Islam Dental College, Sialkot
Study Guide Block I
Drafted By Department of Dental Education.

Program Overview

The mission of the Bachelor of Dental Surgery (BDS) program is to develop competent, safe, and ethical dental practitioners through an integrated curriculum that combines basic sciences, clinical training, research, and community-oriented practice. The program aims to align with the standards of the Pakistan Medical and Dental Council and the University of Health Sciences, ensuring graduates are equipped with the knowledge, skills, professionalism, and lifelong learning abilities required to meet national oral health needs and compete at international levels."

Program Outcomes

By the completion of the Bachelor of Dental Surgery, a graduate is expected to;

1. Demonstrate the professional values expected of a doctor
2. Behave ethically and lawfully in clinical practice
3. Communicate effectively with patients, carers, and colleagues
4. Gather and record relevant information from patients
5. Make a clinical assessment of the patient's problems
6. Make clinical decisions and construct management plans
7. Perform clinical procedures safely and effectively
8. Use evidence to support clinical decision-making
9. Improve the quality and safety of patient care
10. Carry out research and contribute to evidence-based practice
11. Promote health and prevent disease
12. Develop as a professional through lifelong learning

1st Professional B.D.S Overview

Year 1 of the BDS program, structured under the integrated curriculum framework of the University of Health Sciences Lahore, serves as the foundational phase that builds the essential scientific, clinical, and professional base for dental education. Organized into three progressive blocks, it introduces students to the structure and function of the human body with a strong emphasis on craniofacial anatomy, oral biology, and basic biomedical sciences. Through integration of subjects such as Anatomy, Physiology, Biochemistry, General Pathology, and Oral Biology & Tooth Morphology, students develop a deep understanding of normal structure and function, which forms the basis for recognizing disease processes later in the curriculum. Early exposure to research principles, along with longitudinal courses such as Islamiyat/Ethics, Pakistan Studies, and behavioural sciences, ensures that students begin to develop a sense of ethical responsibility, professionalism, and critical thinking from the outset.

As students progress through the three blocks, the curriculum shifts from foundational sciences in Block I to systems-based integration in Blocks II and III. Block II emphasizes the pathophysiological basis of disease, integrating General Pathology, Pharmacology, Periodontology, Oral Pathology, and Dental Radiology with anatomical and physiological

concepts to help students understand disease mechanisms and their clinical relevance. This block also strengthens psychomotor skills through early clinical exposure in Operative Dentistry (Preclinical) and reinforces communication, patient interaction, and behavioural sciences. Block III further advances this integration by focusing on systemic diseases, diagnostics, and clinical applications, incorporating cardiovascular, gastrointestinal, and nutritional sciences with dental disciplines. Students begin to interpret diagnostic data, understand radiographic findings, and apply pharmacological knowledge in simulated clinical scenarios, preparing them for more advanced clinical training in subsequent years.

Throughout Year 1, emphasis is placed on developing core competencies, including communication skills, teamwork, time management, and professional behaviour. The inclusion of Community & Preventive Dentistry fosters an early understanding of public health principles and preventive care, aligning dental education with population health needs. Parallel courses such as Ethics and Pakistan Studies nurture civic responsibility and cultural awareness, while Research methodology introduces students to evidence-based thinking and academic inquiry. Teaching strategies such as lectures, small group discussions, case-based learning, practical sessions, and simulations are paired with diverse assessment methods, including MCQs, SEQs, OSPE/OSCE, viva voce, and reflective evaluations. Collectively, Year 1 establishes a strong academic, ethical, and clinical foundation, ensuring that students transition into higher years with the necessary knowledge, skills, and professional attitudes required for competent dental practice.

BLOCK I – FOUNDATION & CRANIOFACIAL BASICS

Block I serves as the foundational entry point into the BDS curriculum, introducing students to the essential principles of basic sciences, early dental concepts, and professional development. It is carefully structured around four core modules—*Foundation I: Cellular & Molecular Basis of Life, Craniofacial Structure & Development I, Cariology I: Introduction to Oral Environment,* and *Professionalism & Behavioral Sciences*. Together, these modules establish the groundwork for understanding human biology, oral health, and the professional responsibilities of a dental practitioner.

The *Foundation I* module focuses on the fundamental building blocks of life, including cell structure, molecular processes, genetics, and basic biochemical mechanisms. This knowledge is essential for understanding normal physiological functions and forms the basis for interpreting disease processes in later stages. *Craniofacial Structure & Development I* introduces students to the early development and basic anatomy of the head and neck region, emphasizing embryological processes and structural organization that are directly relevant to dentistry.

The *Cariology I* module provides an introduction to the oral environment, including tooth structure, saliva, oral microbiota, and the dynamic processes involved in maintaining oral health. It begins to link basic science concepts with dental relevance by highlighting factors involved in the initiation of dental caries. Complementing the scientific content, the *Professionalism & Behavioral Sciences* module focuses on developing essential soft skills

such as communication, ethical conduct, teamwork, and understanding patient behavior. This module ensures that students begin their dental education with a strong sense of professional identity and responsibility.

Modules in Block 1

Module No.	Module Title	Integrated Subjects	Key Focus Areas
1	Foundation I- Cellular & Molecular Basis of Life	Anatomy, Biochemistry, Physiology, General Pathology, Pharmacology (Intro), Research	Biomolecules, enzymes, metabolism, cell structure, homeostasis, cellular injury, drug basics, research literacy
2	Craniofacial Structure & Development I	Anatomy, Oral Biology & Tooth Morphology, Oral Pathology (Intro)	Skull anatomy, facial development, tooth morphology, and oral tissues
3	Cariology I- Introduction to Oral Environment	Oral Biology, Community & Preventive Dentistry, Operative Dentistry (Preclinical)	Oral microbiome, caries, prevention, tooth carving skills
L (Longitudinal)	Professionalism & Behavioral Sciences	Islamiyat/Ethics/Pak Studies (CFRC-I), Psychiatry & Behavioural Sciences, PRISMe (Professionalism, Research, Informatics, Social Responsibility, Marketing & Entrepreneurship)	Ethics, communication, professionalism, behavioural sciences, civic awareness

Teaching & Learning Strategies:

- **Interactive Lectures** – Short, focused sessions incorporating questioning, polling, and discussion to actively engage students rather than passive listening.
- **Small Group Discussions (SGDs)** – Facilitated group work to analyze concepts such as cell structure, molecular pathways, and genetics, promoting peer learning and critical thinking.

- **Problem-Based Learning (PBL)** – Case-triggered learning where students explore clinical or scenario-based problems (e.g., cellular dysfunction, genetic disorders) to integrate basic science concepts.
- **Case-Based Learning (CBL)** – Structured clinical cases linking molecular and cellular mechanisms to oral and systemic diseases.
- **Practical/Laboratory Sessions** – Hands-on activities including microscopy, identification of cellular components, and basic biochemical experiments to reinforce theoretical knowledge.
- **Self-Directed Learning (SDL)** – Guided independent study using predefined objectives, encouraging students to explore resources, research topics, and develop lifelong learning habits.
- **Flipped Classroom Approach** – Pre-class preparation through videos or reading materials, followed by in-class application and discussion.
- **Peer Teaching & Presentations** – Students present assigned topics, enhancing understanding, communication skills, and confidence.
- **Skills-Based Sessions** – Early exposure to basic laboratory techniques, use of digital tools, and academic writing skills.
- **E-Learning / LMS-Based Activities** – Online discussions, quizzes, and resource sharing to supplement classroom teaching.
- **Reflective Practice** – Short reflective writing tasks to help students connect learning with personal and professional development.

Module I Introduction

This module introduces students to the fundamental building blocks of life, focusing on the structure and function of cells and the molecular mechanisms that sustain life processes. It integrates concepts from cell biology, biochemistry, and genetics to provide a comprehensive understanding of how normal cellular activities are regulated and how their disruption leads to disease.

Students will explore cellular organization, membrane dynamics, intracellular components, and biochemical pathways essential for energy production, growth, and repair. The module also highlights the role of DNA, RNA, and proteins in maintaining cellular integrity and transmitting genetic information. Emphasis is placed on linking these molecular and cellular concepts to oral health and disease, laying the groundwork for understanding pathology in later years.

In addition to core scientific knowledge, the module promotes essential academic skills such as scientific reasoning, effective communication, use of digital tools, and ethical conduct in academic and clinical settings. By the end of this module, students are expected to develop a strong conceptual base that will support their progression into more complex biomedical and dental sciences.

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
Module I: Foundation I					
Anatomy	Introduction to Human Anatomy	Define various branches of Anatomy	C	Lecture	MCQs
		Describe the Anatomical Positions, Planes, & Movements of the Body	C	Lecture	MCQs
	Osteology	Classify bones based on region, size, and shape, providing examples of each from the head and neck.	C	SGD	MCQs/Viva
		Discuss the structural characteristics of compact and spongy bones	C	Lecture	MCQs/Viva
		Describe the structure of an adult long bone.	C	Models	Viva
		Explain craniofacial development	C	Lecture	MCQs/Viva
		Define ossification and the rule of ossification	C	Lecture	MCQs

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
		Describe the blood supply of various types of long bones	C	SGD	Viva
	Joints	Describe the structural classification of Joints	C	Lecture	MCQs
		Enlist the general characteristics of synovial joints	C	Lecture	MCQs
		Enlist the factors stabilizing a synovial joint	C	SGD	MCQs
		Describe Hilton's Law	C	Lecture	MCQs
	Cartilage	Discuss Characteristics of the Hyaline, Elastic, & Fibro cartilage	C	Lecture	MCQs
Histology	Cell	List the membranous and non-membranous organelles of the cell alongside a description of their structure, in correlation with their function.	C	Lecture	MCQs/Viva
		Describe the structure of different	C	Lecture	MCQs

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
		types of cell junctions			
	Epithelia	Classify the epithelia with their histological structure, locations, functions, & examples.	C	Lecture	MCQs/Viva
		Describe apical specializations of epithelia (microvilli, stereocilia, and cilia) and the basement membrane.	C	Lecture	MCQs
		Classify exocrine glands with examples on the basis of the shape of secretory portions and ducts, mode of secretion, and type of secretion.	C	SGD	MCQs/Viva
	Connective Tissues	List the cells of connective tissue with their functions.	C	Lecture	MCQs
Embryology	Cell Division & Gametogenesis	Describe mitosis and meiosis.	C	Lecture	MCQs
		Describe oogenesis, spermatogenesis,	C	SGD	MCQs/Viva

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
		spermiogenesis, and the embryological basis of teratoma.			
	Fertilization & Early Development	Define the following: Fertilization, Phases of Fertilization, Capacitation, and Acrosomal Reaction.	C	Lecture	MCQs/Viva
		Explain the outcomes of fertilization.	C	Lecture	MCQs
		Describe cleavage, morula, blastocyst formation, and implantation	C	SGD	MCQs
	Formation of the Embryonic Disc and Germ Layers	Describe the embryonic disc, amniotic cavity, yolk sac, and gastrulation.	C	Lecture	MCQs
		Explain gastrulation and derivatives of the three germ layers	C	SGD	Viva
		Explain derivatives of ectoderm, mesoderm, and endoderm.	C	SGD	MCQs

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
Physiology	Homeostasis: Control of Internal Environment	Define homeostasis	C	Lecture	MCQs
		Explain its importance in maintaining the internal environment.	C	Lecture	MCQs
		Differentiate between extracellular and intracellular Fluids (with special emphasis on comparing the concentration of sodium, potassium, and calcium ions)	C	SGD	Viva
	Control Systems of the Body	Explain the principles of positive, negative, and feed-forward control mechanisms with examples.	C	SGD	MCQs
	Cell and its Organelles and their Function	Describe the functions of cell organelles, including the nucleus, endoplasmic reticulum, Golgi apparatus,	C	Lecture	MCQs/Viva

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
		lysosomes, peroxisomes, mitochondria, and ribosomes.			
		Differentiate between the functions of smooth and rough endoplasmic reticulum.	C	Lecture	MCQs
	Cell Structure and Membrane Organization	Enumerate the components and functions of the cytoskeleton	C	Lecture	MCQs/Viva
		Describe the structure of the cell membrane and the fluid-mosaic model.	C	SGD	Viva
	Functional Systems of the Cell	Explain the following mechanisms: Endocytosis and Exocytosis, Pinocytosis, and Phagocytosis.	C	Lecture	MCQs
	Transport of Substances through the Cell Membrane	Describe the mechanisms of simple diffusion, facilitated diffusion, osmosis, active transport, and ion channels.	C	Lecture	MCQs

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
		Compare the features of simple and facilitated diffusion with examples	C	SGD	MCQs
		Describe primary and secondary active transport with examples	C	Lecture	MCQs
Biochemistry	Carbohydrates	Define Carbohydrates	C	Lecture	MCQs
		Classify Carbohydrates	C	Lecture	MCQs
		Define with suitable examples of the following: • Aldo-keto isomers • D & L isomers (Enantiomers) • Epimers • Alpha and beta Anomers	C	SGD	MCQs/Viva
		Define with suitable examples of: • Reducing sugars	C	SGD	MCQs

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
		• Non-reducing sugars			
		Describe sources, structure, and importance of glucose, galactose, fructose, and ribose.	C	SGD	MCQs
		Interpret fasting & random blood sugar level.	C	SGD	MCQs
		Enumerate types of Diabetes mellitus with causes of hyperglycemia in each type.	C	SGD	MCQs
		Describe the formation, hydrolysis, naming, and types of glycosidic bond (N and O -glycosidic bonds).	C	Lectures	MCQs/Viva
		Explain the importance of the glycosidic bond.	C	SGD	Viva
		Enumerate sources, linkages, and building blocks of maltose, isomaltose, lactose,	C	SGD	Viva

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
		lactulose, and sucrose.			
		Explain the importance of maltose, iso-maltose, lactose, lactulose, and sucrose.	C	SGD	MCQs
		Discuss the significance of oligosaccharides in the cell membrane.	C	Lecture	MCQs
		Explain sources, structure, and importance of dextrins and dextrans.	C	SGD	MCQs
		Enlist sources of starch, alongside elaborating on the structure of starch.	C	Lecture	MCQs
		Explain the importance of starch in the human diet.	C	Lecture	VIVA
		Elaborate on the structure of glycogen.	C	Lecture	MCQs
		Discuss the importance of	C	SGD	MCQs

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
		glycogen in the human body.			
		Explain the structure and sources of cellulose.	C	Lecture	Viva
		Appraise the role of dietary fiber in health and disease.	C	Lecture	MCQs
		Elaborate on the structural functions of Glycosaminoglycans (GAGs).	C	SGD	MCQs
		Define glycemic index	C	Lecture	MCQs
		Evaluate the effect of various dietary carbohydrates on blood sugar level (BSL) in correlation with clinical significance.	C	Lecture	MCQs
	Lipids	Define lipids	C	Lecture	MCQs
		Classify Lipids	C	Lecture	MCQs
	Vitamins	Define vitamins	C	SGD	MCQs
		Classify vitamins according to their solubility.	C	SGD	MCQs/Viva

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
	Cell	Describe the biochemical structures of cell membranes	C	Lecture	MCQs
		Explain biochemical compartmentalization	C	Lecture	MCQs
	Signal Transduction Pathways	Describe receptors and signal transduction pathways (Gs, Gq).	C	SGD	MCQs
Oral Biology & Tooth Morphology	Structure of Oral Tissues (A Brief Introduction)	Describe the oral tissues, including oral mucosa, salivary glands, bones of the jaws, temporomandibular joint, enamel, dentin, cementum, and periodontal ligament.	C	Lecture	MCQs/Viva
	Cytoskeleton	Describe the structure, types, and functions of the cytoskeleton, including microfilaments, intermediate filaments, and microtubules, within oral tissues.	C	Lecture	MCQs
	Cell Junctions	Describe intercellular	C	Lecture	MCQs/Viva

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
		junctions, including tight junctions, adherens junctions, desmosomes, and gap junctions.			
		Explain the role of desmosomes and hemidesmosomes in the oral epithelium.	C	Lecture	MCQs
	Fibroblasts	Describe the structure, secretory functions, and role of fibroblasts in the maintenance of the extracellular matrix in oral tissues.	C	Lecture	MCQs
		Describe collagen synthesis and assembly briefly, highlighting its importance in oral connective tissue.	C	SGD	MCQs
	Introduction and Nomenclature of dentition	Name the three major functions of the human dentition	C	Lecture	MCQs
		Describe various ways of classifying human dentition	C	Lecture	MCQs
		Define the three dentition periods	C	Lecture	MCQs

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
		(deciduous, mixed, permanent).			
		Identify each period's approximate time intervals, initiation, and termination events.	C	Lecture	MCQs/Viva
		Differentiate primary vs permanent dentition, including timing.	C	SGD	MCQs
		Describe the dental Formula for permanent and Deciduous dentition	C	SGD	MCQs
		Define "succedaneous" and identify succedaneous teeth	C	SGD	MCQ
		Describe the eruption pattern of primary and permanent dentition	C	SGD	MCQs
		Demonstrate application of various dental numbering systems (e.g., universal, FDI, Palmer).	C	Practical	OSCE

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
General Pathology	Introduction	Define the terms: pathology, etiology & pathogenesis	C	Lecture	MCQs
	Cellular Injury	Describe the causes of cell injury	C	Lecture	MCQs
		Explain mechanisms of cell damage.	C	SGD	MCQs
		Correlate with oral pathology	C	CBL	MCQs
		Identify microscopic changes	P	Lab	OSPE
	Cell Death	Define necrosis with examples	C	Lecture	MCQs
		Describe the morphological features of coagulative, liquefactive, caseous, and fat necrosis. Give their pathway.	C	Lecture	MCQs/Viva
		Define apoptosis with examples.	C	Lecture	MCQs
		Describe mechanisms and morphological features alongside their pathway.	C	Lecture	MCQs

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
Community & Preventive Dentistry	Introduction to Dental Public Health	Define dental public health	C	Lecture	MCQs
		Describe its scope and importance.	C	Lecture	MCQs
	Concepts of Health and Disease	Describe the dimensions of health (physical, mental, social, etc.)	C	Lecture	MCQs
		Differentiate between illness and disease.	C	Lecture	MCQs
	Public Health vs Clinical Practice	Differentiate between clinical dentistry and public health dentistry	C	Lecture	MCQs
	Disease Importance in Public Health	Describe the criteria that make a disease important from a public health perspective.	C	SGD	MCQs
	Levels of Prevention	Explain levels of prevention (primordial, primary, secondary, tertiary) with relevant dental examples.	C	SGD	MCQs/Viva
	Health Promotion Principles	Explain the principles of health promotion and disease prevention	C	SGD	MCQs

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
		strategies at the individual and community levels.			
	Health Education and Promotion	Apply principles of health promotion and health education to oral and dental health contexts.	C	Community Field Trips	OSCE
	Health Education and Communication	Describe methods of health education and communication in community dentistry.	C	Lecture	MCQs
	School and Community-Based Programs	Describe school oral health programs and preventive strategies at the community level.	C	Lecture	MCQs
PRISM Research	Professionalism	Recognize attributes of professionalism (respect, integrity, accountability)	C	Lecture	MCQs
		Define professionalism in dentistry.	C	SGD	MCQs
		Identify unprofessional behaviors	P	Workshop	Assignment

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
		Practice patient-centered communication (role play)	A	Discussion	Reflective Log
		Apply basic reflective practice.	C	Discussion	Reflective Log
	Research	Recognize fundamentals of academic writing, i.e., official applications, letters, report writing, etc.	A	Lecture	E-Portfolio
		Define research, inquiry, and evidence-based dentistry.	C	Lecture	MCQs
		Recognize the importance of research in dentistry	A	Lecture	MCQs
		Identify forms of scientific writing (editorial, article, review, case report, meta-analysis.	C	Discussion	Reflective Log
		Explain IMRAD structure	C	Lecture	MCQs
		Differentiate types of health research (basic, clinical,	C	Lecture	MCQs

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
		applied, public health)			
		List the differences between quantitative and qualitative research	C	Lecture	MCQs
		Describe basic principles of research ethics.	C	Lecture	MCQs
	Informatics	Practice email etiquette & online communication norms (WhatsApp/Social Media Platforms)	C	Discussion	E-Portfolio
		Use Word/Google Docs for academic writing basics	C	Discussion	E-Portfolio
		Apply safe internet use, recognize credible vs. unreliable sources	C	Discussion	E-Portfolio
	Social Responsibility, Cultural Sensitivity. Ethics & Jurisprudence	Define social responsibility in dentistry	C	Lecture	MCQs
		Describe the role of the dentist in public health promotion	C	Lecture	MCQs

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
		Identify cultural diversity in Pakistan.	C	Lecture	MCQs
		Explain principles of ethics (autonomy, beneficence, non-maleficence, justice)	C	Role Play	MCQs/Reflective Log
		Take a proper dental consent before treatment	C	Role Play	Reflective Log
	Management & Entrepreneurship	Describe the concept of teamwork and its relevance in dental practice.	C	Lecture	MCQs
		Explain basic workflow (hierarchy) in academic and lab settings.	C	Discussion	MCQs
		Apply simple time management strategies for balancing academic and personal tasks.	C	SGD	MCQs
		Explain the 7Cs of communication.	C	Discussion	MCQs
		Demonstrate responsibility in small, assigned	C	SGD	MCQs

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
		academic or group-based tasks.			
	Evidence-Based Dentistry	Define Evidence-Based Dentistry.	C	Lecture	MCQs
		Explain the significance of EBD in clinical decision-making.	C	Lecture	MCQs
		Identify the components of EBD: best available evidence, clinical expertise, and patient preferences.	C	Lecture	MCQs

		Clini
Subject	**Topic**	**Learning Objective**
Histology	Epithelium	Draw a labelled light microscopic diagra
		Draw a labelled light microscopic diagra
Oral Biology & Tooth Morphology	Structures of the Tooth	Identify structures of the tooth on model
	Cytoskeleton	Draw a labelled diagram of cytoskeletal
	Junctions	Draw labelled diagrams of tight junctions
Pathology	Microscopic Identification	Identify necrosis

Module II Introduction

Module 2, *Craniofacial I*, builds upon the foundational knowledge of basic sciences and introduces students to the structural and developmental basis of the head and neck region, with particular relevance to dentistry. This module integrates anatomy, embryology, histology, and basic physiology to provide a comprehensive understanding of craniofacial structures and their functional relationships.

Students will explore the gross anatomy of the skull, facial bones, and associated structures, along with the early embryological development of the face, oral cavity, and related tissues. Emphasis is placed on the origin, growth, and organization of craniofacial components, enabling students to understand normal development as well as the basis of common developmental anomalies such as cleft lip and palate. Histological aspects of oral tissues, including epithelium and connective tissue, are also introduced to link microscopic structure with function.

The module highlights the clinical relevance of craniofacial anatomy in dental practice, including orientation to important landmarks, neurovascular supply, and functional aspects such as mastication and facial expression. Early integration with clinical scenarios helps students appreciate how anatomical knowledge supports diagnosis and treatment planning in dentistry.

In addition to scientific understanding, the module continues to strengthen students' skills in teamwork, communication, and self-directed learning through active teaching–learning strategies. By the end of this module, students are expected to develop a clear conceptual framework of craniofacial structure and development, forming a critical base for subsequent modules in oral biology, pathology, and clinical dentistry.

Subject	**Key Focus Area**	**Learning Objectives**	**Domain**	**Teaching Strategy**	**Assessment Tool**
Module II: Craniofacial I					
Anatomy	Skull	Describe the gross anatomy of the skull, its features, foramina, and applied aspects	C	Lecture	MCQs

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
		relevant to head and neck anatomy.			
		Describe the features and structures of different views of the skull (Anterior, Posterior, Superior, Inferior, Lateral)	C	SGD	MCQs
		Discuss the sutures and fontanelles of the skull, their age changes, and clinical significance.	C	Tutorial	MCQs
	Mandible	Describe the bony features of the mandible.	C	Lecture	MCQs
	Cranial Nerves	List the names of the cranial nerves.	C	SGD	MCQs
Embryology	Neurulation and Early Organogenesis	Describe neurulation, formation of the neural tube, and migration of neural crest cells.	C	Lecture	MCQs
		List derivatives of neural crest cells.	C	Lecture	MCQs
		Describe the development of the head and neck region, including contributions of	C	Lecture	MCQs

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
		pharyngeal arches, pouches, and cranial nerves.			
		Explain the development of the skull and meninges (including craniosynostosis correlation), and vasculogenesis (basic).	C	SGD	MCQs
	Advanced Development and Anomalies	Discuss growth and differentiation of the embryonic disc, trophoblast development, and anomalies (situs inversus, sirenomelia, holoprosencephaly).	C	SGD	MCQs
		Describe the embryological basis of hydatidiform mole and its pathological significance.	C	Lecture	MCQs
		Describe common chromosomal anomalies related to early embryonic development.	C	SGD	MCQs/Viva

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
Histology	Cartilages	Describe the microscopic and ultramicroscopic structure of all types of cartilages.	C	Lecture	MCQs/Viva
		Draw a labelled light microscopic diagram of different types of cartilages.	C	Tutorial	MCQs/Viva
	Bones	List the bone cells and their origin, along with their functions	C	Lecture	MCQs
		Describe the composition of bone matrix (organic, inorganic)	C	SGD	MCQs/Viva
		Describe the histology of compact and spongy bone	C	Tutorial	MCQs/Viva
	Muscles	Describe the microscopic structure and ultramicroscopic structures of skeletal, cardiac, and smooth muscles.	C	Lecture	MCQs/Viva
	Skin	Describe the layers and microscopic structure of the	C	Lecture	MCQs/Viva

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
		epidermis and dermis of the skin.			
Biochemistry	Overview of Metabolism	Differentiate between anabolism and catabolism	C	Lecture	MCQs
		List the metabolic pathways associated with each process.	C	Lecture	MCQs
	Carbohydrate Metabolism	Explain metabolism: glycolysis and TCA cycle (steps, regulation, energetics).	C	Lecture	MCQs
		Differentiate aerobic and anaerobic glycolysis.	C	Lecture	MCQs
		Describe the transport systems for glucose entry into cells, including sodium- and ATP-independent (GLUTs) and sodium- and ATP-dependent cotransport.	C	SGD	MCQs
	Amino Acids: Structure,	Define amino acids	C	Lecture	MCQs

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
	Classification, and Properties				
		Classify standard amino acids according to side chain and nutritional importance.	C	Lecture	MCQs
	Structure and Function	Explain the levels of protein organization (primary, secondary, tertiary, and quaternary structures) and their relevance to protein function.	C	Lecture	MCQs
		Define conjugated proteins with suitable examples of conjugated proteins in the human body (lipoproteins, glycoproteins, nucleoproteins, chromoproteins, and metalloproteins).	C	Lecture	MCQs
		Elaborate on the role of chaperones in protein folding.	C	SGD	MCQs

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
		Differentiate between denaturation and coagulation.	C	Lecture	MCQs
		Define limiting amino acids with suitable examples of limiting amino acids.	C	Lecture	MCQs
		Explain the nutritional importance of proteins in correlation to this, to protein energy malnutrition.	C	Lecture	MCQs
		Compare the salient features of kwashiorkor and marasmus.	C	Lecture	MCQs
	Enzymes: Structure, Classification, Mechanism, and Regulation	Explain enzyme structure, classification with examples, properties, mechanisms of action, kinetics, regulation, and inhibitors.	C	SGD	MCQs/Viva
		Explain diagnostic and therapeutic roles of enzymes	C	SGD	MCQs/Viva

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
		(ALT, AST, CK-MB, ALP, LDH).			
	Vitamins	Describe vitamins (B1, B2, B3, B5, B7), their active forms, sources, RDA, biochemical roles, and deficiency manifestations.	C	Lecture	MCQs/Viva
Oral Biology & Tooth Morphology	Early Tooth Development	Describe the primary epithelial band	C	Lecture	MCQs/Viva
		Explain its role in the initiation of tooth development.	C	Lecture	MCQs/Viva
		Explain the mechanisms involved in the initiation of tooth	C	SGD	MCQs
		Describe the process of regionalization of the oral epithelium and its significance in tooth development.	C	Lecture	MCQs
		Explain the instructive signals for patterning and odontogenic potential	C	Lecture	MCQs

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
	Tooth Development	Explain the hard tissue formation through histodifferentiation	C	Lecture	MCQs
		Explain nerve and vascular contributions to tooth development during early developmental stages.	C	Lecture	MCQs/Viva
		Describe root development, Hertwig's epithelial root sheath, and supporting tissues.	C	Lecture	MCQs
	Formation of the Face, Palate, and Tongue	Describe the embryonic development of the face, palate & tongue	C	Lecture	MCQs/Viva
		Explain contributions of key structures (lateral lingual swellings, tuberculum impar, and copula), muscle derivation, and sensory/motor innervation.	C	Virtual Demonstration	MCQs
		Discuss Developmental Defects associated	C	SGD	MCQs/ Viva

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
		with it, like Ankyloglossia.			
	Development of the Mandible & Maxilla	Describe the role of Meckel's cartilage in mandibular development and the process of intramembranous ossification in forming the mandible and maxilla.	C	SGD	MCQs/Viva
		Define jaw size anomalies and their embryological basis and clinical impact (Micrognathia and Macrognathia).	C	SGD	MCQs/Viva
	Craniofacial anomalies	Describe basic developmental anomalies relevant to the craniofacial region (e.g., cleft palate, anomalies of tooth number and size).	C	Lecture	MCQs/Viva
Pathology	Genetic Disorders: Introduction and Causes	Define genetic disorders and their causes.	C	Lecture	MCQs
	Types of Mutations	Describe types of mutations (point,	C	Lecture	MCQs/Viva

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
		insertions, deletions).			
	Mendel's principles and genetic disorders	Explain Mendelian principles applied to autosomal and X-linked disorders	C	Lecture	MCQs/Viva
	Genetic testing	Describe genetic testing methods: PCR, sequencing, karyotyping, biochemical tests, prenatal screening.	C	Lecture	MCQs
Oral Pathology	Chromosomal abnormalities	Discuss the clinical presentation of numerical and structural chromosomal abnormalities.	C	Lecture	MCQs

Clinical Practicum					
Subject	**Topic**	**Learning Objective**	**Domain**	**Teaching Strategy**	**Assessment Tool**
Gross Anatomy	Surface Anatomy	Identify major arteries, veins, and nerves on anatomical models or cadaveric dissection.	C	Demonstration on Models	OSCE

		Locate course, branches, and anatomical relations of major arteries, veins, and nerves on anatomical models.	C	Demonstration on Models	OSCE
		Correlate their clinical significance with surrounding structures	C	Demonstration on Models	OSCE
	Jaw Muscles	Demonstrate the origin, insertion, nerve supply, and actions of the muscles of facial expression on models or cadaveric specimens.	C	Demonstration on Models	OSCE
	Neurovascular Supply of face	Demonstrate surface marking of extracranial branches of the facial nerve and trigeminal nerve in relation to relevant structures.	P	Demonstration on Models	OSCE
		Identify the anatomical pathways and clinical relevance of facial &	C	Demonstration on Models	OSCE

		trigeminal nerves.			
Oral Biology & Tooth Morphology	Bone	Draw a labelled diagram of osteoblasts, osteocytes, and osteoclasts.	C	Tutorial	OSCE
		Draw labelled stages/histological features of intramembranous and endochondral ossification.	C	Tutorial	OSCE

Module III Introduction

Module 3, *Cariology I*, introduces students to the fundamental concepts of dental caries as a dynamic, multifactorial disease process. Building on prior knowledge of cellular, molecular, and craniofacial foundations, this module integrates microbiology, biochemistry, and oral biology to help students understand the etiology, pathogenesis, and early progression of dental caries.

Students will explore the role of oral microorganisms, particularly the formation and composition of dental plaque (biofilm), and how dietary factors—especially fermentable carbohydrates—interact with host factors to initiate demineralization of tooth structure. The module emphasizes the balance between demineralization and remineralization, highlighting the protective role of saliva, fluoride, and preventive strategies in maintaining oral health.

Basic concepts of enamel and dentin structure are revisited in the context of caries development, enabling students to correlate microscopic changes with early clinical manifestations. Preventive dentistry is a key focus, introducing principles of oral hygiene, dietary counseling, fluoride use, and community-level interventions.

The module also incorporates early clinical orientation through simple case discussions, allowing students to apply foundational knowledge to real-life scenarios. Active learning strategies such as small group discussions, case-based learning, and self-directed study are used to enhance understanding and critical thinking.

By the end of *Cariology I*, students are expected to understand the biological basis of dental caries, recognize its risk factors, and appreciate the importance of prevention and early intervention—laying the groundwork for more advanced clinical management in subsequent years.

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
Module III: Cariology					
Biochemistry	Biochemical Role of Carbohydrates in Dental Caries	Explain the cariogenic potential of carbohydrates.	C	Lecture	MCQs
	Fluoride's Biochemical Mechanism	Explain the biochemical mechanism of fluoride in disrupting bacterial glycolysis and acid production.	C	Lecture	MCQs/Viva
Oral Biology & Tooth Morphology	Enamel	Describe the physical and chemical properties of enamel	C	Lecture	MCQs
		Explain their role in caries resistance and susceptibility.	C	Lecture	MCQs
		Describe the structural organization of enamel.	C	Lecture	MCQs
		Identify enamel on radiographs.	C	SGD	MCQs/Viva

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
		Explain the differentiation and life cycle of ameloblasts	C	SGD	MCQs/Viva
		Describe amelogenesis stages (pre-secretory, secretory, maturation), Tom's process, and pH regulation	C	SGD	MCQs
		Describe enamel proteins with an explanation of incremental lines, Hunter-Schreger bands, tufts, lamellae, spindles, and gnarled enamel.	C	Lecture	MCQs
		Explain fluoride effects, enamel etching, age changes, and repair	C	Lecture	MCQs
	Tooth Morphology	Describe the anatomical surfaces and landmarks of both anterior and posterior teeth, including the roots, using standardized dental terminology.	C	Lecture	MCQs
		Identify tooth surfaces and thirds of tooth surfaces from	C	Lecture	MCQs

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
		diagrams or descriptions.			
		Differentiate between the crown surfaces of teeth by matching them with their correct general shape (triangular, trapezoidal, or rhomboidal), or by relating the shape to the specific function of the tooth.	C	Lecture	MCQs
		Identify line and point angles, embrasures, and curves based on diagrams or descriptions.	C	Lecture	MCQs/Viva
		Define elevations and depressions on the tooth surface.	C	Lecture	MCQs/Viva
‘		Describe lobes, contact points, embrasures, cervical line, pits, and fissures, and relate to caries susceptibility.	C	SGD	MCQs/Viva
		Describe the components, boundaries, and functions of interproximal space and embrasures.	C	Lecture	MCQs

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
	Enamel Developmental Anomalies	Describe the etiology and pathogenesis of enamel hypoplasia.	C	Lecture	MCQs/Viva
		Explain Amelogenesis imperfecta (types, clinical and radiological features).	C	SGD	MCQs
	Microbiology and Pathogenesis of Caries	Describe the etiology and pathogenesis of dental caries.	C	Lecture	MCQs
		Define plaque and the stages of plaque development	C	Lecture	MCQs
		Describe the changes that develop in the enamel of erupted teeth in association with microorganisms.	C	Lecture	MCQs
		Describe histopathological changes in enamel during dental caries, with emphasis on microbial invasion.	C	Lecture	MCQs/Viva
Operative Dentistry	Pits & Fissure Carries	Describe the anatomy of pits and fissures	C	Lecture	MCQs/Viva
		Explain their role in caries susceptibility.	C	Lecture	MCQs/Viva
		Outline preventive strategies such as	C	Lecture	MCQs

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
		sealant application and fluoride use.			
	Smooth Surface Caries	Describe etiology, risk factors, and clinical features of smooth surface caries.	C	SGD	MCQs
		Explain the role of fluoride in prevention.	C	Lecture	MCQs
	Root Caries	Describe etiology, clinical features, and progression of root caries.	C	Lecture	MCQs
	Active & Arrested Caries	Differentiate active caries based on clinical features	C	Lecture	MCQs/Viva
		Explain clinical significance	C	Lecture	MCQs
		Outline management strategies	C	Lecture	MCQs
		Identify the factors that promote caries arrest.	C	Lecture	MCQs
		Differentiate arrested caries	C	Lecture	MCQs/Viva
		Describe biological processes and contributing factors.	C	Lecture	MCQs/Viva
Community & Preventive Dentistry	Diet and Dental Caries	Explain the role of diet in dental caries, including the Stephen	C	Lecture	MCQs/Viva

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
		curve, cariogenic potential of sugars, and dietary modification strategies.			
	Dental Biofilm and Caries Prevention	Describe the role of dental biofilm in demineralization and remineralization.	C	Lecture	MCQs
		Explain oral hygiene measures and Keyes' triad in caries prevention.	C	Lecture	MCQs
	Principles of Caries Prevention	Explain the principles of dental caries prevention in individual and community settings.	C	SGD	MCQs/Viva
		Apply the principles of dental caries prevention in individual and community settings.	C	Lecture	MCQs
	Fluoride and Community-Based Caries Prevention	Explain the role of systemic and topical fluoride in the prevention of dental caries.	C	Lecture	MCQs/Viva
		Apply knowledge of community-based preventive measures (e.g., water	C	Lecture	MCQs/Viva

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
		fluoridation, school programs).			
	Oral Hygiene Practices and Caries Prevention	Describe correct toothbrushing and flossing techniques in relation to caries prevention.	C	Lecture	MCQs/Viva
Psychiatry & Behavioral Sciences	Introduction to Behavioral Sciences	Explain the bio-psycho-social model and its relevance to holistic dental care.	C	Lecture	MCQs
	Determinants of Oral Health Behavior	Describe how psychology, sociology, and anthropology contribute to understanding oral health behavior.	C	Lecture	MCQs/Viva
	Understanding Human Behavior	Differentiate between normal and abnormal behavior	C	Lecture	MCQs
	Emotional and Behavioral Factors in Dentistry	Discuss their implications for dental care.	C	Lecture	MCQs
		Recognize the influence of emotions and behavior on patient–dentist interactions and oral health outcomes.	C	Lecture	MCQs/Viva

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
	Communication Skills	Demonstrate effective communication and interpersonal skills in clinical and community dental settings.	C	Lecture	MCQs/Viva
	Emotional Intelligence	Apply principles of empathy and emotional intelligence in role play.	C	Lecture	MCQs
	Professional Ethics and Responsibilities	Describe ethical principles, professional roles, and responsibilities of a dentist.	C	Lecture	MCQs/Viva

‘

Clinical Practicum					
Subject	**Topic**	**Learning Objective**	**Domain**	**Teaching Strategy**	**Assessment Tool**
Oral Biology & Tooth Morphology	Tooth Morphology and Structural Features	Identify major morphological features of teeth — including the lobes, contact areas, embrasures, height of contour, and the cervical and gingival lines — using models and anatomical specimens.	C	Demonstration	OSCE

		Locate pits, fissures, and different types of embrasures on teeth through Features inspection of specimens/typodont models/clinical images.	C	Demonstration	OSCE
	Enamel	Draw a labelled lifecycle of ameloblast	C	Tutorial	OSCE
		Draw a labelled Secretory stage ameloblast.	C	Tutorial	OSCE
		Draw a labelled Maturation stage ameloblast.	C	Tutorial	OSCE
		Draw labelled histological/organizational features of the enamel (enamel rods, striae of Retzius, Hunter-Schreger bands, gnarled enamel, DEJ, enamel tufts, lamellae, spindles, & neonatal lines)	C	Demonstration	OSCE
Oral Pathology	Microscopic Analysis of Plaque	Observe prepared slides of plaque samples.	C	Hands-on	OSCE
	Radiographic Identification of Tooth Structures and	Identify amelogenesis imperfecta and fluorosis on e-slides	C	Demonstration	OSCE

	Developmental Anomalies				
Operative Dentistry	Prevention of Dental Caries	Identify fluoride gel	C	Demonstration	OSCE
		Demonstrate the application procedure.	P	Hands-on	OSCE
		Identify pits, fissures, smooth surfaces, and root caries on models or images.	C	Demonstration	OSCE
		Differentiate active versus arrested caries on prepared slides or images	C	Virtual Demonstration	OSCE

ISLAMIYAT / ETHICS / PAKISTAN STUDIES

Subject	**Key Focus Area**	**Learning Objectives**	**Domain**	**Teaching Strategy**	**Assessment Tool**
Islamiyat: Faith	Tawheed	Describe the Unity of Allah in being	C	Lecture	MCQs
		Describe the Unity of Allah in attributes.	C	SGD	MCQs
		Describe the concept of Shirk.	C	Lecture	MCQs

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
		Discuss the impact of Tawheed on human life	C	Reflection	MCQs
	Prophethood	Explain the Significance of Risalat	C	Lecture	MCQs
		Identify Prophets as role models.	C	Lecture	MCQs
		Recognize the finality of Prophethood - Prophet Muhammad (PBUH)	C	Lecture	MCQs
	Belief in the Hereafter	Appraise continuity of life beyond the material world	C	Lecture	MCQs
		Discuss the following concept: • Concept of Doomsday and its various stages • Concept of Day of Judgment and accountability in the Hereafter	C	SGD	MCQs

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
		• Concept of " Meezan."			
	Devine Revelations	Explain the divine decree in sending the Holy Books	C	SGD	MCQs
		Identify the Holy Quran as the only preserved & authenticated divine revelation to date.	C	Lecture	MCQs
		Interpret the Quran as Furqan	C	Lecture	MCQs
	Angels	Discuss belief in angels and their significance	C	Lecture	MCQs
		Describe the universal role of angels (their specific duties)	C	Lecture	MCQs
	Qadr	Identify Taqdeer as Knowledge of Allah	C	Lecture	MCQs
		Explain the concept of Faith in Good and Evil	C	Lecture	MCQs
Islamiyat: Worship	Prayer	Recognize the importance of	C	Lecture	MCQs

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
		physical purity (Taharah)			
		Discuss the philosophy of prayer and its role in the purification of the soul.	C	Lecture	MCQs
		Recognize the importance of prayer in building personal character - sense of duty, patience, perseverance, punctuality, and self/social discipline.	C	Lecture	MCQs
		Identify the conditions in which relaxation in prayer is allowed, e.g., during operation, travelling, etc.	C	Lecture	MCQs
	Zakat	Identify the obligatory importance of Zakat and other items as outlined under the title of 'Infaq-feesabilillah.'	C	Lecture	MCQs
		Categorize the people who can be	C	Lecture	MCQs

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
		the beneficiaries of Zakat			
		Discuss the following: • Role of zakat in the eradication of greed and love of the material world • Effect of Zakat and sadaqat in the circulation of wealth and alleviation of poverty	C	SGD	MCQs
		Explain the essence of zakat and sadaqat in building just communities	C	Lecture	MCQs
		Describe the role of the state in the collection and disbursement of zakat.	C	Lecture	MCQs
	Fasting	Discuss the importance and significance of fasting	C	Lecture	MCQs
		Relate the Holy Quran and the month of Ramadan	C	Lecture	MCQs

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
		Discuss the role of fasting in building personal qualities like self-control, piety, and a soft corner for the poor and needy.	C	Lecture	MCQs
		Identify the applications of " Taqwa" through fasting	C	Lecture	MCQs
	Pilgrimage	Discuss the importance and significance of Hajj	C	Lecture	MCQs
		Identify the conditions in which Hajj becomes an obligation	C	Lecture	MCQs
		Discuss the role of manasik-e-hajj in producing discipline and complete submission.	C	SGD	MCQs
		Recognize the importance of Hajj in uniting the ummah	C	Lecture	MCQs
		Explain the concept of Sacrifice for Allah subhan wa taala	C	Lecture	MCQs

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
Islamiyat: Specific Quranic Commandments	Importance of the protection of Human life	Explain the following concepts: i. Concept of the sanctity of human life in the Quran and Sunnah ii. Importance and significance of a single human being even during war iii. Concept of punishment in regard to the killing of a human being, voluntarily or involuntarily	C	Lecture	MCQs
	Jihad	Discuss the following: i. Concept of Jihad and its significance (hikmat) ii. Different forms of Jihad and their importance iii. Principles and preparation of Jihad iv. Divine reward of Jihad	C	Lecture	MCQs
	Heirship/Inheritence (Virasat)	Discuss the following:	C	SGD	MCQs

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
		i. Heirship and division of wealth in accordance with divine teachings ii. Heirs and their shares iii. Legal aspect of Virasat (Hud-e-Illahi)			
	Amar-bil-maroof-wa-Nahi-anil-munkar	i. Explain the following concepts: ii. Differentiation between Maroof and Munkar iii. Importance and significance (effects of avoiding this principle) iv. Necessary conditions of both amar-bil-maroof and nahi-anil-munka v. The different	C	SGD	MCQs

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
		stages and the necessary prerequisites			
	Hadood-e Illahee and taazeerat	Discuss the following: i. Meaning and various types of hadood-e-Illahee ii. Authority for fixation of limit (hudd) iii. Criteria and permissible relaxation in fixing the limits iv. Difference between ‘ Hadood’, ‘ Qisas’, and ‘Tazeerat’. Punishments which are left to the court of law	C	SGD	MCQs

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
		v. Benefits for the good of the community			
	Justice (Adal-o-insaf)	Discuss the following: i. Justice of Allah subhan wa taala ii. Importance of justice for the survival of community iii. Need for justice to prevail irrespective of religion iv. Divine reward for fair justice	C	SGD	MCQs
	Business (Bay-o-tijarat)	Discuss the following: i. Importance of fair business and its necessary constituents ii. Permissible and impermissible conditions of businesses iii. Concept of loan in businesses	C	SGD	MCQs
	Interest (Riba or Sudi karobar)	Discuss the following:	C	SGD	MCQs

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
		i. Meaning of Riba or interest and its different forms ii. Impact of Riba on a society in general iii. Divine declaration and its punishment both in this world and the Hereafter			
	Nikah-o-talaq	Discuss the following: i. Basic rulings regarding marriage and divorce ii. Importance of Nikah and its constituents iii. Conditions of Nikah and various forms of prohibited/impermissible nikah iv. Misconception of dowry v. Talaq and its various forms vi. Meaning of Khula and its conditions	C	SGD	MCQs
Islamic Studies &	Islamiyat	Discuss the basic principles of Islam.	C	Lecture	MCQs

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
Pakistan Studies					
		Explain the concept of the Islamic state.	C	Lecture	MCQs
		Explain the Quran as a guide for modern society and scientific development.	C	Lecture	MCQs
		Describe the life of the Holy Prophet, Peace be upon him, as an example to follow.	C	Lecture	MCQs
		Explain ethics from an Islamic perspective.	C	SGD	MCQs
		Describe the rights of the individual in Islam.	C	Lecture	MCQs
		Describe the rights of women and children in Islam.	C	Lecture	MCQs
		Explain the contribution of Islamic scholars to science and medicine.	C	Lecture	MCQs
		Discuss Islam in terms of modern	C	Lecture	MCQs

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
		scientific development			
		Explain the concept of Rizk-e-Hilal.	C	Lecture	MCQs
		Explain the concept of Hukook-ul-Ibad.	C	Lecture	MCQs
Pakistan Studies		Describe the salient features of the Pakistan movement.	C	Lecture	MCQs
		Explain the basis for the creation of Pakistan.	C	Lecture	MCQs
		Discuss a brief account of the history of Pakistan.	C	Lecture	MCQs
		Explain the ethnic and cultural distribution of the population of Pakistan.	C	Lecture	MCQs
		Describe the Provinces and resources available in Pakistan.	C	Lecture	MCQs
		Explain the current problems faced by Pakistan.	C	Lecture	MCQs

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
		Describe the social, economic, and health problems of the rural population of Pakistan.	C	Lecture	MCQs
Civics	Civics-Meaning & Nature	Define civics	C	Lecture	MCQs
		Describe the importance of civics in improving citizenship	C	Lecture	MCQs
		Illustrate the scope of civics.	C	SGD	MCQs
	Significance and Utility	Examine the significance of civics	C	Lecture	MCQs
		Explain how civics is important to know the problems of daily life	C	Lecture	MCQs
		Evaluate how civics can improve the sense of love and respect for human relationships.	C	Lecture	MCQs
		Discuss that studying civics can develop a sense of gratitude	C	Lecture	MCQs
		Compare civics with political science,	C	Lecture	MCQs

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
		history, economics, sociology, and ethics.			
	Harmonic Relationship	Describe the term harmonic relationship	C	Lecture	MCQs
		Explain the harmonic relationship among different members of society. (Women, children, and senior citizens)	C	Lecture	MCQs
	Individual and state	Define the term state	C	Lecture	MCQs
		Explain the relation between an individual and a state	C	Lecture	MCQs
		Describe the importance of an individual in a state	C	Lecture	MCQs
		List the responsibilities of an individual in a state	C	Lecture	MCQs
	Family	Identify the basic unit of social institution. Discuss and characterize the different types of family.	C	Lecture	MCQs
		Explain the importance of the	C	Lecture	MCQs

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
		basic unit of social institutions in the development of a state.			
		List the responsibilities of the family in general	C	SGD	MCQs
		Analyze your role for the betterment of the family	C	Lecture	MCQs
	Community	Define community	C	Lecture	MCQs
		Explain the nature and significance of community	C	Lecture	MCQs
		Discuss the role of a family in the community	C	Lecture	MCQs
		Analyze the role of an individual for the betterment of the community	C	Lecture	MCQs
	Society	Define society	C	Lecture	MCQs
		Elaborate on the relation between an individual and society, and society and state.	C	Lecture	MCQs

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
		Analyze the role of an individual for the betterment of society	C	Lecture	MCQs
	Nation, Nationality	Define the terms nation, nationality, ummah, and nationality	C	Lecture	MCQs
		Distinguish between nation and ummah, analyze the value, behavior and the pattern of society based on religions.	C	Lecture	MCQs
		Evaluate the characteristics of society developed by religions	C	Lecture	MCQs
	Origin and elements of the State	Trace the origin of the state with reference to the theories of Divine Origin, Force, and Social Contract (Hobbes, Locke, Rousseau)	C	Lecture	MCQs
		Describe the elements of a state (sovereignty, population, territory, Government)	C	Lecture	MCQs

Subject	Key Focus Area	Learning Objectives	Domain	Teaching Strategy	Assessment Tool
		Compare the role of state, society, and government	C	Lecture	MCQs
	Functions of state. (Defense, law and order, welfare etc.)	Describe the functions of the state	C	Lecture	MCQs
		Describe the factors that are necessary for the proper functioning of the state.	C	Lecture	MCQs
		Analyze the situation when a state does not function properly	C	Lecture	MCQs
		Analyze how a welfare state guarantees equity and justice in the issues of gender, religion, and social classes.	C	Lecture	MCQs
	Sovereignty	Define the concept of sovereignty in the West	C	Lecture	MCQs
		Discuss different kinds of sovereignty.	C	Lecture	MCQs
		Analyze Austin’s concept of sovereignty critically.	C	Lecture	MCQs

Assessment Framework (Years 1 & 2)

Assessment in BDS Years 1 and 2 is conducted within an **integrated, competency-based framework** that supports horizontal and vertical integration across modules. A **programmatic approach** is adopted, combining continuous formative assessment with structured summative evaluations to ensure progressive development of knowledge, psychomotor skills, and professional attitudes.

Formative assessments are conducted throughout modules to provide feedback and guide learning, while summative assessments are used for certification and progression. All assessments are **blueprinted against learning objectives**, ensuring alignment with curricular outcomes and UHS guidelines.

Summative Assessment Tools

Summative assessment is conducted at the end of modules, blocks, and professional examinations using the following standardized tools:

- **MCQs (One Best Answer):**
  Designed to assess integrated knowledge, understanding, and application through clinically oriented scenarios.
- **Viva Voce (Structured Oral Examination):**
  Used to evaluate depth of understanding, reasoning ability, and communication skills in a structured and objective manner.
- **OSPE/OSCE (Objective Structured Practical/Clinical Examination):**
  Station-based assessment to evaluate practical skills, procedural competencies, identification tasks, and early clinical reasoning.

These tools ensure a **balanced evaluation across cognitive and psychomotor domains**, in line with integrated curriculum requirements.

Quality Assurance & Standardization

To maintain the reliability and validity of the assessment:

- All examinations are **blueprinted and moderated**
- Standard setting methods (e.g., Angoff, borderline regression) are applied where appropriate

- Structured checklists and rating scales are used in OSPE/OSCE and viva
- Regular **item analysis and post-exam review** are conducted
- Feedback is provided to support continuous improvement

Drafted by:

1.Dr. Zubia Waqar

Assistant Professor, Department of Dental Education

2. Dr. Ghazala Naveed

Demonstrator, Department of Dental Education