte Macrophage System, and Inflammation	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap 34 Pg 449-458 Lecture slides
	Explain the functions of eosinophils and basophils				
	Give normal lifespan of white blood cells				
CVS-P-004	Classify lymphocytes			Guyton & Hall. Textbook of Physiology. 14th Edition	Chap 35 Pg.459-470
	Classify T lymphocytes and enlist their salient functions Define immunity Describe innate immunity Describe and classify acquired immunity Define passive immunity				

CVS-P-005	Discuss the role of T cells and B cells in acquired immunity Define plasma cells		Specific attributes of the B lymphocyte system—humoral immunity and antibodies	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap 35 Pg.459-470
	Describe the structure of antigen and immunoglobulin. Enlist types of immunoglobulins Describe the mechanism of direct action of antibodies	Pathology Immunology			
CVS-P-006	Enumerate different blood group types. Explain the basis of ABO and Rh blood system Discuss the features and complications of mismatched blood transfusion reaction Enlist the Hazards of blood transfusion.	Blood Types; Transfusion	Pathology Heamatology	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap 36 Pg 471-475
	Discuss the pathophysiology, features and treatment of Rh incompatibility.	Physiology			
CVS-P-007	Define hemostasis. Enlist and explain the mechanisms that secure hemostasis Give characteristics and functions of platelets. Mention normal platelet count in blood and life span of platelets	Physiology	Hemostasis and Blood Coagulation	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap 37 Pg. 477-488
	Explain the steps involved in formation of primary platelet plug to seal small vascular holes Define thrombocytopenia. Enlist causes of thrombocytopenia Explain consequences of thrombocytopenia				
	Enlist the clotting factors in blood. Name vitamin K dependent clotting factors Explain the Intrinsic & extrinsic clotting pathway. Describe mechanism of clot formation after injury Name and give mechanism of anticoagulants (heparin, oxalate & citrate) used in laboratory.				
CVS-P-008	Enlist and explain the conditions that cause excessive bleeding (Vitamin K deficiency, Hemophilia, Thrombocytopenia) Define Prothrombin time and		Conditions that cause excessive bleeding in humans	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap 37 Pg. 477-488

	mention its significance				
		HEART			
CVS-P-009	Explain the physiological anatomy of cardiac muscle.	Anatomy	Cardiac Muscle; The Heart as a Pump and Function of the Heart Valves	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap 9 Pg. 113-126
	Describe and draw the phases of action potential of ventricle				Chp.10 Pg.127-132
CVS-P-010	Describe and draw the phases of action potential of SA node along with explanation of the mechanism of self excitation/ Auto rhythmicity of SA node.	Anatomy	Rhythmical Excitation of the Heart	Guyton & Hall. Textbook of Physiology. 14th Edition	Chp.10 Pg.127-132
	Draw and explain the conducting system of heart	Anatomy			
CVS-P-011	Describe the mechanism of excitation-contraction coupling in cardiac muscle.		Cardiac Muscle; The Heart as a Pump and Function of the Heart Valves	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap 9 Pg. 113-126
	Draw & explain pressure & volume changes of left ventricle during cardiac cycle.	Physiology			
	Define & give the normal values of the cardiac output, stroke volume, end diastolic volume, end systolic volume and venous return Describe the Frank starling mechanism. Describe the autonomic regulation of heart pumping. Describe the effect of potassium, calcium ions & temperature on heart function.				
CVS-P-012	Define Electrocardiogram Enlist, draw, and explain the physiological basis & give durations of waves, intervals, and segments of normal ECG.	General Medicine	Fundamentals of Electrocardio graphy	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap 11 Pg. 135-141
CVS-P-013	Define tachycardia and enlist its causes. Define bradycardia and enlist its causes.	General Medicine	Cardiac Arrhythmias	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap 13 Pg. 157-158
	Define sinus arrhythmia and its physiological basis	General Medicine			
		CIRCULATION			
CVS-P-014	Explain the functional parts of circulation (arteries, arterioles, capillaries, veins, venules) Mention the pressures in	Anatomy/Oral Medicine	Overview of the Circulation Nervous Regulation of the	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap 14 Pg. 171-172

	systemic & pulmonary circulation. Describe nervous regulation of blood vessels and functioning of vasomotor centers. Explain vasovagal syncope		Circulation		Chap 18 Pg. 217-220
CVS-P-015	Identify vessels constituting microcirculation. Enumerate starling forces (hydrostatic and osmotic forces) and explain their role in capillary filtration and formation of interstitial fluid. Define edema	Physiology	The Microcirculati on and Lymphatic System: Capillary Fluid Exchange, Interstitial Fluid, and Lymph Flow	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap 16 Pg. 193-204
CVS-P-016	Describe local control of blood flow in response to tissue needs Discuss role of Humoral factors in control of blood flow Explain acute mechanism of local blood flow control (tissue metabolism & oxygen/nutrient demand) Describe autoregulation of blood flow during changes in arterial pressure—(metabolic and myogenic mechanisms)	Physiology	Local and Humoral Control of Tissue Blood Flow	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap 17 Pg. 205-215
CVS-P-017	Define blood pressure and its two primary determinants (cardiac output and total peripheral resistance). Define pulse pressure and mean arterial pressure. Give normal blood pressure value and mean arterial pressure value Define hypertension		Clinical methods for measuring systolic and diastolic pressures Primary (essential) Hypertension	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap 19 Pg. 236-244
CVS-P-018	Define Cardiac output and venous return. Give their normal values. Enlist and explain factors that affect cardiac output and venous return		Cardiac Output, Venous Return, and Their Regulation	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap 20 Pg. 245-255
CVS-P-019	Describe role of the nervous system in rapid control of arterial pressure. Enumerate nervous reflex mechanisms for regulation of blood pressure Nervous regulation of the circulation and rapid control of		Nervous regulation of the circulation and rapid control of arterial pressure	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap 18 Pg. 220-227

	arterial pressure Explain the role of baroreceptors in regulation of arterial blood pressure. Explain the role of chemoreceptors in regulation of arterial blood pressure Explain CNS ischemic response Explain Cushing reaction				
CVS-P-020	Describe role of renin angiotensin aldosterone mechanism in blood pressure regulation Explain stress relaxation and capillary fluid shift Enlist immediate (seconds to minutes), intermediate (after several minutes) and long-term mechanism of blood pressure regulation		Role of the kidneys in long- term control of arterial pressure	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap 19 Pg. 236-244
CVS-P-021	Define & enlist different types of shock. Explain the causes, features, and pathophysiology of hypovolemic/hemorrhagic shock. Explain the causes, features, and pathophysiology of septic shock. Explain the causes, features, and pathophysiology of neurogenic shock. Explain the causes and features of anaphylactic shock Explain cardiogenic shock		Circulatory Shock and its treatment	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap 24 Pg. 293-302
CVS-P-022	Explain stages of shock Enlist & explain compensatory mechanisms during non-progressive shock			Guyton & Hall. Textbook of Physiology. 14th Edition	Chap 24 Pg. 293-302
CVS-P-023	Define angina pectoris and myocardial infarction	Medicine	The Coronary Circulation and Ischemic Heart Disease	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap 21 Pg. 265
CVS-P-024	Enlist the different types of heart sounds and explain the physiological basis of each Heart sounds Enlist the causes of 3rd and 4th heart sounds. Define murmur		Heart Valves and Heart Sounds	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap 23 Pg. 283-286

Module:7 CVS practicals

CODE	SPECIFIC LEARNING OUTCOMES	TOPIC	Reference
CVS-P-025	Observe the demonstration of blood grouping procedure and explain its clinical relevance in dental practice, including its role in managing medical emergencies.	Blood Grouping Awareness in Clinical Dentistry	Physiology Practical Copy
CVS-P-026	Observe the demonstration of bleeding time measurement and explain its importance in assessing bleeding risk in dental procedures.	Bleeding Time Awareness in Clinical Dentistry	Physiology Practical Copy
CVS-P-027	Observe the demonstration of clotting time measurement and explain its relevance to safe dental practice	Clotting Time Awareness in Clinical Dentistry	Physiology Practical Copy
CVS-P-028	Observe and identify the normal waveforms and intervals on a sample ECG tracing	ECG Waveform Recognition	Physiology Practical Copy
CVS-P-029	Calculate heart rate from a provided normal ECG tracing and describe its clinical significance.	ECG-Based Heart Rate Calculation	Physiology Practical Copy
CVS-P-030	Demonstrate how to locate and palpate the apex beat on a simulation model or peer under supervision.	Cardiac Examination Basics	Physiology Practical Copy
CVS-P-031	Demonstrate the correct method to auscultate the precordium for heart sounds under supervision.	Cardiac Auscultation Basics	Physiology Practical Copy
CVS-P-032	Demonstrate blood pressure measurement using	Blood Pressure Measurement	Physiology Practical Copy

	palpatory and auscultatory methods in the sitting position under supervision.	Techniques	
CVS-P-033	Demonstrate the effect of posture on blood pressure measurement under supervision.	Postural Influence on Blood Pressure	Physiology Practical Copy
CVS-P-034	Observe and describe the radial pulse characteristics, including rate, rhythm, and volume, under supervision.	Pulse Examination Awareness	Physiology Practical Copy
CVS-P-035	Demonstrate the basic steps of cardiopulmonary resuscitation (CPR) on a simulation model under supervision.	Basic Life Support (BLS) Introduction	Physiology Practical Copy

Module:08 GIT

CODE	SPECIFIC LEARNING OUTCOMES	INTEGRATING DISCIPLINE	TOPIC	REFERENCE	PAGE NO.
GIT-P-001	Describe physiologic anatomy of gastrointestinal tract. Discuss electrical activity of smooth muscles of GIT. Describe the mechanism of excitation of smooth muscle of gastrointestinal tract. Discuss the factors that	Physiology	General Principles of GIT Function - Motility, Nervous Control	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap 63 Pg. 787-796

	depolarize and hyperpolarize GI membrane.				
GIT-P-002	Describe the role of autonomic nervous system in regulation of GIT's function Describe enteric nervous system. Describe the Meissner's plexus and differentiate between myenteric and Meissner's plexuses Enlist the gastrointestinal reflexes & explain the functions of these reflexes. Give the stimuli, site of release and actions of cholecystokinin, Gastrin, Secretin & Motilin (enteroendocrine cells)	Physiology	Neural control of GIT function (Enteric Nervous system) GIT hormones	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap 63 Pg. 787-796
	Differentiate between sympathetic and parasympathetic modulation of the enteric nervous system and the effector organs of the GI tract	Physiology & Pharmacology			Chap 63 Pg. 787-796
GIT-P-003	- Discuss functional movements of GIT (propulsive & mixing)	Physiology	Functional types of movements in the GI tract	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap 64 Pg. 797-806
GIT-P-004	Discuss the pathophysiology& features of achalasia & Mega esophagus.	Pathology & Physiology	Esophagus	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap.67 Pg.833
GIT-P-005	Enlist the functions of saliva	Physiology	Role of mucous and saliva	Guyton & Hall. Textbook of Physiology.	Chap.65 Pg.810

				14th Edition	
GIT-P-006	Describe the stages of vomiting act. Appraise the location and function of vomiting center/ chemoreceptor trigger zone in the brain	Physiology	Vomiting Reflex	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap.67 Pg.837-838
GIT-P-007	Explain motor function of stomach. Explain factors which regulate stomach emptying	Physiology	Motor function of Stomach	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap 64 Pg. 797-806
GIT-P-008	Describe characteristics & functions of the gastric secretions.	Physiology	Gastric secretion	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap.65 Pg.811-814
GIT-P-009	Discuss the role of Intrinsic factor from gastric parietal cells	Physiology	Memory	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap.58 Pg.735-739
GIT-P-010	Define and discuss basic causes of gastritis and Pernicious anemia. Define & enumerate the causes and pathophysiology of peptic ulcer	Pathology & Physiology	Pathophysiology of Stomach	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap.67 Pg.833-835 Chap.62 Pg777-778,783
GIT-P-011	Enumerate the types of movements taking place in small intestine and mention their function. What is peristaltic rush and enteritis?	Physiology	Movements of the small intestine General	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap 64 Pg. 797-806
GIT-P-012	Enumerate the types of movements taking place in colon and give their functions Discuss defecation reflex.	Physiology & Microbiology	Movements of the Colon	Guyton & Hall. Textbook of Physiology. 14th Edition	Chap 64 Pg. 797-806

GIT Practicals			
GIT-P-013	Demonstrate the examination of the sensory and motor parts of the Trigeminal nerve under supervision.	Cranial Nerve V (Trigeminal) Examination	Physiology Practical Copy
GIT-P-014	Demonstrate the examination of the sensory and motor parts of the Glossopharyngeal nerve under supervision.	Cranial Nerve IX (Glossopharyngeal) Examination	Physiology Practical Copy
GIT-P-015	Demonstrate the examination of the sensory and motor parts of the Vagus nerve under supervision	Cranial Nerve X (Vagus) Examination	Physiology Practical Copy
GIT-P-016	Demonstrate the examination of the sensory and motor parts of the Hypoglossal nerve under supervision.	Cranial Nerve XII (Hypoglossal) Examination	Physiology Practical Copy

ORAL BIOLOGY			
CODE	**Block III- Module 8 Gastrointestinal tract**	**Chapter**	**Page number**
GIT-OB-001	Describe the introduction to oral mucosa	Chp 12: Oral Mucosa	260
	Explain the morphological and histological structure of oral mucosa..	Chp 12: Oral Mucosa	260 – 280 (whole chapter)
	Describe and explain the component tissues and glands of oral mucosa.	Chp 12: Oral Mucosa	262-263
	Enumerate and discuss the details of the nonkeratinocytes in the oral epithelium and lamina propria.	Chp 12: Oral Mucosa	270-276
	Discuss the vasculature and innervations of oral mucosa along with the structural variations observed in it.	Chp 12: Oral Mucosa	276-283
	Explain the mucocutaneous junctions in the oral Mucosa	Chp 12: Oral Mucosa	283
	Describe the age-related changes of oral mucosa	Chp 12: Oral Mucosa	287
GIT-OB-002	Introduction to taste and its different events. What are the major taste support systems?	Chp 12: Oral Mucosa/ Oral Physiology/ Neuroanatomy	Lavelle Applied Physiology (2nd ed) Page 25 Page 27-28
	Discuss the four basic taste sensations/ taste stimuli	Chp 12: Oral Mucosa/ Oral Physiology/ Neuroanatomy	Lavelle Applied Physiology (2nd ed) Page 26
	Elaborate on the structure and location of taste buds	Chp 12: Oral Mucosa	282-283
	Explain the mechanism of taste	Chp 12: Oral Mucosa / Oral Physiology	Lavelle Applied Physiology (2nd ed) Page 28-29
	What do you know about abnormal taste sensations?	Oral Physiology	Lavelle Applied Physiology (2nd ed) Page 25
	Enumerate or enlist the different conditions affecting taste	Oral Physiology	Lavelle Applied Physiology (2nd ed) Page 29
GIT-OB-	Describe the development of major & minor	Chp 11: Salivary glands	238

003	salivary glands.		
	Describe the histology of major and minor salivary glands	Chp 11: Salivary glands	238-243 256-257
	Elaborate its changes with age and its clinical considerations	Chp 11: Salivary glands	258-259
GIT-OB-004	Discuss the mechanism of saliva formation and how the saliva is modified in the duct.	Chp 11: Salivary glands	243-254
GIT-OB-005	Define Mastication and what are the structures involved in masticatory movement and functions	Physiology of Mastication Lavelle Applied Physiology (2nd ed)	Page 12, 20-21
	Elaborate chewing cycle of mastication.	Physiology of Mastication Lavelle Applied Physiology (2nd ed)	Page 13
	What are the different stages of mastication?	Physiology of Mastication Lavelle Applied Physiology (2nd ed)	Page 13
	What are the different muscles involved in mastication? Give their origin, insertions, innervation,	Physiology of Mastication Lavelle Applied Physiology (2nd ed) Ten Cates Chp 13	Page 20-21. page 303-305
	Briefly describe the neurological control of mastication	Physiology of Mastication Lavelle Applied Physiology (2nd ed)	Page 14-17
GIT-OB-006	Introduction to the term swallowing and deglutition	Physiology of Swallowing Lavelle Applied Physiology (2nd ed)	Page 31
	What are the stages of swallowing?	Physiology of Swallowing Lavelle Applied Physiology (2nd ed)	Page 31-33
	Elaborate the pathway of swallowing and its neural control.	Physiology of Swallowing Lavelle Applied Physiology (2nd ed)	Page 36, 37-38
	PRACTICALS		
GIT-A-017	Draw and label the keratinized and non-keratinized oral epithelium, specialized mucosa including tongue papillae and mucocutaneous junction.	**Chp 12: Oral Mucosa** Oral Epithelium and Specialized Mucosa	Fig 12.8, 12.10, 12.27, 12.32(a)
GIT-A-018	Draw and label the histological structure of the taste bud, and mention the specificity of the tongue for different taste sensations	**Chp 12: Oral Mucosa/Physiology** Taste Bud Structure and Tongue Sensory Map	12.28.
GIT-A-019	Identify in images or slides the histological section of the tongue showing different tongue papillae and the location of taste buds.	**Chp 12: Oral Mucosa** Tongue Papillae and Taste Bud Identification	Slides during practical

GIT-A-020	Draw and label the histological section of major salivary glands, showing serous and mucous acini, serous demilunes, and cells of intercalated, striated, and excretory ducts	**Chp 11: Salivary glands** Salivary glands histology	11.11, 11.15, 11.25, 11.29, 11.34, 11.35, 11.36
GIT-A-021	Identify the correct stage of swallowing on provided images or models.	**Oral Physiology** Swallowing Mechanism Stages	Images to be shown in lectures/ practical
CODE	**Block III- Module 09 Occlusion-I**	**Chapter**	**Page number**
Oc1-OB-001	Describe the basic concepts of occlusion and its importance and relevance in dentistry.	Occlusion	
Oc1-OB-002	Describe the crown morphology of deciduous & permanent incisors.	Deciduous & Permanent Incisors	41-57 170-171 173-174 (Fuller)
	Describe the key identification points of deciduous & permanent incisors (Set traits, type traits, class traits and arch traits)	Deciduous & Permanent Incisors	41-57 170-171 173-174 (Fuller)
	Describe the normal root and pulpal morphology of maxillary and mandibular incisors	Deciduous & Permanent Incisors	139-140 144-145 171, 174 (fuller)
	Identify and classify common structural anomalies of incisors	Deciduous & Permanent Incisors	45, 49, 52
	Interpret periapical radiographs of incisors, recognizing normal anatomy and common anomalies	Deciduous & Permanent Incisors	Pictures to be shown in class/ practical
Oc1-OB-003	Describe the crown morphology of deciduous & permanent canines	Deciduous & Permanent canines	59- 68 171, 174-175
	Describe the normal root and pulpal morphology of maxillary and mandibular canines	Deciduous & Permanent canines	59-58 141, 145-146,
	Describe the key identification points of deciduous & permanent canines (Set traits, type traits, class traits and arch traits)	Deciduous & Permanent canines	59- 68 171, 174-175
	Identify and classify common structural anomalies of canines	Deciduous & Permanent canines	63, 65
	Interpret periapical radiographs of canines, recognizing normal anatomy and common anomalies.	Deciduous & Permanent canines	Pictures to be shown in class/ practical
	Define and differentiate between overjet and overbite, and explain their clinical significance.	Occlusion	
Oc1-OB-004	Define forensic odontology and explain the significance of forensic odontology in dental identification and legal investigations	Forensic Odontology	Lecture notes
	PRACTICALS		
Oc1-OB-005	Draw the outlines of all deciduous & permanent incisors: labial, lingual, mesial, distal & incisal aspects	Deciduous & Permanent Incisors	54-57 177-178 182-183

	Label each aspect, pointing their morphological features (Incisal corners, marginal ridges, fossa, cingulum, pit, developmental depressions, imbrication lines & contact points)	Deciduous & Permanent Incisors	54-57 177-178 182-183
	Carve anatomically accurate models of incisors from soap blocks.		
	Identification on models (Permanent Incisors)		
Oc1-OB-006	Draw the outlines of all deciduous & permanent canines: labial, lingual, mesial, distal & incisal aspects	Deciduous & Permanent canines	66-67 179, 184
	Label each aspect pointing their morphological features (Incisal slopes, labial/lingual ridges, marginal ridges, fossa, cingulum, developmental depressions, imbrication lines & contact points).	Deciduous & Permanent canines	
	Identification on models (Permanent Canines)	Deciduous & Permanent canines	
	Carve anatomically accurate models of canines from soap blocks.	Deciduous & Permanent canines	
	Describe the principles and purpose of preparing ground sections of teeth.	Ground sectioning of teeth	
	Prepare a ground section of a tooth with appropriate thickness for microscopic examination.	Ground sectioning of teeth	
	Recognize key structural details of enamel, dentin, and cementum in the sectioned sample.	Ground sectioning of teeth	

GENERAL PATHOLOGY and MICROBIOLOGY				
SR.#	**DATE/ DAY**	**TOPIC**	**FACILITATOR**	**READING MATERIAL**
CVS-Pa-001	3/11/25	Define white blood cell (WBC) disorders and classify them into benign and malignant types. 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	**Dr. Hira Babar**	Robbin's BASIC PATHOLOGY 10TH edition pg 460 -461
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. Hira Babar**	Robbin's BASIC PATHOLOGY 10TH edition pg 87, 460, 478 - 482
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 / Dr.Maimoona**	Robbin's BASIC PATHOLOGY 10TH edition pg 31
CVS-Pa-004 CVS-Pa-005		List the types of antibodies (IgG, IgA, IgM, IgE, IgD) and discuss their relevance in hypersensitivity reactions. 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 / Dr.Maimoona**	Robbin's BASIC PATHOLOGY 10TH edition pg 31
CVS-Pa-006		Define the principles of ABO and Rh blood grouping systems. State the importance of compatibility testing, including crossmatching, for safe transfusions. Identify scenarios in dentistry where blood grouping knowledge is essential, such as surgeries or trauma management.	**Dr. Nazia Ahmad**	Web source

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 Ahmd / Dr. Hira Babar**	Robbin's BASIC PATHOLOGY 10TH edition pg 100, 106- 115
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 Ahmad / Dr. Hira Babar**	Robbin's BASIC PATHOLOGY 10TH edition pg # 100, 106 - 115
CVS-Pa-009		Define bleeding disorders and their relevance to clinical dentistry. Classify bleeding disorders into vascular, platelet, coagulation, and mixed types. Enlist causes of thrombocytopenia, such as decreased production, increased destruction, or sequestration of platelets	**Dr. Nazia Ahmad / Dr. Hira Babar**	Robbin's BASIC PATHOLOGY 10TH edition pg 485 – 486, 488, web source
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	**Dr. Nazia Ahmad / Dr. Hira Babar**	Web sources and Robbin's BASIC PATHOLOGY 10TH edition pg # 485 - 486

		(platelet & coagulation related disorder) in dental patients.		
CSV-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 bloodborne pathogens and parasites during dental procedures	**Prof. Sadia Ch./ Dr. Sonia Tahir**	Reference book Levinson's review of Medical Microbiology and Immunology 18th edition pg# 104 – 110, 114 387, 692, 97
		CARDIOVASCULAR SYSTEM		
CVS-Pa-012		Define and classify types of shock (hypovolemic, cardiogenic, septic) and evaluate their pathophysiology and relevance in dental emergencies	**)r. Nazia Ahmad/ Dr. Hira Babar**	Robbin's BASIC PATHOLOGY 10TH edition pg #115 – 119
CVS-Pa-013		Correlate septicemia caused by cardiovascular pathogens (e.g., Staphylococcus aureus Pseudomonas aeruginosa) with 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 Porphyromonas gingivalis in contributing to cardiovascular diseases, including atherosclerosis, and integrate this knowledge into periodontal therapy.	**Prof. Sadia Ch. / Dr. Sonia Tahir**	Reference book Levinson's review of Medical Microbiology and Immunology 18th edition pg # 104 -110, 608, 612 Web sources
		MODULE 8 GENERAL PATHOLOGY		
GIT-Pa-001		Define heartburn and describe its pathophysiology as a symptom of gastroesophageal reflux disease (GERD).	**Prof. Shahbaz/ Dr. Rizwan**	Robbin's BASIC PATHOLOGY 10TH edition pg

		Enumerate the etiology and clinical features of GERD and peptic ulcer disease.		593 -595 598 - 602
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. Peptic Ulcer. Enlist causes of PUD Explain the pathogenesis of PUD	**Prof. Shahbaz/ Dr. Rizwan**	Robbin's BASIC PATHOLOGY 10TH edition pg 601 – 603
GIT-Pa-003		Discuss the pathophysiology of irritable bowel syndrome	**Prof. Shahbaz/ Dr. Rizwan**	Robbin's BASIC PATHOLOGY 10TH edition pg
		MICROBIOLOGY		
GIT-Mic-001		Enlist different organisms causing oral lesions. Briefly discuss HPV, EBV, as disease causing organisms, their epidemiology, virulence factors, pathogenesis, lab diagnosis & prevention.	**Prof. Sadia Ch./ Dr. Sonia Tahir**	Reference book Levinson's review of Medical Microbiology and Immunology 18th edition pg # 300, 295
GIT-Mic-002		Define terms as: constipation, Acute Diarrhea & Chronic Diarrhea, Vomiting and Dysentry 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.	**Prof. Sadia Ch./ Dr. Sonia Tahir**	Reference book Levinson's review of Medical Microbiology and Immunology 18th editionpg # 629, chapter 73, 680, 134, 135, 429, 433 435

		Briefly discuss intestinal protozoa (Entamoeba histolytica, Giardia, Cryptosporidium) with its epidemiology, virulence factors, pathogenesis, lab diagnosis & prevention.		

ORAL PATHOLOGY		
Sr no.	**Learning objectives**	**Reading materials**
1.	Discuss clinical abnormalities of Salivary secretions.	CAWSON'S ESSENTIALS OF ORAL PATHOLOGY AND ORAL MEDICINE . Chp 22 Page:345-349
2	Give etiology and clinical features of xerostomia.	CAWSON'S ESSENTIALS OF ORAL PATHOLOGY AND ORAL MEDICINE Chp 22 Page:345-349
3	Give biochemical explanation for rampant caries in cases of xerostomia.	CAWSON'S ESSENTIALS OF ORAL PATHOLOGY AND ORAL MEDICINE Chp 4 Page:60
4	Define and enlist the types and salient features of ulcers (acute, chronic and recurrent)	CAWSON'S ESSENTIALS OF ORAL PATHOLOGY AND ORAL MEDICINE Chp 4 Page:53-70
5.	Define and enlist the types and salient features of ulcers (acute, chronic and recurrent)	CAWSON'S ESSENTIALS OF ORAL PATHOLOGY AND ORAL MEDICINE Chp 4 Page:53-70

PHARMACOLOGY			
MODULE-07			
CODE	SPECIFIC LEARNING OUTCOMES	TOTAL HOURS = 04	
		Reference KEY	TOPIC
BLOOD			
CVS-Ph-001	Classify anti-clotting drugs	Lippincott 7th Edition Page no: 268 Katzung 12th Edition Page no: 284	Anticoagulants
	Compare their usefulness in venous and arterial thrombosis	Lippincott 7th Edition Page no: 276 Katzung 15th Edition Page no: 644-645	
	Describe the mechanisms of action, clinical uses and adverse effects of anticoagulants	Lippincott 7th Edition Page no: 276-277 Katzung 12th Edition Page no: 286-287	
	Compare Unfractionated heparin, LMW heparins and oral anticoagulants	Lippincott 7th Edition Page no: 276-277	
	Compare and contrast the mechanism of action, clinical uses, and toxicities of the oral anticoagulants (warfarin, rivaroxaban, and dabigatran).	Lippincott 7th Edition Page no: 279-280 Katzung 12th Edition Page no:	
	Explain the pharmacokinetic and pharmacodynamic drug interactions of Warfarin	Lippincott 7th Edition Page no: 280	
	Describe the mechanisms of action, clinical uses and adverse effects of antiplatelet drugs	Lippincott 7th Edition Page no: 271-275 Katzung 12th Edition Page no: 289-290	
	Illustrate where the 4 major classes of antiplatelet drugs act	Katzung 12th Edition Page no: 289	
	Differentiate between Clopidogrel and Ticlopidine	Lippincott 7th Edition Page no: 273-274 Katzung 12th Edition Page no: 290	
	Discuss the mechanism of action, clinical uses, adverse effects and contraindications of Thrombolytics	Lippincott 7th Edition Page no: 282-283 Katzung 12th Edition Page no: 288-289	
	Tabulate differences between Streptokinase & recombinant tissue plasminogen activators	Lippincott 7th Edition Page no: Katzung 12th Edition Page no: 288	
	Classify and give clinical uses of various iron preparations along with their adverse effects.	Lippincott 7th Edition Page no: Katzung 15th Edition Page no: 261-618	Anticoagulants

CVS			
CODE	SPECIFIC LEARNING OUTCOMES	TOTAL HOURS = 20	
		INTEGRATING DISCIPLINE	TOPIC
CVS-Ph002	Classify vasodilators on the basis of site, route and mechanism of action.	Lippincott 7th Edition Page no: 214 Katzung 12th Edition Page no: 93,97	Antihypertensive drugs-I ACE inhibitors, AT receptor antagonist, Direct-acting vasodilators
	Describe the pharmacokinetic properties and side effects of vasodilators.		
	Classify the drugs acting on renin-angiotensin-aldosterone system (RAAS).	Lippincott 7th Edition Page no: 203 Katzung 12th Edition Page no: 93	
	Explain their mechanisms of action, clinical indications, adverse effects, and contraindications.	Lippincott 7th Edition Page no: 211 Katzung 12th Edition Page no: 97	
CVS-Ph003	Classify antihypertensives according to site and mechanism of action.	Katzung 12th Edition Page no: 93-95,97	Antihypertensive drugs-II Sympatholytic drugs, Diuretics, Ca++
	Describe the role of sympatholytic drugs in hypertension	Katzung 12th Edition Page no: 93	channel blockers
	Recall the role of diuretics in hypertension. Recount the relevance of calcium channel blockers in hypertension	Lippincott 7th Edition Page no: 207,208,212,213 Katzung 15th Edition Page no: 94, 188	
	Tabulate the compensatory mechanisms of antihypertensive drugs	Katzung 15th Edition Page no: 180	
CVS-Ph004	Classify the drugs used in the management of angina pectoris Describe important pharmacokinetic aspects of nitrates.	Lippincott 7th Edition Page no:263, 264 Katzung 12th Edition Page no:103, 105	
	Explain mechanism of action of nitrates.	Lippincott 7th Edition Page no:263 Katzung 12th Edition Page no: 106	Anti-anginal drugs
	Give pharmacological basis for the use of nitrates in angina	Katzung 12th Edition Page no: 106, 107	
	Enumerate the adverse and toxic effects of nitrates	Lippincott 7th Edition Page no: 264 Katzung 12th Edition Page no: 107	
CVS-Ph005	Explain briefly the pathophysiology of heart failure.	Lippincott 7th Edition Page no: 232 Katzung 12th Edition Page no: 112	Drug treatment for heart failure
	Recall the compensatory mechanisms in a failing heart.	Lippincott 7th Edition Page no: 231	

		Katzung 12th Edition Page no: 113	
	Outline a treatment plan for patients with compensated or decompensated CHF.	Katzung 15th Edition Page no: 243	
	Enlist major drug groups used for management of congestive heart failure.	Lippincott 7th Edition Page no:231 Katzung 12th Edition Page no: 112	
	Explain the role of diuretics, angiotensin-converting enzyme inhibitors and beta blockers, in treating patients with congestive heart failure	Lippincott 7th Edition Page no: 236-239 Katzung 12th Edition Page no: 117	
CVS-Ph006	Discuss digoxin and its use in long-term management of congestive heart failure.	Lippincott 7th Edition Page no: 243 Katzung 12th Edition Page no: 115, 116	Drug treatment for heart failure
	Describe the mechanism of action of Digoxin.	Lippincott 7th Edition Page no: 242 Katzung 12th Edition Page no: 114-115	
	Recount the mechanical and electrical effects of Digoxin.	Lippincott 7th Edition Page no: 243 Katzung 12th Edition Page no: 115-116	
	Enumerate and explain the clinical uses of Digoxin.	Katzung 12th Edition Page no: 116	
	Describe the important side-effects, contraindications & drug interactions of Digoxin.	Lippincott 7th Edition Page no:244 Katzung 12th Edition Page no: 117	
	Explain the treatment and management of digitalis toxicity.	Katzung 12th Edition Page no: 117	
CVS-Ph007	Classify anti-arrhythmic drugs. Describe cardiac, noncardiac effects of class I drugs (all subgroups).	Lippincott 7th Edition Page no: 248 Katzung 12th Editon Page no: 122	Antiarrhythmic drugs
	Enumerate therapeutic uses and major side effects of all class I antiarrhythmic drugs.	Lippincott 7th Edition Page no: 251-252 Katzung 12th Edition Page no: 126	
	Describe the important antiarrhythmic actions of class II drugs. Enumerate clinical indications and side-effects of class II drugs.	Lippincott 7th Edition Page no: 254 Katzung 12th Edition Page no: 127	
	Explain the actions, uses and side-effects of class III drugs(amiodarone).	Lippincott 7th Edition Page no: 254-255 Katzung 12th Edition Page no: 127	
	Describe the actions, uses and adverse effects of calcium channel blockers (class IV drugs).	Lippincott 7th Edition Page no:256 Katzung 12th Edition Page no: 128	

	Describe briefly the salient features of adenosine as an antiarrhythmic and its toxicity	Lippincott 7th Edition Page no: 256 Katzung 12th Edition Page no: 128	
CVS-Ph008	Describe the mechanism of action, indications/clinical uses and adverse effects of tranexamic acid and aminocaproic acid	Lippincott 7th Edition Page no: 283-284 Katzung 12th Edition Page no: 290	Antifibrinolytics
CVS-Ph009	Identify cardiovascular risks associated with NSAID use and briefly explain the underlying pharmacological mechanisms	Katzung 12th Edition Page no: 305	Analgesics
	Describe the antiplatelet mechanism of action of lowdose aspirin and its role in the prevention of myocardial infarction.	Lippincott 7th Edition Page no: 271-272 Katzung 12th Edition Page no: 306	
	Differentiate between the use of low-dose and high dose aspirin in cardiovascular vs. anti-inflammatory indications.	Katzung 12th Edition Page no: 306	
PHARMACOLOGY			
CODE	**SPECIFIC LEARNING OUTCOMES**	**TOTAL HOURS = 05**	
CVS-Ph-010	Describe the common classes of antihypertensive and anticoagulant medications and their relevance to dental care.	Pharmacology / Oral Medicine / Medical Emergencies	Pharmacological Considerations in Dental Practice
CVS-Ph-011	Identify potential drug interactions and describe the importance of modifying dental procedures for patients on these medications.	Pharmacology / Oral Medicine / Medical Emergencies	Drug Interactions and Procedural Modifications
MODULE-08			
PHARMACOLOGY			
CODE	**SPECIFIC LEARNING OUTCOMES**	**TOTAL HOURS = 08**	
		INTEGRATING DISCIPLINE	**TOPIC**
GIT-Ph-001	Classify the drugs used for the treatment of Acid Peptic Disease (APD) Explain their mechanism of action, uses and adverse effects Correlate chronic use of NSAIDS with development of peptic ulcer. Write down Triple and Quadruple regimen for APD	Lippincott 7th Edition Page no: 540-544 Katzung 12th Edition Page no: 497-499	Acid Peptic disease
GIT-Ph-002	Classify antiemetics	Lippincott 7th Edition Page no: 546-547 Katzung 12th Edition Page no: 497	Antiemetics and Prokinetics

	Describe the mechanism of action, clinical uses, and adverse effects of metoclopramide Compare metoclopramide and Domperidone	Lippincott 7th Edition Page no: 546-547 Katzung 12th Edition Page no: 497-500 Katzung 15th Edition Page no: 1149	
	Name the drugs used in the prevention of chemotherapy- or radiation-induced emesis List prokinetic agents	Lippincott 7th Edition Page no: 554	
GIT-Ph-003	Classify Laxatives Classify antidiarrheals	Lippincott 7th Edition Page no: 548-549 Katzung 12th Edition Page no: 497, 500	Laxatives, antidiarrheals

PHARMACOLOGY			
CODE	SPECIFIC LEARNING OUTCOMES	TOTAL HOURS = 05	
		INTEGRATING DISCIPLINE	TOPIC
GIT-Ph-004	Demonstrate the preparation and dispensing of three doses of Carminative mixture under supervision.	Pharmacy / Clinical Pharmacology	Preparation of Carminative Mixtures
GIT-Ph-005	Demonstrate the preparation and dispensing of four doses of ORS solution under supervision	Pharmacy / Clinical Pharmacology	Preparation of Oral Rehydration Solution
GIT-Ph-006	Demonstrate the preparation of Normal Saline or Dextrose Water solution under supervision.	Pharmacy / Clinical Pharmacology	Preparation of IV Solutions

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.

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 – III TIMETABLE 1st YEAR BDS Session 2024-2025 (w.e.f. 3-11-2025 to 18-01-2026)

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 1:00 pm	1:00 pm to 3:00 pm	
Monday	Physiology Lecture/Tutorial Lecture Theatre 8	*Biochemistry/Anatomy Lecture/Tutorial Lecture Theatre 8	**Oral Biology/Pharmacology Lecture Lecture Theatre 8	Anatomy Lecture/Tutorial Lecture Theatre 8	BREAK	Pathology/ Microbiology Lecture Lecture Theatre 8	PRACTICLE Physiology LAB	
Tuesday	Biochemistry Lecture/Tutorial Lecture Theatre 8	Physiology Lecture/Tutorial Lecture Theatre 8	Oral Biology Lecture Lecture Theatre 8	Pharmacology Lecture Lecture Theatre 8		PRISME Lecture Theatre 8	1:00 pm to 2:00 pm Anatomy Lecture/Tutorial Lecture Theatre 8	2:00 pm to 3:00 pm Physiology Lecture/Tutorial Lecture Theatre 8
Wednesday	Pathology/ Microbiology Lecture Lecture Theatre 8	Physiology Lecture/Tutorial Lecture Theatre 8	Pharmacology Lecture Lecture Theatre 8	Anatomy Lecture/Tutorial Lecture Theatre 8		Oral Biology Lecture Lecture Theatre 8	Oral Biology Practical Oral Biology LAB	
Thursday	Oral Biology Lecture Lecture Theatre 8	Pharmacology Lecture Lecture Theatre	Physiology Lecture/Tutorial Lecture Theatre 8	Pathology/ Microbiology Lecture Lecture Theatre 8		***Physiology/Oral Pathology/Community Dentistry Lecture Theatre 8	1:00 pm to 2:00 pm Physiology Lecture/Tutorial Lecture Theatre 8	2:00 pm to 3:00 pm Anatomy Lecture/Tutorial Lecture Theatre 8
Friday	Pharmacology Lecture Lecture Theatre	Biochemistry Lecture/Tutorial Lecture Theatre 8	Islamiyat/Pak.Studies Lecture Theatre 8	Anatomy Lecture/Tutorial Lecture Theatre	12:00 pm to 1:00 pm Pathology/ Microbiology Lecture Lecture Theatre 8	1:00 pm to 3:00 pm SDL		

*Week 10th lecture will be delivered by Anatomy.
**Week 9th & 10th lecture will be delivered by Pharmacology.
***Week 1 to 3 will be delivered by Physiology, Week 4 to 8 will be delivered by Oral Pathology & Week 9 and 10 will be delivered by Community Dentistry

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