

BDS INTEGRATED CURRICULUM
2k25

2nd Year BDS
(Session 25-26)

Block-5

Module 15	Module 16	Module 17	Module 18
Endocrinology	Occlusion -II	Community Dentistry & Public Health-II	Dental Materials & Pre- Clinical Dentistry-II

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MISSION AND VISION OF UHS

Vision Statement:

UHS is a leading university aiming to keep its graduates apt with the ever-emerging global health challenges, evolving educational methodologies and emerging technological advancements to maintain its distinguishable position as a medical university.

Mission Statement:

UHS shall continue to strive for producing a human resource par at excellence to cater for the health needs of the people of Punjab and Pakistan.

MISSION AND VISION OF MMDC

(Dental Section) MMDC Vision

To be a leading dental institution in South Punjab, recognized for excellence in education, research, and healthcare services, while developing competent and compassionate healthcare professionals and addressing health disparities through research and community-focused initiatives.

(Dental Section) MMDC Mission

To produce professionally competent and ethical dental graduates equipped with knowledge, clinical skills and technological competence to address emerging global health challenges through research, innovative educational approaches and lifelong learning.

PROGRAM OUTCOME

The students of Bachelor of Dental Surgery (BDS) of MMDC at the end of the program will be able to:

- Dental Graduates will apply the knowledge, skills and technological competencies to practice dentistry in primary care setting and provide comprehensive patient care.
- The graduates will promote dental health care within the community, utilizing the latest research, critical thinking and making evidence informed decisions and apply relevant evidence to address emerging oral and global health challenges.
- Dental graduates will uphold professional values and demonstrate emotional intelligence, social responsibility, and engage in lifelong learning, leadership, and innovation.

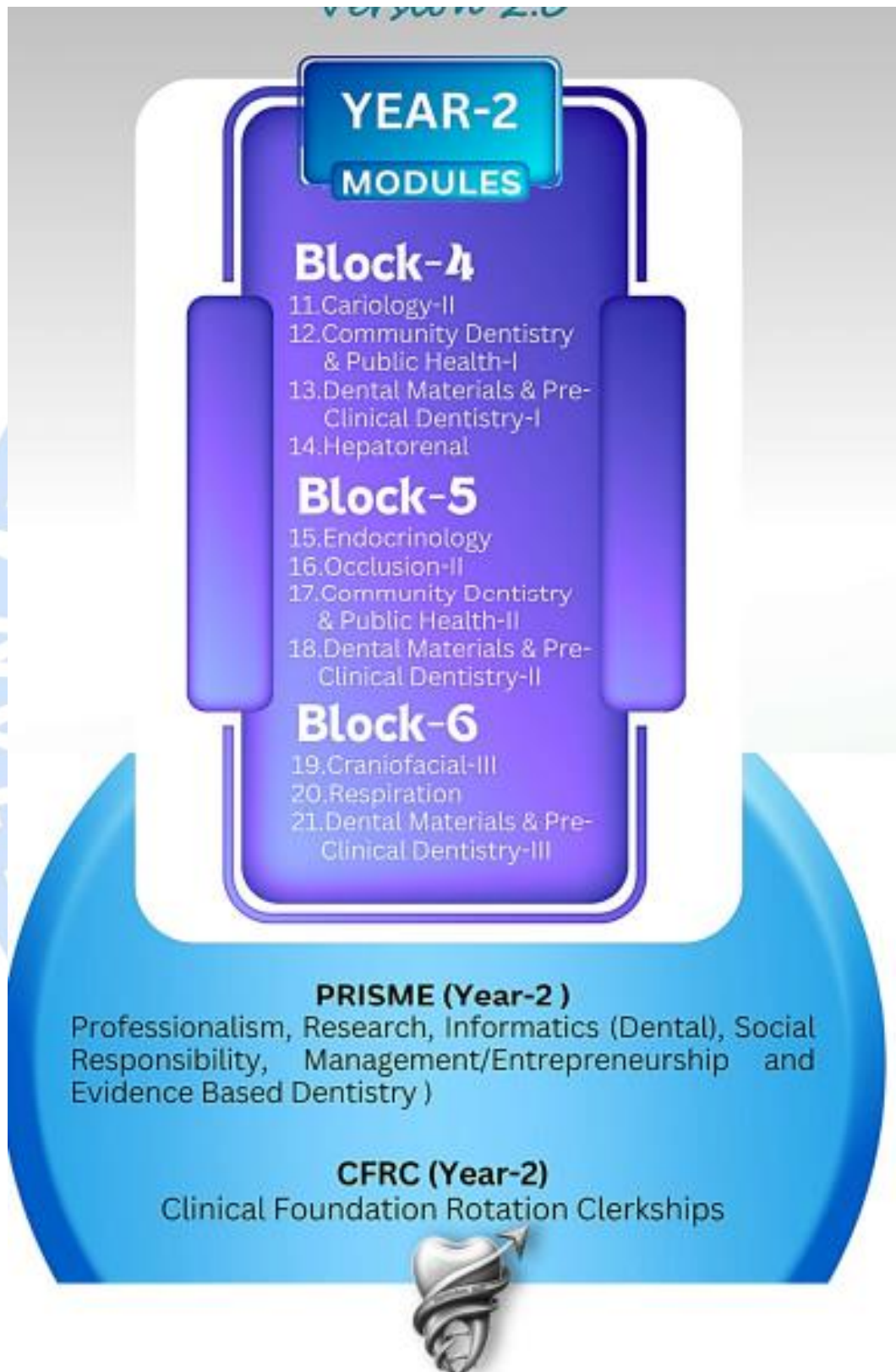
LIST OF ABBREVIATION

***Mode of information Transfer (MIT)
Assessment Tool (AT)**

Abbreviations	Subjects
UHS	University of Health Sciences
BDS	Bachelor of Dental Surgery
PRISME	Professionalism, Research, Informatics, Social Responsibility and Accountability, Management & Entrepreneurship, Ethics & Evidence Based Dentistry
WHO	World Health Organization
DME	Department of Medical Education
DDE	Department of Dental Education
HPE	Health Professions Education
CFRC	Clinical Foundation Rotation Clerkship
ICDAS	International Caries Detection and Assessment System
A	Anatomy
AI	Artificial Intelligence
B	Biochemistry
Enr	Endocrinology
HR	Hepatorenal
GDC	General Dental Council
Ph	Pharmacology & Therapeutics
P	Physiology
Pa	General Pathology & Microbiology
PD	Prosthodontics
OB	Oral Biology
OP	Oral Pathology
CD	Community & Preventive Dentistry
OD	Operative Dentistry
OM Oral Medicine AMIA American Medical Informatics Association AMEE	Association for Medical Education in Europe

BhS	Behavioral Sciences
CNS	Central Nervous System
GIT	Gastrointestinal Tract
CVS	Cardiovascular System
TMJ	Temporomandibular Joint
DR	Dental Radiology
DM	Dental Materials
CBC	Complete Blood Count
ESR	Erythrocyte Sedimentation Rate
PCR	Polymerase Chain Reaction
ED50	Median Effective Dose
LD50	Median Lethal Dose
TD50	Median Toxic Dose
ID50	Median Infectious Dose
AUC	Area Under Curve
MCV	Mean Corpuscular Volume
MCH	Mean Corpuscular Hemoglobin
MCHC	Mean Corpuscular Hemoglobin Concentration
NS	Neurosciences
DNA	Deoxyribonucleic Acid
TORCH	Toxoplasmosis, Other, Rubella, Cytomegalovirus, Herpes Simplex
CF	Craniofacial
Car	Cariology
DEJ	Dentin Enamel Junction
HERS	Hertwig's Epithelial Root Sheath
FDI	Fédération Dentaire Internationale
GAGs	Glycosaminoglycans
EFA	Essential Fatty Acids
Hb	Hemoglobin
HbA1c	Glycated Hemoglobin
ATP	Adenosine Triphosphate
RBC	Red Blood Cell
NMJ	Neuromuscular Junction

ALT	Alanine Aminotransferase
AST	Aspartate Aminotransferase
ALP	Alkaline Phosphatase
INR	International Normalized Ratio
GFR	Glomerular Filtration Rate
eGFR	Estimated Glomerular Filtration Rate
HBV	Hepatitis B Virus
HCV	Hepatitis C Virus
HAV	Hepatitis A Virus
HDV	Hepatitis D Virus
HEV	Hepatitis E Virus
RCTs	Randomized Controlled Trials



INTRODUCTION TO STUDY GUIDE

As you enter the 2nd year of your Bachelor of Dental Surgery (BDS) program, this study guide is designed to help you navigate this crucial stage of your education. It focuses on consolidating your knowledge, clinical skills, and preparing you for your future career in dentistry.

Objectives of BDS 2nd Year:

1. **Integration of Knowledge:** Reinforce and integrate the knowledge gained in previous years across all dental disciplines, including clinical dentistry, oral surgery, periodontology, prosthodontics, orthodontics, and pediatric dentistry.
2. **Clinical Exposure:** Gain foundational understanding of clinical dentistry by observing real patient interactions and procedures. Emphasis is placed on recognizing diagnostic steps, treatment planning, and familiarizing them with clinical protocols.
3. **Professional Development:** Enhance your understanding of the ethical, legal, and professional responsibilities of a dentist. Prepare for the transition from student to practitioner.
4. **Exam Preparation:** Equip yourself with effective study strategies and resources to excel in final examinations and assessments.

ACADEMIC SCHEDULE OF BLOCK-2

Block-5 Start Date	31 st August 2026
Midblock Exam Block-5	28 th September 2026
Block-5 Exam	23 rd –27 th November 2026
Block-5 Ends Date	20 th November 2026



TIME TABLE



DENTAL SECTION, MULTAN MEDICAL & DENTAL COLLEGE, MULTAN

**Time Table For 2nd Year BDS (Session 2025-2026)
BLOCK-5 (Integrated Modular 2k25)**



Dental Section, Multan Medical & Dental College

Timetable for 2nd Year BDS Session 2026

Block-5 (Integrated Modular 2k25) (12 Weeks)

Day	08:30-09:30	09:30-10:20	10:20-11:10	11:10-12:00	12:00-12:50	12:50-1:20	01:20-02:10	02:10-03:00
Monday	Test/ Discussion	Test/ Discussion	Behavioural Sciences Interactive Lecture	Community Dentistry Interactive Lecture	Dental Material Interactive Lecture	Break	Prosthodontics Interactive Lecture	Prosthodontics Interactive Lecture
Tuesday	Dental Material Interactive Lecture	Oral Biology Interactive Lecture	Community Dentistry Interactive Lecture	Biochemistry Lecture 1-4 Week/ Periodontics Lecture 5-8 Week OMFS Lecture 9-12 Week	Physiology Interactive Lecture		Pharmacology Interactive Lecture	PRISME Interactive Lecture
Wednesday	Pharmacology Interactive Lecture	Community Dentistry Interactive Lecture	Oral Biology Interactive Lecture	Dental Material Interactive Lecture	Behavioural Sciences Interactive Lecture		Operative Dentistry Interactive Lecture/Practical	PRISME Interactive Lecture
Thursday	Physiology Interactive Lecture	Dental Material Practical	Dental Material Practical	Community Dentistry Interactive Lecture	Behavioural Sciences Practical		G. Pathology Lecture 1-6 Week/ Orthodontics Lecture/Practical 7-12 Week	PRISME Interactive Lecture
Friday	Test	CFRC Rotation / Students presentation Dental Materials		Dental Material Interactive Lecture	Dental Material Interactive Lecture		Behavioral Science Interactive Lecture	Oral Biology Interactive Lecture

COORDINATORS

BDS-2 Year Coordinator Community Dentistry	Prof. Dr. Aeeza Malik
Dental Education/ Block Coordinator	Dr. Hajra Talat

BLOCK-2 SUBJECT INCHARGES

Operative Dentistry	Prof. Dr. Sharina Naz
Community Dentistry	Prof. Dr. Ejaz Hussain Sahu
Dental Material	Dr. Muhammad Abi Waqas
Oral Biology	Dr. M. Abubakar
Physiology	Prof. Dr. Maria Gill
Biochemistry	Dr. Jamal
Pharmacology	Prof. Dr. Muhammad Ali
Oral Pathology	Prof. Dr. Basil Khalid
Periodontology	Prof. Dr. Nousheen Khan
General Pathology	Dr. Rizwan Akhtar
Behavioral Science	Assoc. Dr. Qurat-ul- Ain
OMFS	Prof. Dr. Noor-ul-Ain
Orthodontics	Assoc. Prof. Dr. Ehsan Haider
CFRC	DDE
PRISME Domain Professionalism, Domain Social Responsibility, Accountability Domain Research Domain Management (Healthcare) Domain Informatics Domain EBD	Behavioral Science Community Dentistry Clinical Prosthodontics Dental Education

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MODULE 15

ENDOCRINOLOGY



MODULE RATIONALE

The Endocrinology module introduces the structure, function, and regulation of major endocrine glands and their hormones, emphasizing their role in growth, metabolism, calcium balance, and stress response. Understanding endocrine physiology and pathology enables dental students to recognize systemic and oral manifestations of hormonal disorders that influence dental health and treatment planning. The module links core principles from physiology, biochemistry, pharmacology, and pathology to clinical dental practice, highlighting conditions such as diabetes mellitus, thyroid disease, and calcium metabolism disorders. It also fosters the ability to interpret laboratory data, understand pharmacological management, and apply safe clinical decision-making for patients with endocrine dysfunction.

Module Outcomes

- Identify major endocrine glands, their hormones, and mechanisms of hormonal regulation.
- Explain the physiological roles of pituitary, thyroid, parathyroid, adrenal, and pancreatic hormones in maintaining metabolic and calcium homeostasis.
- Describe the synthesis, biochemical regulation, and clinical significance of thyroid, parathyroid, insulin, and vitamin D pathways.
- Interpret basic endocrine function tests, including thyroid and calcium-related profiles, in relation to systemic and oral findings.
- Recognize oral and systemic manifestations of common endocrine disorders such as diabetes mellitus, hypothyroidism, hyperthyroidism, and parathyroid dysfunction.
- Explain the pharmacological basis, uses, and precautions of major antidiabetic, antithyroid, and corticosteroid drugs relevant to dental care.
- Correlate endocrine disturbances with dental implications such as altered bone metabolism, salivary gland changes, and healing capacity.
- Demonstrate competency in interpreting endocrine-related case data and laboratory reports to support clinical reasoning and safe dental management.

Subjects Integrated in the Module

- Physiology
- Biochemistry
- Pharmacology & Therapeutics
- General Pathology & Microbiology

THEORY

Physiology				
CODE	SPECIFIC LEARNING OUTCOMES	TOPIC	MIT	AT
EnC-P-001	Enlist the major endocrine glands and their hormones.	Introduction to Endocrinology	LGIS/SGD	MCQS / VIVA
	Classify hormones broadly based on chemical structure (peptide, steroid, amine).		LGIS/SGD	MCQS / VIVA
	Differentiate between surface and intracellular hormone receptors.		LGIS/SGD	MCQS / VIVA
	Explain the basic concept of feedback control in hormone secretion		LGIS/SGD	MCQS / VIVA
EnC-P-002	Describe the basic anatomy of pituitary gland and its relation to hypothalamus.	Pituitary Hormones and Their Control by the Hypothalamus	LGIS/SGD	MCQS / VIVA
	Identify the main hormones of the anterior and posterior pituitary and state their primary functions		LGIS/SGD	MCQS / VIVA
	Outline the effects of growth hormone on growth and metabolism		LGIS/SGD	MCQS / VIVA
	Explain the pathophysiology of growth-related disorders—dwarfism, gigantism, and acromegaly.		LGIS/SGD	MCQS / VIVA
	Describe the main functions of ADH (in water balance) and oxytocin (in labor and lactation).		LGIS/SGD	MCQS / VIVA
EnC-P-003	Outline the basic functions of thyroid hormones	Thyroid Gland	LGIS/SGD	MCQS / VIVA

	Discuss the salient clinical features of major thyroid disorders: hyperthyroidism, hypothyroidism, cretinism, and myxedema		LGIS/SGD	MCQS / VIVA
EnC-P-004	Outline the basic functions of parathyroid hormone, calcitonin, and vitamin D in calcium and bone metabolism.	Calcium Regulating Hormones	LGIS/SGD	MCQS / VIVA
	Describe clinical conditions associated with calcium imbalance: hypoparathyroidism, hyperparathyroidism, rickets, osteomalacia, and osteoporosis.		LGIS/SGD	MCQS / VIVA
EnC-P-005	Name the main adrenal cortical hormones and describe the physiological functions of cortisol, and aldosterone.	Adrenal Glands	LGIS/SGD	MCQS / VIVA
	Discuss the salient features of Cushing's syndrome and Addison's disease.		LGIS/SGD	MCQS / VIVA
EnC-P-006	Describe the main actions of insulin and glucagon on carbohydrate, protein, and fat metabolism	Pancreas	LGIS/SGD	MCQS / VIVA
	Differentiate between Type I and Type II diabetes mellitus based on etiology and pathophysiology.		LGIS/SGD	MCQS / VIVA
	Discuss the general features and complications of diabetes mellitus.		LGIS/SGD	MCQS / VIVA
Biochemistry				
CODE	SPECIFIC LEARNING OUTCOMES	TOPIC	MIT	AT

EnC-B-001	Outline the main steps of thyroid hormone synthesis (iodide uptake, iodination, coupling, storage, release)	Synthesis of Thyroid and Parathyroid Hormones	LGIS/SGD	MCQS / VIVA
	State how parathyroid hormone is synthesized and its role in calcium regulation		LGIS/SGD	MCQS / VIVA
EnC-B-002	Describe, in simple terms, how insulin and glucagon are produced in pancreatic islet cells	Synthesis of Insulin and Glucagon	LGIS/SGD	MCQS / VIVA
	Explain the clinical significance of C-peptide (marker of insulin secretion)		LGIS/SGD	MCQS / VIVA
	Compare key features of Type 1 and Type 2 diabetes mellitus		LGIS/SGD	MCQS / VIVA
	Describe the pathways of beta-oxidation and ketogenesis and explain their metabolic significance.		LGIS/SGD	MCQS / VIVA
EnC-B-003	Describe vitamin D and its active form, sources, RDA, biochemical roles, and deficiency manifestations.	Vitamins	LGIS/SGD	MCQS / VIVA
EnC-B-004	Describe metabolism of calcium	Calcium	LGIS/SGD	MCQS / VIVA

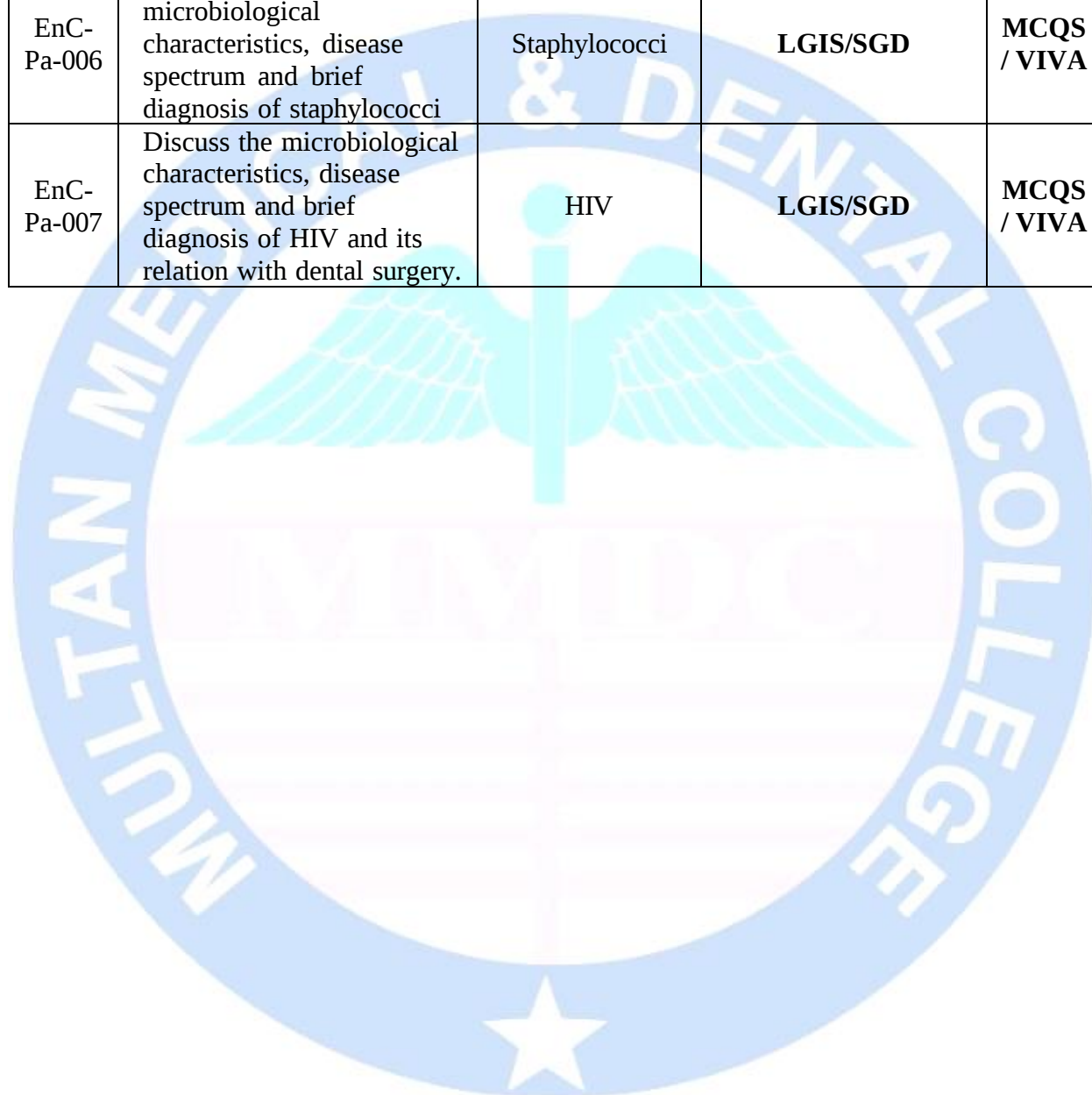
Pharmacology & Therapeutics

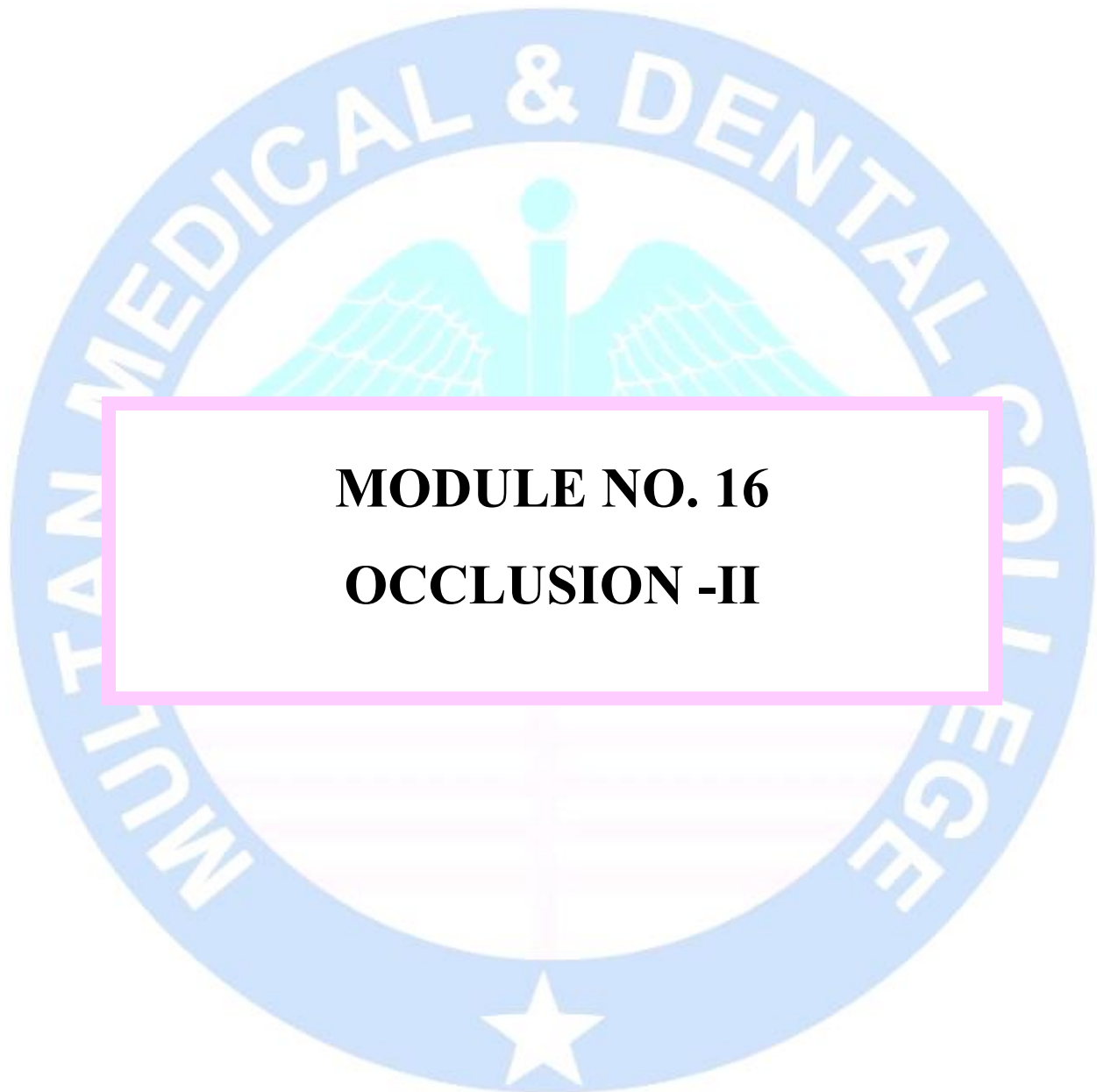
CODE	SPECIFIC LEARNING OUTCOMES	TOPIC	MIT	AT
EnC-Ph-001	State the major effects of insulin on body tissues	Antidiabetic drugs: Insulin	LGIS/SGD	MCQS / VIVA
	Classify types of insulin (short, intermediate, long-acting)		Classify types of insulin (short, intermediate, long-acting)	
	Describe the uses and common side effects of insulin		Describe the uses and common side effects of insulin	
	Recognize newer agents (SGLT2 inhibitors, incretin		Recognize newer agents (SGLT2	

	mimetics, DPP-4 inhibitors) at a basic level		inhibitors, incretin mimetics, DPP-4 inhibitors) at a basic level	
EnC-Ph-002	List the main groups of oral antidiabetic drugs (e.g., sulfonylureas, metformin, thiazolidinediones)	EnC-Ph-002	List the main groups of oral antidiabetic drugs (e.g., sulfonylureas, metformin, thiazolidinediones)	EnC-Ph-002
	Explain in simple terms how these drugs lower blood glucose		Explain in simple terms how these drugs lower blood glucose	
	Identify common side effects and contraindications		Identify common side effects and contraindications	
EnC-Ph-003	Outline the synthesis and functions of thyroid hormones	EnC-Ph-003	Outline the synthesis and functions of thyroid hormones	EnC-Ph-003
	State the drugs used in hypothyroidism		State the drugs used in hypothyroidism	
	Explain the mechanism of action of main antithyroid drugs		Explain the mechanism of action of main antithyroid drugs	
	Recognize the role of iodides and beta blockers in hyperthyroidism		Recognize the role of iodides and beta blockers in hyperthyroidism	
	List common toxicities of antithyroid drugs		List common toxicities of antithyroid drugs	
EnC-Ph-004	Recall the main adrenal steroid hormones (cortisol, aldosterone)	EnC-Ph-004	Recall the main adrenal steroid hormones (cortisol, aldosterone)	EnC-Ph-004
	Recognize some synthetic glucocorticoids		Recognize some synthetic glucocorticoids	
	Differentiate between short-, intermediate-, and long-acting glucocorticoids.		Differentiate between short-, intermediate-, and long-acting glucocorticoids.	

EnC-Ph-005	Describe the main pharmacological effects and therapeutic uses of glucocorticoids.	EnC-Ph-005	Describe the main pharmacological effects and therapeutic uses of glucocorticoids.	EnC-Ph-005
	Outline their major adverse effects and precautions corticosteroids		Outline their major adverse effects and precautions corticosteroids	
	Explain the clinical implications and monitoring considerations in long- term steroid use	Adrenal hormones – II	LGIS/SGD	MCQS / VIVA
	Describe their pharmacokinetics, mechanism of action, pharmacological effects, uses, adverse effects, drug interactions and contraindications of Corticosteroid Antagonists		LGIS/SGD	MCQS / VIVA
General Pathology & Microbiology				
CODE	SPECIFIC LEARNING OUTCOMES	TOPIC	MIT	AT
EnC-Pa-001	Discuss the microbiological characteristics, disease spectrum and brief diagnosis of Prevotella.	Prevotella	LGIS/SGD	MCQS / VIVA
EnC-Pa-002	Discuss the microbiological characteristics, disease spectrum and brief diagnosis of Bacteroides.	Bacteroides	LGIS/SGD	MCQS / VIVA
EnC-Pa-003	Discuss the microbiological characteristics, disease spectrum and brief diagnosis of Lactobacillus	Lactobacillus	LGIS/SGD	MCQS / VIVA
EnC-Pa-004	Discuss the microbiological characteristics, disease spectrum and brief diagnosis of Clostridium perfringens	Clostridium perfringens	LGIS/SGD	MCQS / VIVA

EnC-Pa-005	Discuss the microbiological characteristics, disease spectrum and brief diagnosis of firmicutes	Firmicutes	LGIS/SGD	MCQS / VIVA
EnC-Pa-006	Discuss the microbiological characteristics, disease spectrum and brief diagnosis of staphylococci	Staphylococci	LGIS/SGD	MCQS / VIVA
EnC-Pa-007	Discuss the microbiological characteristics, disease spectrum and brief diagnosis of HIV and its relation with dental surgery.	HIV	LGIS/SGD	MCQS / VIVA





MODULE NO. 16
OCCLUSION -II



MODULE RATIONALE

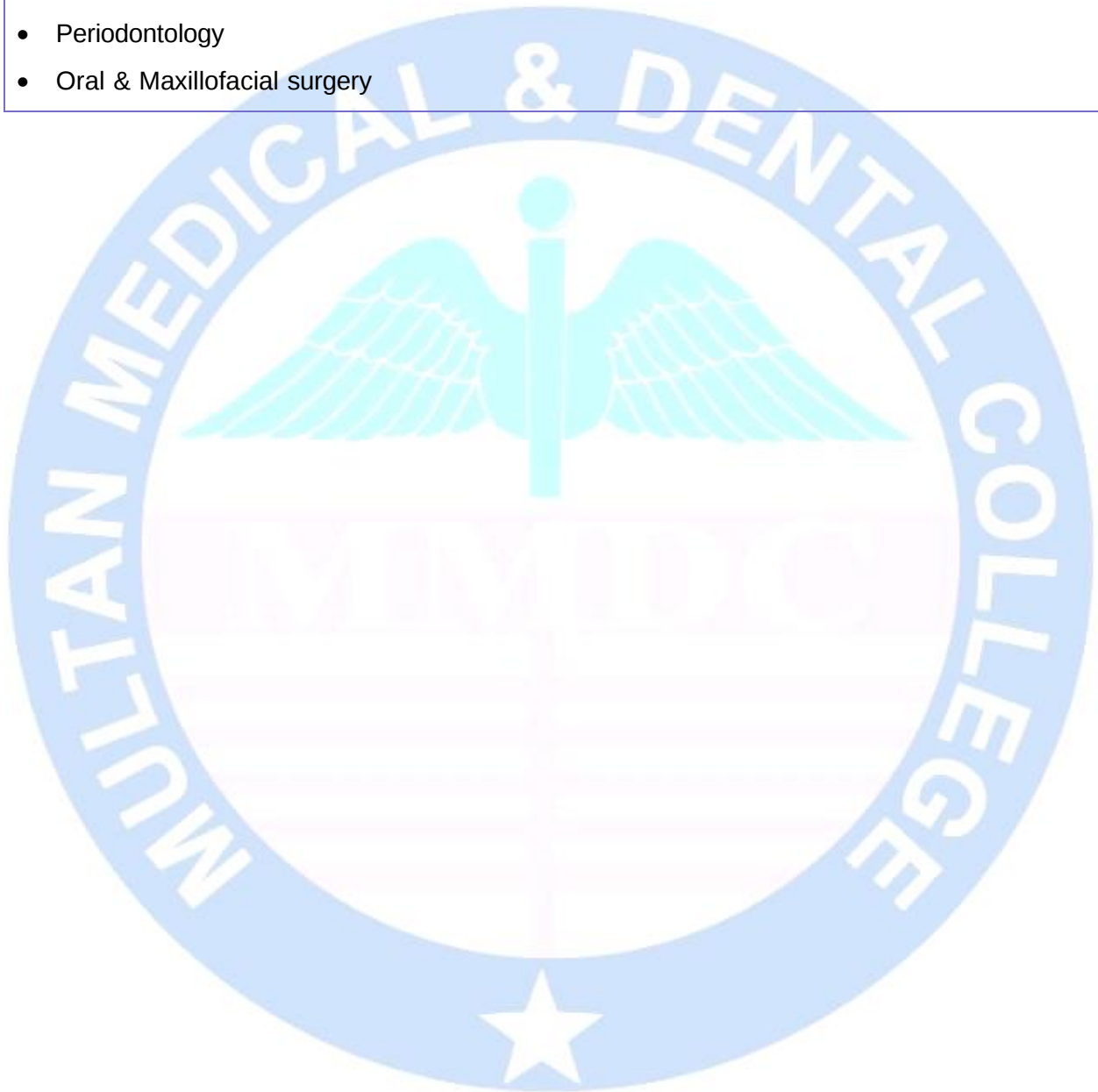
Occlusion II develops an integrated understanding of the biological, functional, and clinical aspects of occlusion by linking temporomandibular joint dynamics, neuromuscular control, periodontal responses, and dental relationships. The module emphasizes the determinants of normal and ideal occlusion, growth-related variations, and the impact of occlusal forces on oral structures. Through multidisciplinary integration, students are prepared to recognize occlusal patterns, identify deviations, and apply foundational concepts in diagnosis and clinical decision-making.

Module Outcomes

- Explain the anatomy and function of the temporomandibular joint (TMJ), including the articular disc, synovial fluid, ligaments, and joint stability.
- Describe neuromuscular control of mandibular movement, including the role of muscles of mastication, proprioceptors, and central regulation.
- Explain the role of periodontal structures (PDL and alveolar bone) in occlusal force distribution, proprioception, and adaptation (including Wolff's law).
- Describe occlusal curves, arch forms, and functional cusp relationships, and explain their role in masticatory efficiency.
- Explain facial growth, bone remodeling, and their influence on occlusion and facial profile.
- Define and differentiate static and dynamic occlusion, including centric relation, centric occlusion, maximum intercuspation, and excursive movements.
- Explain determinants of occlusion, including anterior (incisal and canine guidance) and posterior (TMJ/condylar guidance) factors.
- Describe characteristics of ideal occlusion and compare them with normal occlusion and malocclusion.
- Classify occlusal relationships using systems such as Angle's classification and Andrews' Six Keys of Occlusion.
- Explain occlusal features across different dentitions (deciduous, mixed, and permanent).
- Describe the role of orthodontics in the development and maintenance of occlusion, including preventive and interceptive approaches.
- Identify the effects of parafunctional habits (e.g., bruxism) on TMJ, teeth, and periodontal structures.
- Correlate occlusal concepts with clinical implications, including joint health, tooth wear, and functional disturbances.

Subjects Integrated in the Module

- Oral Biology & Tooth Morphology
- Prosthodontics
- Orthodontics
- Periodontology
- Oral & Maxillofacial surgery



THEORY

Oral Biology & Tooth Morphology				
CODE	SPECIFIC LEARNING OUTCOMES	TOPIC	MIT	AT
Oc2-OB-001	Define the biological features of the temporomandibular joint relevant to occlusion, including the structure and function of the articular disc, synovial fluid, and cartilage adaptation	TMJ & Oral Biology	LGIS/SGD	MCQS / VIVA
	Explain the neuromuscular control of mandibular movement, including the role of muscle spindles, Golgi tendon organs, and the central nervous system in maintaining occlusal stability.		LGIS/SGD	MCQS / VIVA
Oc2-OB-002	Describe occlusal curves and explain their significance in masticatory efficiency	Occlusal Curves & Arch Form	LGIS/SGD	MCQS / VIVA
	Explain the concept of arch form		LGIS/SGD	MCQS / VIVA
	Describe the normal dental arch forms (tapered, ovoid, square)		LGIS/SGD	MCQS / VIVA
	Define supporting cusps and guiding cusps, and explain their functional role in occlusion.		LGIS/SGD	MCQS / VIVA

Oc2-OB-003	Explain the basic concepts of facial growth and bone remodeling Describe various facial types and profiles.	Facial Growth, Facial Types & Bone remodeling	LGIS/SGD	MCQS / VIVA
Periodontology				
CODE	SPECIFIC LEARNING OUTCOMES	TOPIC	MIT	AT
Oc2-Pe-001	Explain the basic concepts of periodontology, including the structure and function of the periodontium and its role in maintaining oral health.	Periodontium & Occlusal Response	LGIS/SGD	MCQS / VIVA
	Describe the Physiology of Mastication and the role of mechanoreceptors in the PDL in regulating occlusal biting forces.		LGIS/SGD	MCQS / VIVA
	Describe the role of the periodontal ligament (PDL) in occlusal function, including mechanoreception, proprioception, and tooth mobility.		LGIS/SGD	MCQS / VIVA
Prosthodontics				
CODE	SPECIFIC LEARNING OUTCOMES	TOPIC	MIT	AT
Oc2-PD-001	Explain the characteristics of ideal occlusion in natural dentition and its significance for oral function and health.	Characteristics and Significance of Ideal Occlusion	LGIS/SGD	MCQS / VIVA
	Define the Anterior & posterior determinants (TMJ morphology, condylar guidance) incisal guidance, canine guidance of occlusion).		LGIS/SGD	MCQS / VIVA
	Define & differentiate between static occlusion (centric occlusion, centric relation, maximum intercuspation) and dynamic occlusion (working side, balancing side, protrusive and		LGIS/SGD	MCQS / VIVA

	lateral excursions).			
	Enumerate the key features of occlusion in deciduous, mixed & permanent dentition		LGIS/SGD	MCQS / VIVA
ORAL & MAXILLOFACIAL SURGERY				
CODE	SPECIFIC LEARNING OUTCOMES	TOPIC	MIT	AT
Oc2-OMFS-001	Describe the biological features of the temporomandibular joint relevant to occlusion	Review of TMJ anatomy & Its Occlusal relevance	LGIS/SGD	MCQS / VIVA
	Summarize the anatomy of TMJ, including TMJ ligaments and the muscles of mastication		LGIS/SGD	MCQS / VIVA
	Compare the condyle disc complex and mandibular fossa		LGIS/SGD	MCQS / VIVA
	Explain the role of synovial fluid in joint maintenance		LGIS/SGD	MCQS / VIVA
	Discuss the importance of joint stability and intra-articular pressure		LGIS/SGD	MCQS / VIVA
ORTHODONTICS				
CODE	SPECIFIC LEARNING OUTCOMES	TOPIC	MIT	AT
Oc2-OtD-001	Define Orthodontics & describe the branches of Orthodontics.	Introduction to Orthodontics & Development of Occlusion & Dentition	LGIS/SGD	MCQS / VIVA
	Explain the relevance of preventive and interceptive orthodontics to the development of occlusion and dentition during the primary and mixed dentition periods.		LGIS/SGD	MCQS / VIVA
Oc2-OtD-002	Define overjet, and overbite.	Normal Occlusion, Occlusal	LGIS/SGD	MCQS / VIVA
	Define and differentiate between ideal occlusion, normal occlusion and malocclusion.	Relationships and Key Characteristics	LGIS/SGD	MCQS / VIVA
	Enumerate Andrews' Six Keys of occlusion & its functional significance. What is classification		LGIS/SGD	MCQS / VIVA

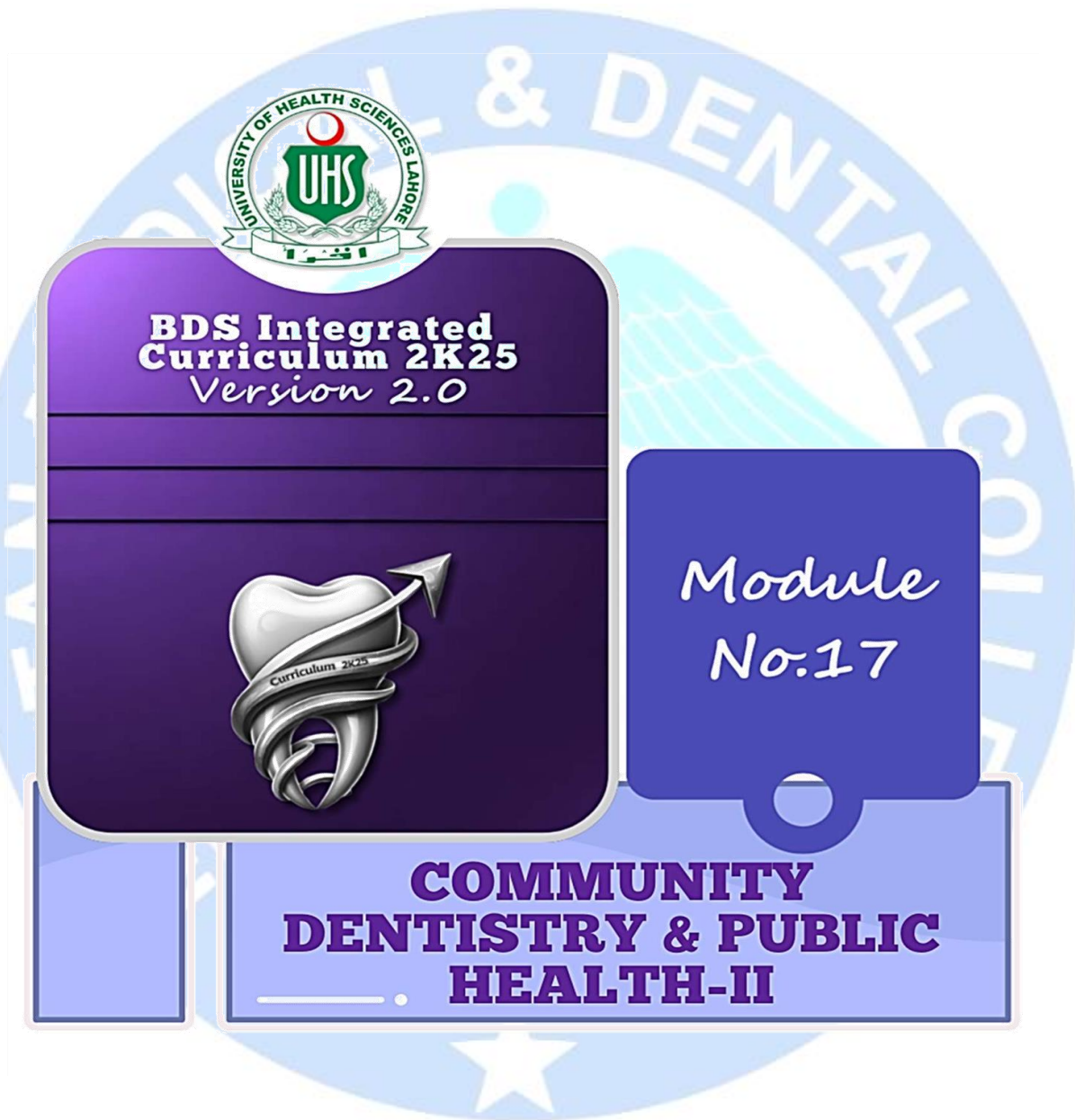
	of normal incisor, canine, and molar relationships (using Angle's classification system)			
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PRACTICALS / LAB WORK

ORTHODONTICS				
CODE	SPECIFIC LEARNING OUTCOMES	TOPIC	MIT	AT
Oc2-OtD-003	Measure overjet and overbite accurately using a periodontal probe or ruler using study models.	Overjet & Overbite	Demonstration	OSPE
Oc2-OtD-004	Classify occlusion based on Angle's classification using study models.	Angle's classification	Demonstration	OSPE

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MODULE NO. 17
COMMUNITY DENTISTRY &
PUBLIC HEALTH-II



MODULE RATIONALE

Community Dentistry and Public Health II builds on foundational public health concepts to develop competencies in oral health promotion, healthcare systems, and service planning. The module emphasizes behavioural sciences, health education, and patient-centered care to address oral health inequalities and improve treatment adherence. It prepares students to design, implement, and evaluate preventive programs while integrating ethical, psychological, and socio-cultural aspects into clinical and community practice.

MODULE OUTCOMES

- Explain principles of oral health promotion and apply models such as the Ottawa Charter in designing preventive strategies.
- Describe the structure and function of healthcare systems, including Primary Health Care and factors influencing access and delivery of dental services.
- Explain concepts of health service planning, evaluation, and quality assurance, including audit cycles and needs assessment.
- Apply principles of health economics and describe financing and remuneration systems in oral healthcare.
- Identify barriers to oral healthcare access and propose strategies to improve equity for disadvantaged populations.
- Explain oral health education principles, including educational models, approaches, and levels of prevention.
- Design and deliver oral health education interventions in community and clinical settings.
- Apply epidemiological and public health principles in planning and evaluating oral health programs.
- Explain the roles of dental auxiliaries in oral healthcare delivery systems.
- Integrate behavioural science theories (learning theories, motivation, Health Belief Model) to promote behaviour change in patients.
- Demonstrate effective counselling and communication skills, including motivational interviewing and patient-centered approaches.
- Recognize and manage psychological conditions such as anxiety, depression, and stress in dental patients, including appropriate referral.
- Apply ethical principles and professional responsibilities in clinical decision-making, including consent, confidentiality, and safeguarding.
- Demonstrate advanced communication skills, including breaking bad news (SPIKES),

managing difficult patients, and culturally sensitive interactions.

- Assess psychosocial determinants of oral health, including family, socioeconomic, and cultural influences.
- Promote patient adherence and behavioural change through evidence-based strategies.
- Conduct community-based oral health assessments and apply indices (e.g., CPITN) to determine treatment needs.
- Demonstrate professionalism, teamwork, and self-awareness, including managing stress and burnout in dental practice.

SUBJECTS INTEGRATED IN THE MODULE

- Community & Preventive Dentistry
- Behavioral Sciences

THEORY

COMMUNITY & PREVENTIVE DENTISTRY

CODE	SPECIFIC LEARNING OUTCOMES	TOPIC	MIT	AT
CDPH2-CD-001	Define oral health promotion and outline its key principles	Oral health promotion	LGIS/SGD	MCQS / VIVA
	Apply the principles of health promotion and disease prevention to design oral health strategies.		LGIS/SGD	MCQS / VIVA
	Describe the five areas for action in the Ottawa Charter and illustrate each with oral health examples.		LGIS/SGD	MCQS / VIVA
	List potential partners and community settings for oral health promotion activities		LGIS/SGD	MCQS / VIVA
CDPH2-CD-002	Define and classify dental auxiliaries, and describe their roles in oral health delivery systems	Dental Auxiliaries	LGIS/SGD	MCQS / VIVA
CDPH2-CD-003	Discuss the Primary Health Care (PHC) approach and explain the principles of the Alma-Ata Declaration.	Introduction to the health care system	LGIS/SGD	MCQS / VIVA
	Outline factors influencing the development and evaluation of healthcare systems.		LGIS/SGD	MCQS / VIVA
	Describe the different components of a healthcare system		LGIS/SGD	MCQS / VIVA

	Outline the criteria for evaluating healthcare systems		LGIS/SGD	MCQS / VIVA
CDPH2-CD-004	Define quality in healthcare and explain the quality assurance/audit cycle.	Quality assurance cycle	LGIS/SGD	MCQS / VIVA
	Discuss the models of access to healthcare and apply the concept practically in a dental setting.		LGIS/SGD	MCQS / VIVA
CDPH2-CD-005	Define planning and explain the steps of the rational planning model for dental services.	Planning dental services	LGIS/SGD	MCQS / VIVA
	Describe evaluation and its types, and identify the range of information needed for dental service planning.		LGIS/SGD	MCQS / VIVA
	Define concepts of need		LGIS/SGD	MCQS / VIVA

	Outline the stages necessary in planning strategy.		LGIS/SGD	MCQS / VIVA
CDPH2-CD-006	Explain the basic principles of health economics and outline payment and remuneration systems in oral health care.	Financing oral health care	LGIS/SGD	MCQS / VIVA
	Explain the Health goals of a program		LGIS/SGD	MCQS / VIVA
CDPH2-CD-007	Describe common problems with healthcare delivery	Problem with health care services and health care system	LGIS/SGD	MCQS / VIVA
	Discuss different barriers to dental care reception		LGIS/SGD	MCQS / VIVA
	Define the terms 'access to care /and barriers to care		LGIS/SGD	MCQS / VIVA
	Outline how the barriers to care might be overcome for disadvantaged groups		LGIS/SGD	MCQS / VIVA
CDPH2-CD-008	Define determinants of health and equality	Dental Public Health	LGIS/SGD	MCQS / VIVA
CDPH2-CD-009	Describe the educational process with its domains	Oral Health Education	LGIS/SGD	MCQS / VIVA
	Explain the concept of educational theories/ models		LGIS/SGD	MCQS / VIVA
	Define Oral health education, its settings, and approaches		LGIS/SGD	MCQS / VIVA
	Describe the objectives of oral health education		LGIS/SGD	MCQS / VIVA
	Identify principles of oral health education		LGIS/SGD	MCQS / VIVA
	Explain the steps in planning Oral Health Education		LGIS/SGD	MCQS / VIVA
	Discuss the three levels of prevention of oral diseases		LGIS/SGD	MCQS / VIVA
	Discuss the health care system and the levels of prevention per Pakistani system		LGIS/SGD	MCQS / VIVA

BEHAVIORAL SCIENCES				
CODE	SPECIFIC LEARNING OUTCOMES	TOPIC	MIT	AT
CDPH2-BhS-001	Describe strategies to strengthen emotional intelligence (EQ) and apply cognitive abilities effectively in dental settings.	Emotional Intelligence (EQ)	LGIS/SGD	MCQS / VIVA
CDPH2-BhS-002	Describe how genetic, environmental, and social factors shape personality and intelligence in dental professionals and patients.	Personality Factors	LGIS/SGD	MCQS / VIVA
CDPH2-BhS-003	Explain the interplay of nature vs nurture in shaping behaviours and characteristics relevant to dental practice.	Nature vs Nurture	LGIS/SGD	MCQS / VIVA
CDPH2-BhS-004	Utilize reinforcement, motivation, and feedback, and apply Behaviourism, Social Learning Theory (Bandura), and Cognitive Theory to achieve effective oral health behaviour change in dental patients.	Learning Theories	LGIS/SGD	MCQS / VIVA
CDPH2-BhS-005	Define motivation, distinguish intrinsic from extrinsic types, and apply motivational theories to improve treatment adherence in dental patients.	Motivational Theories	LGIS/SGD	MCQS / VIVA
CDPH2-BhS-006	Describe and apply the Health Belief Model to promote preventive and treatment-related oral health behaviours in dental patients.	Health Belief Model	LGIS/SGD	MCQS / VIVA
CDPH2-BhS-008	Explain basic counselling principles and the role of counselling in dental healthcare.	Counselling Principles	LGIS/SGD	MCQS / VIVA
CDPH2-BhS-008	Compare paternalistic, shared, and informed doctor-patient relationship models and apply them to guide	Doctor-Patient Relationship Models	LGIS/SGD	MCQS / VIVA

	clinical interactions in dentistry.			
CDPH2-BhS-009	Recognize signs of anxiety, depression, and psychological distress in dental patients.	Psychological Distress -- Recognition	LGIS/SGD	MCQS / VIVA
CDPH2-BhS-010	Initiate appropriate referral to mental health services or apply CBT-based management strategies for distressed dental patients.	Psychological Distress -- Management	LGIS/SGD	MCQS / VIVA
CDPH2-BhS-011	Explain how family dynamics, parenting styles, and help-seeking behaviors influence dental attendance and patient cooperation.	Family Dynamics & Help-Seeking	LGIS/SGD	MCQS / VIVA
CDPH2-BhS-012	Describe how socioeconomic factors and social constructs (gender roles, stigma, cultural norms) shape oral health perceptions and outcomes.	Social Constructs & Inequalities	LGIS/SGD	MCQS / VIVA
CDPH2-BhS-013	Explain the relationship between stress, psychosocial factors, and oral health outcomes and assess impact on quality of life.	Psychosocial Impact on Oral Health	LGIS/SGD	MCQS / VIVA
CDPH2-BhS-014	Describe psychosocial aspects of chronic illness and hospitalization and their impact on dental care and patient cooperation.	Chronic Illness & Hospitalization	LGIS/SGD	MCQS / VIVA
CDPH2-BhS-015	Explain palliative care principles, psychosocial support strategies, and management of medically unexplained oral symptoms in dental and oral oncology settings.	Palliative & Special Care	LGIS/SGD	MCQS / VIVA
CDPH2-BhS-016	Describe the SPIKES protocol and explain principles of breaking bad news in dental scenarios.	Breaking Bad News -- Principles	LGIS/SGD	MCQS / VIVA
CDPH2-BhS-017	Identify ethical dilemmas in dental practice (autonomy, consent, confidentiality) and apply established bioethical frameworks (beneficence, non-maleficence, justice) to analyze and resolve them.	Ethical Dilemmas -- Frameworks Professional Responsibility	LGIS/SGD	MCQS / VIVA

	Reflect on professional responsibilities when navigating ethical conflicts involving cultural sensitivity, dual obligations, and patient welfare.		LGIS/SGD	MCQS / VIVA
CDPH2-BhS-018	Recognize how behavior affects oral health outcomes and develop evidence-based strategies to promote healthy oral behaviors.	Behavioural Influences on Oral Health	LGIS/SGD	MCQS / VIVA
CDPH2-BhS-019	Evaluate factors influencing patient adherence and apply behavior change strategies to improve oral health outcomes. Explain the impact of low health literacy on oral health outcomes and treatment adherence.	Patient Adherence	LGIS/SGD	MCQS / VIVA
CDPH2-BhS-020	Recognize signs of stress and burnout in dental professionals and apply evidence-based coping strategies to maintain wellbeing and clinical performance.	Dentist Stress & Burnout	LGIS/SGD	MCQS / VIVA

PRACTICALS / LAB WORK				
COMMUNITY & PREVENTIVE DENTISTRY				
CDPH2-CD-010	Deliver a short OHE message to classmates using lab models (tooth models, charts, typodonts).	Oral Health Education	Demonstration	OSPE
CDPH2-CD-011	Classify example cases into primary, secondary, and tertiary prevention using different scenarios	Levels of Prevention Classification	Demonstration	OSPE
CDPH2-CD-012	Conduct a community-based periodontal health assessment by performing structured history taking and CPITN screening using WHO criteria, and determine periodontal treatment needs.	Community Visit 2: Periodontal Health Assessment Activity	Demonstration	OSPE
BEHAVIORAL SCIENCES				
CODE	SPECIFIC LEARNING OUTCOMES	TOPIC	MIT	AT

CDPH2-BhS-021	Apply structured advanced communication and demonstrate interprofessional teamwork in complex patient scenarios.	Advanced Communication	Demonstration	OSPE
CDPH2-BhS-022	Demonstrate non-judgmental, culturally sensitive communication with patients affected by stigma or social barriers.	Cultural Sensitivity & Health Disparities	Demonstration	OSPE
CDPH2-BhS-023	Implement appropriate behaviour change techniques (e.g., motivational interviewing, goal setting) to improve patient adherence to oral health recommendations in a simulated consultation.	Behaviour Change Strategies	Demonstration	OSPE
CDPH2-BhS-024	Differentiate biological and environmental factors in dental case scenarios and explain their impact on patient behaviour.	Case Analysis -- Nature vs Nurture	Demonstration	OSPE
CDPH2-BhS-025	Demonstrate professional behaviour in dental practice by effectively resolving complaints, maintaining confidentiality, patient refusal and applying ethical decision-making.	Ethical dilemmas	Demonstration	OSPE
CDPH2-BhS-026	Demonstrate the SPIKES protocol in a simulated bad news consultation.	Breaking Bad News (SPIKES)	Demonstration	OSPE
CDPH2-BhS-027	Apply MI techniques to improve patient adherence to oral hygiene.	Motivational Interviewing	Demonstration	OSPE
CDPH2-BhS-038	Demonstrate ethical informed consent ensuring autonomy and patient understanding.	Informed Consent	Demonstration	OSPE
CDPH2-BhS-029	Respond appropriately to safeguarding scenarios including child abuse and domestic violence.	Safeguarding	Demonstration	OSPE
CDPH2-BhS-030	Analyze patient misinformation and recommend an evidence-based management strategy.	Misinformation Management	Demonstration	OSPE
CDPH2-BhS-031	Manage aggressive, anxious, or non-adherent patients using behavioural approaches without compromising ethics.	Managing Difficult Patients	Demonstration	OSPE
CDPH2-BhS-032	Manage a simulated anxious patient using advanced behavioural desensitization and structured reassurance techniques beyond Tell-Show-Do.	Advanced Dental Anxiety Management	Demonstration	OSPE



Module no. 18
Dental Materials &
Pre-Clinical Dentistry-II



MODULE RATIONALE

This module builds upon foundational knowledge to develop students' understanding of direct restorative materials and their clinical application in operative dentistry and prosthodontics. It integrates the science of dental materials including amalgam, composites, glass ionomers, and cements with principles of adhesion, manipulation, and material selection for specific clinical situations. Additionally, the module introduces essential prosthodontic concepts such as jaw relations and occlusion, alongside practical skills like fabrication of denture base plates. Through hands-on training in cavity preparation, restoration, and finishing procedures, the module aims to enhance students' technical competence, critical thinking, and ability to deliver functionally and aesthetically sound restorations.

MODULE OUTCOMES

- Describe the fundamental requirements of direct restorative materials.
- Describe the composition, manipulation and properties of amalgam.
- Describe the hybrid layer and specify the roles of etchant, primer and adhesive.
- Describe the composition, properties and polymerization of composite and categorize materials based on filler particle size.
- Classify dental cements. Differentiate between temporary and permanent cements. Explain the manipulation, setting characteristics and clinical applications of major dental cements.
- Describe the composition and properties of glass ionomer cements.
- Demonstrate the mixing of amalgam and manipulation of dental cements.
- Describe the vertical jaw relations.
- Describe the basic features of natural and artificial occlusion.
- Demonstrate the fabrication procedure of upper and lower base plates for complete dentures.
- Explain principles of Class I cavity preparation and material selection (amalgam vs composite).
- Demonstrate step-by-step Class I cavity preparation and restorations on typodont for both amalgam and composite restorations.
- Perform finishing and polishing of restorations to achieve proper anatomy, marginal integrity, and occlusion.

SUBJECTS INTEGRATED IN THE MODULE

- Science of Dental Materials
- Pre-clinical Operative Dentistry
- Pre-clinical Prosthodontics

THEORY				
SCIENCE OF DENTAL MATERIALS				
CODE	SPECIFIC LEARNING OUTCOMES	TOPIC	MIT	AT
DMPD2-DM-001	Outline the essential requirements of direct filling restorative materials.	Fundamental Requirements of Direct Restorative Materials	LGIS/SGD	MCQS / VIVA
DMPD2-DM-002	Describe and relate the function of each component of dental amalgam alloy to its physical properties.	Dental Amalgam - Composition	LGIS/SGD	MCQS / VIVA
	Explain the role of the mercury–alloy ratio and its effect on the setting reaction and long-term performance of amalgam restorations.		LGIS/SGD	MCQS / VIVA
	Correlate the manipulation parameters of amalgam with the mechanical and physical properties of the final restoration.		LGIS/SGD	MCQS / VIVA
	Evaluate the evidence on amalgam toxicity and justify its clinical safety in comparison with other environmental and dietary sources of mercury exposure.		LGIS/SGD	MCQS / VIVA
	Explain mercury hygiene guidelines and describe the protocols for safe amalgam waste disposal.		LGIS/SGD	MCQS / VIVA
DMPD2-DM-003	Define the hybrid layer. Explain how resin infiltrates and demineralizes dentin to create the “interdiffusion zone”.	Dentin bonding agents	LGIS/SGD	MCQS / VIVA
	Explain why bonding to wet, organic dentin is harder than bonding to dry, inorganic enamel.		LGIS/SGD	MCQS / VIVA
	Describe how this cutting debris is either removed or modified by different bonding systems.		LGIS/SGD	MCQS / VIVA
	Differentiate the specific roles of the Etchant(acid), Primer(monomer) and Adhesive(resin).		LGIS/SGD	MCQS / VIVA
	Categorize agents by generation (1st - 8th) and by strategy (Etch and Rinse vs. Self-Etch)		LGIS/SGD	MCQS / VIVA
	Explain how keeping dentin moist prevents the collapse of collagen fibers during the procedure.		LGIS/SGD	MCQS / VIVA
DMPD2-DM-004	Describe the composition. Detail the roles of the organic matrix (Bis-GMA), inorganic fillers and the silane coupling agent in the composition structure	Composites	LGIS/SGD	MCQS / VIVA

	Categorize materials based on filler particle size(Macro, Micro, Hybrid, Nano, Bulkfill) and explain how this determines clinical use. Explain the polymerization process. Describe the chemical stages of light- activation and the function of the photo-initiator Camphorquinone. Discuss polymerization shrinkage. Explain the mechanism of “setting stress” and how it leads to marginal microleakage and post-operative sensitivity. Analyze the C-Factor(configuration factor). Describe the relationship between bonded and unbonded tooth surfaces and how it dictates incremental layering. Differentiate material properties. Compare the viscosity, flow and mechanical strength of Flowable vs. Packable composites. Explain the role of Coupling Agent. Describe how Silane creates a chemical bond between the filler particles and the resin matrix to ensure structural integrity. Outline finishing and polishing protocol. Describe the sequence of using abrasive instruments to achieve a surface that resists plaque accumulation.		LGIS/SGD	MCQS / VIVA
			LGIS/SGD	MCQS / VIVA
			LGIS/SGD	MCQS / VIVA
			LGIS/SGD	MCQS / VIVA
			LGIS/SGD	MCQS / VIVA
			LGIS/SGD	MCQS / VIVA
			LGIS/SGD	MCQS / VIVA
DMPD2-DM-005	Classify dental cements according to composition and clinical use.	Dental Cements	LGIS/SGD	MCQS / VIVA
	Differentiate between temporary and permanent cements based on composition, strength, and clinical application		LGIS/SGD	MCQS / VIVA
	Explain the manipulation, setting characteristics, and clinical applications of major dental cements including zinc phosphate, GIC, calcium hydroxide, zinc polycarboxylate and ZOE.		LGIS/SGD	MCQS / VIVA
DMPD2-DM-006	Describe the chemical composition and key properties of Glass Ionomer Cements GIC.	Glass Ionomer Cements	LGIS/SGD	MCQS / VIVA
	Correlate the constituents of GIC with its physical and biological properties.		LGIS/SGD	MCQS / VIVA
	Explain the setting reaction, fluoride release ion exchange and environmental interaction mechanisms of GIC.		LGIS/SGD	MCQS / VIVA
	Explain the rationale behind the development of resin-modified glass ionomers and describe their advantages over conventional glass ionomer cements and clinical performance.		LGIS/SGD	MCQS / VIVA

Explain how modifications in GIC composition influence material properties	LGIS/ SGD	MCQS / VIVA
Describe the composition, properties and clinical indications of metal-reinforced glass ionomers (cermet's).	LGIS/ SGD	MCQS / VIVA

OPERATIVE DENTISTRY				
CODE	SPECIFIC LEARNING OUTCOMES	TOPIC	MIT	AT
DMPD2-OD-001	Outline the principles and steps of tooth preparation for class I amalgam cavity design on mandibular molars, maxillary molars and premolars utilizing principles of cavity preparations.	Class I cavity preparation for amalgam	LGIS/SGD	MCQS / VIVA
DMPD2-OD-002	Understand the objectives of pulp protection and clinical considerations	Liners and Bases	LGIS/SGD	MCQS / VIVA
DMPD2-OD-003	Describe the principles of restoration design for amalgam, including condensation, carving, finishing, and the factors influencing marginal integrity and longevity of the restoration	Amalgam Restorations in Class I	LGIS/SGD	MCQS / VIVA
DMPD2-OD-004	Describe the indications and case selection for Class I composite restorations.	Class I Composite Restorations	LGIS/SGD	MCQS / VIVA
	Explain conservative cavity design principles for posterior adhesive restorations		LGIS/SGD	MCQS / VIVA
	Explain polymerization shrinkage and C-factor in posterior composites.		LGIS/SGD	MCQS / VIVA
	Discuss finishing, polishing, and occlusal adjustment protocols to optimize restoration longevity.		LGIS/SGD	MCQS / VIVA
	Describe common clinical complications (e.g., postoperative sensitivity, marginal leakage, open contacts, overhangs) and discuss preventive strategies.		LGIS/SGD	MCQS / VIVA
PRE-CLINICAL PROSTHODONTICS				
CODE	SPECIFIC LEARNING OUTCOMES	TOPIC	MIT	AT
DMPD2-PD-001	Define vertical and horizontal jaw relations.	Establishing Artificial Occlusion	LGIS/SGD	MCQS / VIVA
	Enlist following features of natural occlusion: • Overjet • Overbite • Centric relation • Maximum intercuspation • Condylar guidance, and • Incisal guidance			



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Define significant planes for arrangement of teeth:

- Facio lingual,



• Mesiodistal, • Occlusal plane, • Ridge relation, and • Rotational curve	LGIS/SGD	MCQS / VIVA
Define anatomic occlusion in artificial dentition.	LGIS/SGD	MCQS / VIVA
Correlate features of natural occlusion with artificial dentition.	LGIS/SGD	MCQS / VIVA

PRACTICAL / LAB WORK				
SCIENCE OF DENTAL MATERIALS				
CODE	SPECIFIC LEARNING OUTCOMES	TOPIC	MIT	AT
DMPD2-DM-007	Manipulate GIC as luting/lining or base consistency.	Manipulation techniques for Dental Cements	Demonstration	OSPE
	Mix Zinc phosphate dental cement as luting or base consistency.		Demonstration	OSPE
	Manipulate Zinc Oxide Eugenol dental cement		Demonstration	OSPE
	Mix Calcium hydroxide (two paste) dental cement as pulp capping agent		Demonstration	OSPE
DMPD2-DM-008	Perform trituration with correct mercury-alloy ratio. Also demonstrate condensation, burnishing, finishing and carving.	Dental amalgam	Demonstration	OSPE
OPERATIVE DENTISTRY				
CODE	SPECIFIC LEARNING OUTCOMES	TOPIC	MIT	AT
DMPD2-OD-005	Prepare Class I cavity on typodont for an amalgam restoration (premolars & mandibular molars).	Class I Cavity Preparation for Amalgam	Demonstration	OSPE
	Demonstrate preparation of a Class I cavity on maxillary molars of typodont.		Demonstration	OSPE
DMPD2-OD-006	Apply liners & bases in a prepared cavity.	Pulp protection	Demonstration	OSPE
DMPD2-OD-007	Perform trituration, condensation, carving, and finishing of amalgam restoration in prepared Class I cavity on a typodont.	Class I Restoration with amalgam	Demonstration	OSPE
DMPD2-OD-008	Perform quadrant isolation with rubber dam for posterior composite restorations	Quadrant Isolation	Demonstration	OSPE

DMPD2-OD-009	Prepare conservative Class I cavity on typodont for composite restoration.	Cavity preparation for class I composite restoration	Demonstration	OSPE
DMPD2-OD-010	Demonstrate adhesive protocol, including: i. Etching strategy (total-etch/self-etch) ii. Primer and bonding application iii. Solvent evaporation and light curing	Adhesion and composite restoration	Demonstration	OSPE
	Place composite using appropriate incremental techniques to minimize shrinkage stress and establish proper contour and contact.		Demonstration	OSPE
DMPD2-OD-011	Finish and polish restorations while maintaining marginal integrity and anatomy.	Finishing and Polishing	Demonstration	OSPE
	Evaluate and adjust occlusion to ensure proper functional contacts.		Demonstration	OSPE
PRE-CLINICAL PROSTHODONTICS				
CODE	SPECIFIC LEARNING OUTCOMES	TOPIC	MIT	AT
DMPD2-PD-001	Prepare an edentulous cast suitable for the fabrication of a complete denture.	Preparation of Edentulous Cast	Demonstration	OSPE
	Identify anatomical landmarks on edentulous cast.		Demonstration	OSPE
DMPD2-PD-002	Perform wax-up of trial denture upper base plate ensuring recommended extension and denture base adaptation.	Wax-Up of Upper Base Plate	Demonstration	OSPE
DMPD2-PD-003	Perform wax-up of trial denture lower base plate ensuring correct border extension and stability.	Wax-Up of Lower Base Plate	Demonstration	OSPE
DMPD2-PD-003	Demonstrate correct procedure for flasking trial denture upper and lower base plates prior to processing.	Flasking of Upper and Lower Base Plates	Demonstration	OSPE
DMPD2-PD-004	Perform dewaxing for trial denture upper and lower base plates.	Dewaxing of Upper and Lower Base Plates	Demonstration	OSPE
DMPD2-PD-005	Perform packing, curing, and finishing of trial denture base plates, ensuring smooth and well-adapted surfaces.	Packing, Curing, and Finishing of Base Plates	Demonstration	OSPE

PRISME BLOCK-5

PRISME	
P	Professionalism
R	Research
I	Informatics
S	Social Responsibility Social Accountability
M	Management (Healthcare)
E	Evidence Based Dentistry (EBD)

Professionalism		
Learning Objective	Subject	Facilitator
Utilize effective communication techniques with dental patients while history taking.	Behavioral Science	
Develop rapport with patients using rapport building steps.		
Enhance emotional literacy in handling pediatric & adult dental patients.		
Research		
Identify referencing styles & use referencing software (Vancouver)	Community Dentistry	
Submit structured literature review (portfolio task)		
Design the basic framework of an epidemiological study relevant to dental public health.		
Apply techniques such as randomization and blinding to minimize bias in studies.		
Informatics		

Apply citation managers (Zotero/Mendeley/EndNote)	Community Dentistry	
SOCIAL RESPONSIBILITY, CULTURAL SENSITIVITY, ETHICS & JURISPRUDENCE		
Develop empathy and cultural competence.	Behavioral Science	
Manage patient anxiety during procedures		
Explore psychological responses to dental-related illnesses.		
Apply SPIKES protocol in delivering bad news.		
Maintain professional boundaries with patients.		
Manage patient expectations regarding dental procedures.		
Management & Entrepreneurship		
Collaborate effectively with dental laboratory technicians to ensure accurate fabrication and timely delivery of restorative and rehabilitative appliances.	Prosthodontics	
Execute assigned tasks within time limits using planning strategies.		
EVIDENCE BASED DENTISTRY		
Apply basic behavior-change models (e.g., Health Belief Model) to design patient education	Behavioral Science	

A large, light blue watermark of the Multan Medical & Dental College logo is centered in the background. It features a caduceus with wings and the text 'MULTAN MEDICAL & DENTAL COLLEGE' around the perimeter, with a star at the bottom.

TEACHING METHODOLOGIES

INSTRUCTIONAL STRATEGIES

Delivery of a curriculum also needs a diversity of educational vernacular for the different learning styles. Following are a few of the recommended instructional strategies. It is advised that at least **three different methods of instruction** should be adopted in the institutional planning. This will enable the diversity of learning patterns to be facilitated.

Large Group Interactive Session (LGIS)

Lecture format is the most widely used approach to teaching especially in a large class size with average attention span of 20-30 mins. Interactive lecturing involves a two-way interaction between the presenter and the participants. Interactive methods like brainstorming, buzz group, simulation, role play, and clinical cases can be used.

Significance of its usage

- Relaxed environment, diverse opinions, active involvement
- Increase attention and motivation.
- Independence and group skills.
- Cost effective.
- Suitable for taking advantage of available audiovisual technologies.

Team based learning (TBL)

TBL is a uniquely powerful form of small group learning. It provides a complete coherent framework for building a flipped course experience. There are four essential elements of TBL which include:

- Teams must be properly formed and managed (5-7 students)
- Getting students ready
- Applying course concepts
- Making students accountable

Significance of its usage

- Students are more engaged.
- Increased excitement in TBL classroom
- Teams outperforms best members.
- Students perform better in final and standardized exams.

Problem-based learning (PBL)

It is an instructional student-centered approach in which students work in small groups on a health problem, identifying their own educational needs and being responsible for the acquisition of the knowledge required to understand the scenario.

Significance of its usage

- Teamwork
- Critical evaluation of literature
- Self-directed learning and use of resources
- Presentation skills
- Leadership
- Respect for colleagues' views

Tutorials

Tutorial is a class or short series of classes, in which one or more instructors provides intensive instruction on some subject to a small group. Its purpose is to explore students' point of view, allowing time for discussion, and inculcating self-directed, reflective learning skills.

Significance of its usage

- Develop and assess the extent of background knowledge of students, which enables them to properly understand concepts which may not have been understood in lectures.
- Develop problem-solving skills.
- Develop practice of self-learning.
- Reduced time to understand the topic.

Reflective Writing

It is a metacognitive process that occurs before, during and after the situation with the purpose of developing greater understanding of both the self and situation so that future encounters with the situation are informed from previous encounters.

Significance of its usage

- Questioning attitude and new perspectives.
- Areas for change and improvement.
- Respond effectively to new challenges.
- Critical thinking and coping skills

Clinical Teaching

Teaching and learning that occurs with actual patient as the focus. It occurs in the dental simulation labs, Dental Clinics and for OMFS in the wards and operation theatre

Significance of its usage

- Stimulus of clinical contact
- Psychomotor skills
- Communication skills
- Language skills
- Interpersonal skills
- Professional attitudes and empathy
- Role modelling

Laboratory Practical

Lab practicals involve things like identifying a structure, a type of stain through a microscope, a problem with a preparation, reading biochemical test results and answering safety questions. These simulations allow students to attempt experiments in the laboratory in a risk-free way that provides the opportunity to make mistakes and learn how to correct them using the immediate feedback generated.

Significance of its usage

- Enhance mastery of subject matter.
- Develop scientific reasoning.
- Develop practical skills.
- Develop teamwork abilities.

Demonstrations

The demonstration method in teaching can be defined as giving a demo or performing a specific activity or concept. It is a teaching-learning process carried out in a very systematic manner.

Significance of its usage

- Promotes learning and correlates theory with practice.
- Sharpens the observation skills.
- Sustain interests in learning environment.
- Helps teacher to evaluate students' response



Regulations:

1. Professional examination shall be open to any student who: -
 - a. has been enrolled/registered and completed one academic year preceding the concerned professional examination in a constituent/affiliated college of the University.
 - b. has his/her name submitted to the Controller of Examinations, for the purpose of examination, by the principal of the college in which he / she is enrolled & is eligible as per all prerequisites of the examination.
 - c. has his/her marks of internal assessment in all the Blocks/Clinical Clerkships sent to the Controller of Examinations through office of the principal of the college concerned, at the end of each Block/Clinical Clerkships, as well as at the conclusion of the academic session along with the admission form for the professional examination.
 - d. Has been certified by the principal of his/her college:
 - (i) of good character;
 - (ii) of having attended not less than cumulative 75%* of the full course of lectures delivered, practical and clinical rotations conducted in that academic session, while maintaining 75 % attendance in each Block/Clinical Clerkship,
 - (iii) of having appeared at the Block/Clinical Clerkship Examinations conducted by the college of enrolment with at least 50 % marks* in each Block/Clinical Clerkship examination, as well as in aggregate score of all Blocks/Clinical Clerkships examinations for the concerned year;
2. Written/Theory paper in all Professional Examinations in Modular Integrated MBBS or BDS Curricula shall consist of MCQs alone, with effect from Annual 2026 Examinations. (Ref: No. UHS/REG-25/2379, dated 17.11.2025)
3. The minimum number of marks required to pass the professional examination for each Block/Clinical Clerkship shall be fifty percent (50%) in Written and fifty percent (50%) in the 'Oral/Practical/Clinical' examinations and fifty percent (50%) in aggregate, independently and concomitantly, at one and the same time.
4. A candidate failing in one or more Blocks/Clinical Clerkships in the annual examination shall be provisionally allowed to join the next professional class till the commencement of supplementary examinations. The candidate, however, shall have to pass the failed Block/s or Clinical Clerkship in this supplementary examination failing which he / she shall be detained in the professional year. Under no circumstances, a candidate shall be promoted to the next professional class till he/she

has previously passed all the Blocks/Clinical Clerkships in the preceding professional examination.

If a student appears in the Supplementary Examination for the first time as he/she did not appear in the annual examination for any reason and failed in any Block/Clinical Clerkship in the Supplementary Examination, he/she will be detained in the same class and will not be promoted to the next class.

**Notification No. UHS/REG-25/2351 Dated 13-11-2025*

5. Only one annual and one supplementary of each Professional Examination shall be allowed in a particular academic session. However, in exceptional situations, i.e., national calamities, war or loss of solved answer books in case of accident, special examination may be arranged after having observed due process of law. This will require permission of relevant authorities, i.e., Syndicate and Board of Governors.
6. Any student who fails to clear the First or Second Professional MBBS / First Professional BDS Examination, in four consecutive attempts, each, inclusive of both availed as well as un-availed attempts, after becoming eligible for the examination, and has been expelled on that account shall not be eligible for continuation of studies and shall not be eligible for admission as a fresh candidate in either MBBS or BDS.
7. The application for admission of each candidate to the professional examination shall be submitted to the Controller of Examination, through the Principal of the College, on the prescribed format, as per notified schedule, accompanied by the prescribed fee.
8. The candidates shall pay their fee through the principal of their respective Colleges, who shall forward the Examination Forms along with the duly paid challan of the examination fee generated from the Online Examination Form.
9. The continuous internal assessment through the Block/Clinical Clerkship, conducted by the college of enrollment, shall carry 20% weightage in the total allocated marks for the concerned Block/Clinical Clerkship in the Professional Examination conducted by the university. The score will be equally distributed to the Written and "Oral/Practical/Clinical" Examinations.
10. The marks of internal assessment through Blocks/Clinical Clerkships examination and attendance record shall be submitted to Controller of Examinations, along with question papers and keys for the Block/Clinical Clerkship examination, within two weeks of completion of each Blocks/Clinical Clerkships examination.

Further, parent-teacher meetings shall be arranged by the colleges after every Block/Clinical Clerkship examination to share feedback on the progress of students with their parents. Minutes of parent teacher meetings, academic timetables/schedule of Blocks/Clinical Clerkships and

academic year study guides shall be submitted to the Department of Medical Education UHS, as well.

11. It is emphasized that fresh internal assessment or a revision of assessment for supplementary examination shall not be permissible. However, a revised internal assessment for the detained students can be submitted. The internal assessment award in a particular year will not be decreased subsequently detrimental to the detainee candidate. A proper record of the continuous internal assessment shall be maintained by the concerned department/s in the colleges.
12. The colleges may arrange remedial classes and one re-sit for each Block/Clinical Clerkship examination after fulfillment of prescribed requirements given below. The remedial classes and re-sit examination can be conducted during summer vacation/weekends, before or during preparatory leave for the concerned professional examination, subject to the following conditions:

Block/Clinical Clerkship Attendance	Remedial Classes
<75%, ≥ 50% (50-74%)	i. Principal of the college may conduct remedial classes and submit result to the Examination Department, UHS, independently. ii. Principal of the college may conduct remedial classes for detained students, who have short attendance in the first Block/Clinical Clerkship of a professional year after detention. The college may submit record of the remedial classes to the Examination Department, UHS, independently.
<50%	i. Principal of the college may submit attendance record of such students to Department of Medical Education, UHS, seeking permission for conduct of remedial Classes. The conduct of remedial classes in such cases shall be arranged only after permission from the Competent Authority in the university. ii. The colleges shall also have to provide the university with the reasons submitted by the candidates for short attendance along with documentary evidence for the same duly verified by the principal. iii. The following shall be considered as valid reasons for short attendance of the students for consideration of permission for remedial classes:

	Illness/accident/surgery of the student or sickness/death of an immediate relative/being afflicted by a natural/man-made calamity or disaster or detained students (missed the first Block/Clinical Clerkship of the year), students clearing their preceding professional examination in supplementary, or late admitted students who have been permitted <u>for joining</u> by UHS
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Marks in Block/ Clinical Clerkship Examination	Re-sit Examination
<50% Marks/ Absence from Block /Clinical Clerkship Examination	- Principal of the college may submit record of such students to Department of Medical Education, UHS, seeking permission for conduct of re-sit examination. - The conduct of re-sit <u>examination</u> in all cases shall be arranged only after permission from the Competent Authority in the university. - The colleges shall also have to provide the university with the reasons submitted by the candidates for absence from the Block/Clinical Clerkship examination, along with documentary evidence for the same duly verified by the principal. - The following shall be considered as valid reasons for absence of a student from Block/Clinical Clerkship examination, and for consideration of permission for re-sit examination: - Illness/accident/surgery of the student or sickness/death of an immediate relative/being afflicted by a natural/man-made calamity or disaster or detained students (missed the first Block/Clinical Clerkship of the year), students clearing their preceding professional examination in supplementary, or late admitted students who have been permitted for joining by UHS

13. The following policy shall be applicable for transition of students From Traditional Subject-Based Scheme to the Modular Integrated Curriculum Scheme:

- The students who fail in all subjects of the professional examination, either by taking the examination or due to non-appearance, and are detained in the respective professional year, shall follow the Modular Integrated Curriculum Scheme for their teaching and assessment.
- The students who fail in one or more subjects but not all the subjects of a professional examination, either by taking the examination or due to non-appearance, and are detained in the respective professional year, shall attend classes with students following the Modular Integrated Curriculum Scheme, but they will be examined in the failed subject/s according to their parent scheme, i.e., the Traditional Subject-Based Curriculum Scheme.

Block Exam Total = 300 Marks			
Theory Exam	120 Marks	Practical/Clinical Exam	120 Marks
Internal Assessment (10 %)	30 Marks	Internal Assessment (10 %)	30 Marks
Theory Exam + Internal Assessment	150 Marks	Practical/Clinical Examination + Internal Assessment	150 Marks

INTERNAL ASSESSMENT

It shall constitute 20% of the total assessment at the end of the academic year.

Theory 10 %	Scoring Parameter	Weightage (percentage)
	Attendance	75% attendance -1 % >85% attendance -2 %
	Block Exam (MCQs only)	5 %
	Continuous assessment (SEQs, MCQs etc)	3 %
Practical 10 %	Attendance	75% attendance -1 % >85% attendance -2 %
	Block Exam	5 %
	Portfolio-clinical logbooks (CFRC, PRISME)	3 %

BDS 2 nd Year, BLOCK-05								
Sr. No.	Written Exam				Oral/Practical exam			Total
	Modules	Subjects	No. of MCQs	Total MCQs	Subjects	OSPE/ OSCE (9 marks)	OSVE (6 marks)	
1	Endocrinology	Physiology	10	22	Physiology	-	01	06
2		Biochemistry	6		Biochemistry	-	01	06
3		General Pathology & Microbiology	3		Oral Biology & Tooth Morphology	01	01	15
4		Pharmacology & Therapeutics	3		Prosthodontics	01	01	15
5	Occlusion-II	Oral Biology & Tooth Morphology	13	20	Community & Preventive Dentistry	01	01	15
6		OMFS	2		Behavioral Sciences	01	01	15
7		Periodontology	2		Operative Dentistry	01	01	15
8		Prosthodontics	2		Science of Dental Materials	01	01	15
10		Orthodontics	1		PRISME	01	-	09
11	Community Dentistry & Public Health-II	Community & Preventive Dentistry	11	30	CFRC	01	-	09
12		Behavioral Sciences	19		-	-	-	-
16	Dental Materials & Pre-Clinical Dentistry-II	Operative Dentistry	11	46	-	-	-	-
17		Prosthodontics	10		-	-	-	-
18		Science of Dental Materials	25		-	-	-	-
19	PRISME		02	02	-	-	-	-
Total				120	Total	8 OSPE= 72 marks	8 OSVE= 48 marks	120

A large, light blue watermark of the Multan Medical & Dental College logo is centered in the background. It features a circular border with the text 'MULTAN MEDICAL & DENTAL COLLEGE' and a star at the bottom. Inside the circle is a blue and white emblem with the letters 'MMDC' in the center.

LEARNING RESOURCES

Subject	Learning Resources
General Anatomy, Histology & Embryology	1. General Anatomy by Laiq Hussain Siddiqui 7th Edition 2. Medical Histology Text and Atlas by Laiq Hussain Siddique 9th Edition 3. Langman's Medical Embryology 15th Edition 4. Snell's Clinical Anatomy by Regions 11th Edition 5. Snell's Clinical Neuroanatomy 9th Edition
Physiology	6. Guyton & Hall. Textbook of Medical Physiology (14th ed.). 7. Essential Physiology for Dental Students (Essentials (Dentistry)) 1st Edition by Kamran Ali (Editor), Elizabeth Prabhakar (Editor)
Biochemistry	1. Harper's Illustrated Biochemistry (32nd ed.) by Rodwell et al. 2. Lippincott Illustrated Reviews: Biochemistry (8th ed.) by Abali et al.
Oral Biology & Tooth Morphology	1. Nanci, A. (2024). Ten Cate's Oral Histology, Development, Structure, and Function (10th ed.). Elsevier Health Sciences. 2. Fuller, J. L. (4th ed.). Concise Dental Anatomy & Morphology. 3. Nelson, S. J. (2015). Wheeler's Dental Anatomy, Physiology and Occlusion (1st SAE) (for Occlusion).
General Pathology & Microbiology	1. Robbins & Cotran Pathologic Basis of Disease 2. Review of Medical Microbiology and Immunology by Levinson
Community & Preventive Dentistry	1. Textbook of Public Health Dentistry by SS Hermith
Pharmacology & Therapeutics	1. Katzung & Trevor's Pharmacology Examination & Board Review (12th ed.)- Mini 2. Lippincott Illustrated Reviews: Pharmacology (7th ed.)
Oral Pathology	1. Contemporary Oral and Maxillofacial Pathology by Wysocki, Sapp & Eversole 2. Cawson's Essentials of Oral Pathology & Oral Medicine
Operative Dentistry	1. Sturdevant's Art and Science of Operative Dentistry 2. Summitt's Fundamentals of Operative Dentistry
Behavioral Sciences	1. Hand book of Behavioral sciences, by MH Rana, 3rd ed. 2. Humayun A., Herbert M. (2010). Integrating behavioural sciences in healthcare. Islamabad: HEC.
Periodontology	1. Newman and Carranza's Clinical Periodontology (3rd South Asia Edition)
Oral Medicine	1. Tyldesley's Oral Medicine (5th Edition)
Dental Radiology	1. K. Horner, K. A. Eaton's Selection Criteria for Dental Radiography (3rd Edition)
Prosthodontics	1. McCracken's Removable Partial Prosthodontics (13th Edition) 2. Boucher's Prosthodontic Treatment for Edentulous Patients (12th Edition)
Orthodontics	1. Proffit's Contemporary Orthodontics (6th Edition)
Science of Dental Materials	1. Philips Science of Dental Materials (12th Edition) 2. McCabe Applied Dental Materials (15th Edition)