UNIVERSITY MEDICAL
& DENTAL COLLEGE

STUDY GUIDE

BLOCK 3

THEORY		
ANATOMY		
CODE	**SPECIFIC LEARNING OUTCOMES**	**TOPIC**
CVS-A-001	Describe the general organization of the vascular system, including the structure and functions of arteries, veins, and capillaries.	Organization of the Vascular System
CVS-A-002	Describe the general organization of the nervous system, including the central nervous system and peripheral nervous system overview.	Organization of the Nervous System
CVS-A-003	Describe and exemplify various types of anastomoses Describe three circulatory routes	Circulatory system
	Define portal system and describe its two varieties	
	Describe how the walls of blood vessels receive their blood supply, including the role of vasa vasorum and diffusion from the lumen.	
	Describe various components of lymph vascular system	
HISTOLOGY		
CODE	**SPECIFIC LEARNING OUTCOMES**	**TOPIC**
CVS-A-004	Describe the structure of lymphoid organs.	Lymphoid organs
PHYSIOLOGY		
CODE	**SPECIFIC LEARNING OUTCOMES**	**TOPIC**
CVS-P-001	Describe the blood components.	Blood: White Blood Cells and Body
	Enumerate the types of white blood cells along with their normal blood count.	

	Discuss their site of genesis.	Defense Mechanisms

	Describe the characteristics and functions of neutrophils.	
	Explain the process of phagocytosis and lysis of invading agents by neutrophils.	
	Explain the process of phagocytosis and lysis of invading agents by macrophages.	
	Explain the process of opsonization.	
	Describe the process of inflammation.	
	Enlist different lines of defense during inflammation.	
	Explain the process of migration of neutrophils from the blood into inflamed tissue.	
	Explain the functions of eosinophils and basophils.	
	Give normal lifespan of white blood cells.	
	Classify lymphocytes.	
	Classify T lymphocytes and enlist their salient functions.	
	Define immunity.	
	Describe innate immunity.	
	Describe and classify acquired immunity.	

CVS-P-002	Define passive immunity.	Immunity
	Discuss the role of T cells and B cells in acquired immunity.	
	Define plasma cells.	
	Describe the structure of antigen and immunoglobulin.	
	Enlist types of immunoglobulins.	
	Describe the mechanism of direct action of antibodies.	
CVS-P-003	Enumerate different blood group types.	Blood Types and Transfusion
	Explain the basis of ABO and Rh blood systems.	
	Discuss the features and complications of mismatched blood transfusion reaction.	
CVS-P-004	Define hemostasis.	Hemostasis and Blood Coagulation
	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.	
	Explain the steps involved in formation of primary platelet plug to seal small vascular holes.	
	Define thrombocytopenia.	

CVS-P-005	Enlist causes of thrombocytopenia.	Conditions Causing Excessive Bleeding
	Explain consequences of thrombocytopenia.	
	Enlist the clotting factors in blood.	
	Name vitamin K-dependent clotting factors.	
	Explain the intrinsic and extrinsic clotting pathways.	

	Describe mechanism of clot formation after injury.	
	Name and give mechanism of anticoagulants (heparin, oxalate, citrate) used in laboratory.	
	Enlist and explain the conditions that cause excessive bleeding (Vitamin K deficiency, Hemophilia, Thrombocytopenia).	
	Define prothrombin time and mention its significance.	
CVS-P-006	Describe the structure of heart and functioning of heart.	Heart: Cardiac Muscle, Pump Function, and Heart Valves
	Classify and exemplify various types of blood vessels.	
	Explain the physiological anatomy of cardiac muscle.	
	Describe and draw the phases of action potential of ventricle.	
	Describe and draw the phases of action potential of SA node and explain mechanism of self-excitation.	
	Draw and explain the conducting system of heart.	

CVS-P-007	Describe the mechanism of excitation-contraction coupling in cardiac muscle.	Rhythmical Excitation of the Heart
	Draw and explain pressure and volume changes of left ventricle during cardiac cycle.	
	Define and give the normal values of 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, and temperature on heart function.	
CVS-P-008	Define electrocardiogram.	Fundamentals of
	Enlist, draw, and explain the physiological basis and durations of waves, intervals, and segments of normal ECG.	Electrocardiography
CVS-P-009	Define tachycardia and enlist its causes.	Cardiac Arrhythmias
	Define bradycardia and enlist its causes.	
	Define sinus arrhythmia and its physiological basis.	
CVS-P-010	Explain the functional parts of circulation (arteries, arterioles, capillaries, veins, venules).	Circulation
	Mention the pressures in systemic and pulmonary circulation.	
	Describe nervous regulation of blood vessels and functioning of vasomotor centers.	
	Explain vasovagal syncope.	

CVS-P-011	Identify vessels constituting microcirculation.	Microcirculation and Lymphatic System: Capillary Exchange and Lymph Flow
	Enumerate Starling forces (hydrostatic and osmotic) and explain their role in capillary filtration and interstitial fluid formation.	
	Define edema.	
CVS-P-012	Describe local control of blood flow in response to tissue needs.	Local and Humoral Control of Tissue Blood Flow
	Discuss role of humoral factors in control of blood flow.	
	Explain acute mechanism of local blood flow control (tissue metabolism & oxygen demand).	
	Describe autoregulation of blood flow during changes in arterial pressure (metabolic and myogenic mechanisms).	
CVS-P-013	Define blood pressure and its two primary determinants (cardiac output and total peripheral resistance).	Arterial Blood Pressure: Measurement and Clinical Significance
	Define pulse pressure and mean arterial pressure.	

	Give normal blood pressure and mean arterial pressure values.	
CVS-P-014	Define hypertension.	Primary (Essential) Hypertension
CVS-P-015	Define cardiac output and venous return and give their normal values.	Cardiac Output, Venous Return, and Their Regulation
CVS-P-016	Enlist and explain factors that affect cardiac output and venous return.	
	Describe role of the nervous system in rapid control of arterial pressure.	
	Enumerate nervous reflex mechanisms for regulation of blood pressure.	

CVS-P-017	Explain the role of baroreceptors in regulation of arterial blood pressure.	Nervous Regulation of Circulation and Rapid Control of Arterial Pressure
	Explain the role of chemoreceptors in regulation of arterial blood pressure.	
	Explain CNS ischemic response.	
	Explain Cushing reaction.	
CVS-P-018	Describe role of renin-angiotensin-aldosterone mechanism in blood pressure regulation.	Role of Kidneys in Long-Term Control of Arterial Pressure
	Explain stress relaxation and capillary fluid shift.	
	Enlist immediate, intermediate, and long-term mechanisms of blood pressure regulation.	
CVS-P-019	Define and enlist different types of shock.	Circulatory Shock and Its Treatment
	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.	
	Explain stages of shock.	
	Enlist and explain compensatory mechanisms during non-progressive shock.	

CVS-P-020	Define angina pectoris and myocardial infarction.	Coronary Circulation and Ischemic Heart Disease
CVS-P-021	Enlist the different types of heart sounds and explain the physiological basis of each.	Heart Valves and Heart Sounds
	Enlist the causes of 3rd and 4th heart sounds.	
	Define murmur.	
BIOCHEMISTRY		
CODE	**SPECIFIC LEARNING OUTCOMES**	**TOPIC**
CVS-B-001	Define zwitter ion and isoelectric pH.	Chemistry and classification of amino acids
CVS-B-002	Understand the principle, procedure and uses of electrophoresis (demonstration only).	Electrophoresis
CVS-B-003	Describe the types of plasma proteins and explain their general functions.	Plasma proteins
	Enlist the functions and give the clinical importance of plasma proteins (albumin, fibrinogen, and transferrin).	
	Describe serum albumin and globulins and explain their biological roles in the human body.	
CVS-B-004	Describe the general structure of an antibody and identify its key components.	Immunoglobulin classes and their functions
	Enlist five major types of immunoglobulins and give functions/significance of each class separately.	

	Define eicosanoids.	
	Outline classification and biomedical importance of eicosanoids.	

CVS-B-005	Enlist functions of prostaglandins, leukotrienes and thromboxanes.	Eicosanoids
	Explain how low-dose aspirin therapy helps in the management of patients with IHD.	
CVS-B-006	Describe the structure, functions, metabolism & biomedical importance of cholesterol.	Cholesterol
CVS-B-007	Describe the structure, functions, metabolism & biomedical importance of plasma lipoproteins.	Plasma lipoproteins
CVS-B-008	List the components of a lipid profile and describe the significance of cardiac enzyme markers (TropT, CK-MB) in cardiovascular health.	Lipid profile
CVS-B-009	Describe vitamin K, its active forms, sources, RDA, biochemical roles, and deficiency manifestations.	Vitamins
PHARMACOLOGY & THERAPEUTICS		
CODE	**SPECIFIC LEARNING OUTCOMES**	**TOPIC**
CVS-Ph-001	Classify the major drugs acting on the CVS system according to their site, mechanism of action and their side effects: Classify antihypertensive drugs. Classify anti anginal drugs. Classify antiarrhythmic drugs. Classify drugs used in cardiac failure management.	Classification - CVS drugs
CVS-Ph-002	Classify anticoagulants. Describe their mechanisms of action ,clinical uses and side effects. Expalin pharmacokinetic and pharmacodynamics drug interactions of warfarin.	Classification - Blood drugs
PATHOLOGY		
CODE	**SPECIFIC LEARNING OUTCOMES**	**TOPIC**
CVS-Pa-001	Define white blood cell (WBC) disorders and classify them into benign and malignant types.	Disorders of WBCs

	Recognize the causes of reactive leukocytosis (infections, stress, inflammation) that result in elevated WBC counts and its impact on planning and post- operative healing.	
	Differentiate between reactive and neoplastic WBC disorders based on clinical and laboratory findings.	
	Explain the pathophysiology of leukemoid reactions and leukemias.	
CVS-Pa-002	Define the clinical aspects of innate and acquired immunity, including active and passive immunity.	Immunity
	Enlist 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)	
	Enlist the types of antibodies (IgG, IgA, IgM, IgE, IgD) and discuss their relevance in hypersensitivity reactions.	
CVS-Pa-003	Explain the types and pathogenesis of hypersensitivity reactions (Type I-IV).	Hypersensitivity reactions
CVS-Pa-004	Define the principles of ABO and Rh blood grouping systems.	Blood grouping & complications of blood transfusion
	State the importance of compatibility testing, including crossmatching, for safe transfusions.	
	Enlist the Hazards of blood transfusion.	
	Identify scenarios in dentistry where blood grouping knowledge is essential, such as surgeries or trauma management.	
	Describe the pathophysiology, features and treatment of Rh incompatibility.	
CVS-Pa-005	Define thrombosis, embolism, infarction, and hemorrhage as hemodynamic disorders relevant to systemic health.	Hemodynamic disorders
	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).	

	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.	
	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 systemic context.	
CVS-Pa-006	Define bleeding disorders.	Hemodynamics Platelets & Bleeding disorders
	Classify bleeding disorders into vascular, platelet, coagulation, and mixed types.	
	Enlist causes of thrombocytopenia, such as decreased production, increased destruction, or sequestration of platelets.	
	Enlist 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).	
	Identify and enlist the microorganisms responsible for infective endocarditis, particularly those originating from oral infections and dental procedures	Microbiology of
	Apply knowledge of Streptococcus viridans and Staphylococcus aureus and epidermidis to recognize their role in infective endocarditis and bacteremia, and their implications for dental care.	

CVS-Pa-007	Discuss HIV with its virulence factors, pathogenesis, lab diagnosis & prevention, recognize oral manifestations of HIV, including candidiasis, and periodontal disease, in immunosuppressed patients.	Blood: Relevance and Implications in Dentistry
	Identify oral ulcerations caused by Cytomegalovirus and Epstein-Barr Virus (Oral Hairy leukoplakaia, candidias, oral ulceration) in immunocompromised individuals.	
	Identify the role of enterococcus in infective endocarditis and bacteremia, and their implications for dental care.	
	Describe the dengue virus, its mode of transmission, key clinical features, and preventive measures, with emphasis on bleeding risk and implications for dental care.	
	Apply infection control protocols to prevent cross- contamination and transmission of bloodborne pathogens and parasites	
CVS-Pa-008	Define and classify types of shock (hypovolemic, cardiogenic, septic) and evaluate their pathophysiology.	Shock
CVS-Pa-009	Identify and enlist the microorganisms responsible for Myocarditis, particularly those originating from oral infections and dental procedures	Microbiology related to CVS & dentistry
	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 Porphyromonasgingivalis in contributing to cardiovascular diseases, including atherosclerosis, and integrate this knowledge into periodontal therapy.	

PRACTICALS / LAB WORK

ANATOMY		
CODE	**SPECIFIC LEARNING OUTCOMES**	**TOPIC**
CVS-A-005	Identify under light microscope/ draw and label arteries	Arteries
CVS-A-006	Identify under light microscope/ draw and label veins and capillaries	Veins
HISTOLOGY		
CODE	**SPECIFIC LEARNING OUTCOMES**	**TOPIC**
CVS-A-007	Draw and label light microscopic diagram of lymphoid organs	Lymphoid Organs
PHYSIOLOGY		
CODE	**SPECIFIC LEARNING OUTCOMES**	**TOPIC**
CVS-P-022	Observe the demonstration of blood grouping procedure and explain its clinical relevance in dental practice, including its role in managing medical emergencies.	Blood Grouping
CVS-P-023	Observe the demonstration of bleeding time measurement and explain its importance in assessing bleeding risk in dental procedures.	Bleeding Time
CVS-P-024	Observe the demonstration of clotting time measurement and explain its relevance to safe dental practice.	Clotting Time
CVS-P-025	Observe and identify the normal waveforms and intervals on a sample ECG tracing.	ECG Waveform Recognition
CVS-P-026	Calculate heart rate from a provided normal ECG tracing and describe its clinical significance.	ECG-Based Heart Rate Calculation
CVS-P-027	Demonstrate how to locate and palpate the apex beat on a simulation model or peer under supervision.	Cardiac Examination
CVS-P-028	Demonstrate the correct method to auscultate the precordium for heart sounds under supervision.	Cardiac Auscultation

THEORY		
ANATOMY		
CODE	**SPECIFIC LEARNING OUTCOMES**	**TOPIC**
GIT-A-001	Describe the parts and boundaries of oral cavity.	Oral Cavity Anatomy
GIT-A-002	Describe the anatomical features of tongue with emphasis on its musculature, vascular supply and lymphatic drainage.	Tongue Structure and Vascular Supply
GIT-A-003	Describe the anatomical features of hard and soft palate with their neurovascular supply.	Palate Anatomy and Neurovascular Supply
GIT-A-004	Describe the attachments of muscles of soft palate along with their actions and nerve supply.	Muscles of Soft Palate
GIT-A-005	Describe anatomical features, blood supply, and nerve supply of salivary glands.	Salivary Glands Anatomy and Neurovascular Supply
GIT-A-006	Discuss the clinical correlates of parotid gland: Mumps, Frey's syndrome.	Parotid Gland Clinical Correlates
GIT-A-007	Describe the location, roots and distribution of submandibular and otic ganglia.	Submandibular and Otic Ganglia
GIT-A-008	Name the parts of pharynx giving their extent, anatomical features, structure and neurovascular supply.	Pharynx Anatomy and Neurovascular Supply
GIT-A-009	Describe the attachments of muscles of pharynx along with their actions and nerve supply.	Muscles of Pharynx
GIT-A-010	Discuss the location, anatomical features and vascular supply of palatine tonsils.	Palatine Tonsil Anatomy and Vascular Supply
GIT-A-011	Discuss the clinical correlates of piriform fossa and tonsils: Adenoids, Quincy, Tonsilitis.	Piriform Fossa and Tonsils Clinical Correlates

GIT-A-012	Enlist the structures forming the Waldeyer's ring of lymphatic tissue.	Waldeyer's Ring of
		Lymphatic Tissue
GIT-A-013	Describe the anatomical features of cervical part of esophagus with its neurovascular supply.	Cervical Esophagus Anatomy and Neurovascular Supply
HISTOLOGY		
CODE	**SPECIFIC LEARNING OUTCOMES**	**TOPIC**
GIT-A-014	Describe the light microscopic structure of lip	Oral Cavity
	Describe the light microscopic structure of tongue	
EMBRYOLOGY		
CODE	**SPECIFIC LEARNING OUTCOMES**	**TOPIC**
GIT-A-015	Describe the development of tongue	Tongue
PHYSIOLOGY		
CODE	**SPECIFIC LEARNING OUTCOMES**	**TOPIC**
GIT-P-001	Describe physiologic anatomy of gastrointestinal tract. Discuss electrical activity of smooth muscles of GIT.	General Principles of GIT Function - Motility, Nervous Control
	Describe the mechanism of excitation of smooth muscle of gastrointestinal tract.	
	Discuss the factors that depolarize and hyperpolarize GI membrane.	

GIT-P-002	Describe the role of autonomic nervous system in regulation of GIT's function.	Neural and Hormonal Regulation of Gastrointestinal 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)	
	Differentiate between sympathetic and parasympathetic modulation of the enteric nervous system and the effector organs of the GI tract	
GIT-P-003	Discuss functional movements of GIT (propulsive & mixing)	Functional types of movements in the GI tract
GIT-P-004	Discuss the pathophysiology& features of achalasia & Mega esophagus.	Esophagus
GIT-P-005	Describe the stages of vomiting act. Appraise the location and function of vomiting center/ chemoreceptor trigger zone in the brain	Vomiting Reflex
GIT-P-006	Explain motor function of stomach. Explain factors which regulate stomach emptying	Motor function of Stomach
GIT-P-007	Describe characteristics & functions of the gastric secretions.	Gastric secretion
	Discuss the role of Intrinsic factor from gastric parietal cells	
GIT-P-008	Define and discuss basic causes of gastritis and Pernicious anemia.	Pathophysiology of Stomach
	Define & enumerate the causes and pathophysiology of peptic ulcer	

GIT-P-009	Enumerate the types of movements taking place in small intestine and mention their function.	Movements of the small intestine General
	What is peristaltic rush and enteritis?	
GIT-P-010	Enumerate the types of movements taking place in colon and give their functions	Movements of the Colon
BIOCHEMISTRY		
CODE	**SPECIFIC LEARNING OUTCOMES**	**TOPIC**
GIT-B-001	Elaborate the composition and functions of saliva.	Saliva
GIT-B-002	Give composition and functions of gastric juice. Correlate chronic use of NSAIDs with development of peptic ulcer	Gastric secretions
GIT-B-003	Give composition and functions of pancreatic juice, bile and succus entericus	Pancreatic juice, bile and succus entericus
GIT-B-004	Describe the mechanism of digestion and absorption of dietary carbohydrates	Digestion and absorption
GIT-B-005	Give cause,clinical features, diagnosis and management of lactose intolerance.	
GIT-B-006	Describe the mechanism of digestion and absorption of dietary proteins.	
GIT-B-007	Explain the process of digestion and absorption of dietary lipids.	
PHARMACOLOGY & THERAPEUTICS		
CODE	**SPECIFIC LEARNING OUTCOMES**	**TOPIC**
	Classify the drugs used for the treatment of Acid- Peptic Disease (APD)	
	Explain their mechanism of action, uses and adverse effects	

GIT-Ph-001	Correlate chronic use of NSAIDS with development of peptic ulcer.	Acid Peptic disease
	Write down Tripple and Quadruple regimen for APD	
GIT-Ph-002	Classify antiemetics	Antiemetics and Prokinetics
	Describe the mechanism of action, clinical uses, and adverse effects of metoclopramide	
	Compare metoclopramide and Domperidone	
	Name the drugs used in the prevention of chemotherapy- or radiation-induced emesis	

GIT-Ph-003	Classify Laxatives and antidiarrheals	Classification of laxatives & antidiarrheals
ORAL BIOLOGY & TOOTH MORPHOLOGY		
CODE	**SPECIFIC LEARNING OUTCOMES**	**TOPIC**
GIT-OB-001	Define oral mucosa	Oral Mucosa
	Explain the histological structure of oral mucosa with elaboration of keratinized and non-keratinized epithelium.	
	Explain the cellular events in maturation of oral mucosa	
	Enumerate and discuss the details of the non- keratinocytes in the oral epithelium and lamina propria.	
	Describe the blood supply and nerve supply of oral mucosa	
	Explain the structural variation in oral mucosa.	

	Explain the mucocutaneous junctions in the oral mucosa.	
	Describe the biological stages of wound healing in the oral mucosa, highlighting the role of the inflammatory response and granulation tissue formation.	
	Describe the age-related changes in oral mucosa	
GIT-OB-002	Describe the process of taste perception and identify the major systems involved in supporting the sense of taste.	Physiology of Taste
	Describe the structure, location, and function of taste buds along with the mechanism of taste sensations	
	Identify the basic taste modalities and recognize the major conditions that affect the sense of taste	
GIT-OB-003	Define saliva, describe its composition and function.	Salivary Glands
	Classify salivary glands	

	Describe the development of salivary glands.	
	Elaborate its changes with age and its clinical considerations	
	Describe the histological structure of salivary glands along with acini and ducts	
	Explain the role of myoepithelial cells	
	Explain the microscopic structure of the salivary glands	
	Describe the connective tissue of salivary glands	
GIT-OB-004	Discuss the mechanism of saliva formation and its ductal modification.	Saliva

PATHOLOGY		
CODE	**SPECIFIC LEARNING OUTCOMES**	**TOPIC**
GIT-Pa-001	Define heartburn and describe its pathophysiology as a symptom of gastroesophageal reflux disease (GERD).	GERD
	Enumerate the etiology and clinical features of GERD and peptic ulcer disease.	
MICROBIOLOGY		
CODE	**SPECIFIC LEARNING OUTCOMES**	**TOPIC**
GIT-Pa-002	Enlist different organisms causing oral lesions.	Microbial Agents Associated with Oral Lesions
	Briefly discuss HPV, as disease causing organisms, their epidemiology, virulence factors, pathogenesis, lab diagnosis & prevention.	
GIT-Pa-003	Enlist different organisms causing diarrhea.	Microbial Agents Associated with Diarrhea
	Discuss E. coli, Salmonella, C. difficile, C. botulinum, Intestinal Protozoa, shigella & vibrio cholera as disease causing organisms, their epidemiology, virulence factors, pathogenesis, lab diagnosis & prevention.	
GIT-Pa-004	Briefly discuss Helicobacter pylori with its epidemiology, virulence factors, pathogenesis, lab diagnosis & prevention.	Helicobacter pylori Infection
ORAL PATHOLOGY		
CODE	**SPECIFIC LEARNING OUTCOMES**	**TOPIC**
GIT-OP-001	Discuss clinical abnormalities of Salivary secretions.	Abnormalities of salivary secretions
	Describe the etiology and clinical features of xerostomia.	
	Explain the management options available for patients suffering from xerostomia.	

	Explain the biochemical mechanisms that contribute to the development of rampant caries in patients with xerostomia	
GIT-OP-002	Define and enlist the types and salient features of ulcers (acute, chronic and recurrent)	Aphthous ulcers
GIT-OP-003	Describe the anomalies of tongue (ankyloglossia, aglossia, macroglossia, microglossia) and Lips	Anomalies of tongue and lips

PRACTICALS / LAB WORK		
HISTOLOGY		
CODE	**SPECIFIC LEARNING OUTCOMES**	**TOPIC**
GIT-A-016	Identify under light microscope and draw and label the light microscopic structure of lip.	Lip
GIT-A-017	Identify under light microscope and draw and label the light microscopic structure of tongue.	Tongue
ORAL BIOLOGY & TOOTH MORPHOLOGY		
CODE	**SPECIFIC LEARNING OUTCOMES**	**TOPIC**
GIT-OB-006	Draw and label the keratinized and non-keratinized oral epithelium, specialized mucosa including tongue papillae and mucocutaneous junction.	Oral Epithelium and Specialized Mucosa
GIT-OB-006	Draw and label the histological structure of the taste bud, and mention the specificity of the tongue for different taste sensations.	Taste Bud Structure and Tongue Sensory Map
GIT-OB-007	Identify in images or slides the histological section of the tongue showing different tongue papillae and the location of taste buds.	Tongue Papillae and Taste Bud Identification

GIT-OB-008	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.	Salivary Gland Histology

THEORY		
ANATOMY		
CODE	**SPECIFIC LEARNING OUTCOMES**	**TOPIC**
Oc1-A-001	Describe the extracranial course, branches, and distribution of trigeminal nerve.	Trigeminal Nerve and Sensory Innervation
	Explain the causes and clinical consequences of damage to the nerve.	
	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.	
Oc1-A-002	Describe temporomandibular joint mentioning its ligaments, nerve supply and movements.	Temporomandibular Joint (TMJ)
Oc1-A-003	Identify and describe the muscles of mastication along with origin, insertion, action, and innervation of each muscle	Muscles of Mastication
	Identify and demonstrate the origin, insertion, nerve supply, and actions of the muscles of mastication on models or cadaveric specimens	
ORAL BIOLOGY AND TOOTH MORPHOLOGY		
CODE	**SPECIFIC LEARNING OUTCOMES**	**TOPIC**
Oc1-OB-001	Describe the histology of the temporomandibular joint (temporal and condylar bone, muscles, capsule, disk, synovial membrane, and ligaments)	Temporomandibular Joint
Oc1-OB-002	Describe the biomechanics of TMJ	

Oc1-OB-003	Describe the nerve supply of the joint emphasizing the role of nerve endings	Muscle Contraction (TMJ)
Oc1-OB-004	Identify the common TMJ associated clinical manifestations	
Oc1-OB-005	Define Mastication	Mastication

	Elaborate chewing cycle of mastication.	
	What are the different stages of mastication?	
	What are the different muscles involved in mastication? Give their origin, insertions, innervation, and functions	
Oc1-OB-006	Define the terms swallowing and deglutition	Physiology of Swallowing
	Describe the stages of swallowing, outlining the sequence and key physiological events involved in each stage.	
	Describe the pathway involved in swallowing and its neural control mechanisms.	
Oc1-OB-007	Define occlusion. Describe centric & eccentric occlusion.	Occlusion
Oc1-OB-008	Describe the crown morphology of deciduous & permanent incisors.	Deciduous & Permanent Incisors
	Describe the key identification points of deciduous & permanent incisors	
	Describe the normal root and pulpal morphology of maxillary and mandibular incisors	
	Identify and classify common structural anomalies of incisors	
	Interpret periapical radiographs of incisors, recognizing normal anatomy and common anomalies.	

Oc1-OB-009	Describe the crown morphology of deciduous & permanent canines	Deciduous & Permanent canines
	Describe the normal root and pulpal morphology of maxillary and mandibular canines	
	Describe the key identification points of deciduous & permanent canines	
	Identify and classify common structural anomalies of canines	
	Interpret periapical radiographs of canines, recognizing normal anatomy and common anomalies.	

	Define and differentiate between overjet and overbite, and explain their clinical significance.	
Oc1-OB-010	Define forensic odontology and explain the significance of forensic odontology in dental identification and legal investigations.	Forensic odontology
MICROBIOLOGY		
CODE	**SPECIFIC LEARNING OUTCOMES**	**TOPIC**
Oc1-Pa-001	Describe microbial teratogens associated with craniofacial and dental anomalies, with examples (e.g., traponema, rubella, cytomegalovirus, HIV).	Infectious diseases
PRACTICALS / LAB WORK		
ANATOMY		
CODE	**SPECIFIC LEARNING OUTCOMES**	**TOPIC**

Oc1-A-004	Demonstrate basic functional mandibular movements and differentiate the role of muscles of Mastication and accessory muscles in protrusion, lateral excursion, opening, and closing.	Jaw Muscles
	Identify and demonstrate the origin, insertion, nerve supply, and actions of the muscles of mastication on models or cadaveric specimens	
Oc1-A-005	Demonstrate surface marking of trigeminal nerve in relation to relevant structures, and identify their anatomical pathways and clinical relevance.	Neurovascular Supply of face
ORAL BIOLOGY AND TOOTH MORPHOLOGY		
CODE	**SPECIFIC LEARNING OUTCOMES**	**TOPIC**
Oc1-OB-011	Draw & label the histological section of the temporomandibular joint, showing temporal bone, disc, condylar bone, capsule, articular disc, and synovial membrane.	Temporomandibular Joint

	Demonstrate basic functional mandibular movements and differentiate the role of muscles of Mastication and accessory muscles in protrusion, lateral excursion, opening, and closing.	
Oc1-OB-012	Draw the outlines of all deciduous & permanent incisors: labial, lingual, mesial, distal & incisal aspects	Deciduous & Permanent Incisors
	Label each aspect pointing their morphological features (Incisal corners, marginal ridges, fossa, cingulum, pit, developmental depressions, imbrication lines & contact points)	
	Carve anatomical accurate models of incisors from soap blocks/ wax blocks	
	Identify Permanent Incisors on models.	
Oc1-OB-	Draw the outlines of all deciduous & permanent canines: labial, lingual, mesial, distal & incisal aspects	Deciduous & Permanent
	Label each aspect pointing their morphological features (Incisal slopes, labial/lingual ridges, marginal ridges, fossa, cingulum, developmental depressions, imbrication lines & contact points)	

013	Carve anatomical accurate models of canines from soap blocks/ wax blocks	canines
	Identify Permanent Canines on models.	