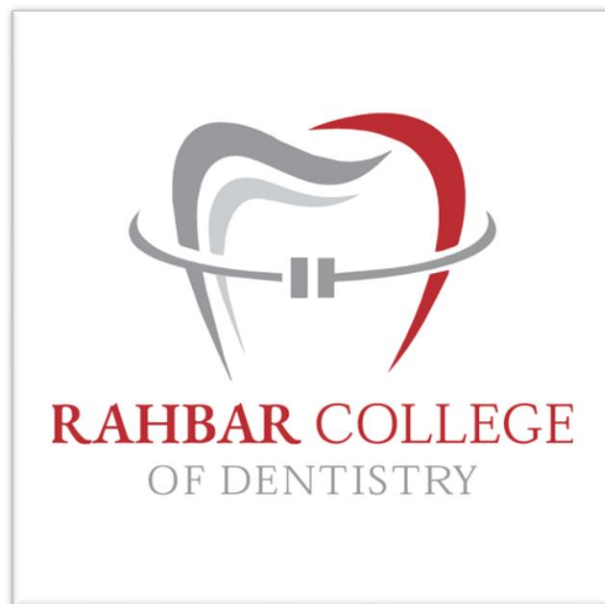




BDS INTEGRATED CURRICULUM
2k25 Version 2.0

2nd Year BDS
Session 25-26

Block-4
Study Guide

Module 11	Module 12	Module 13	Module 14
Cariology II	Community Dentistry & Public Health I	Dental Materials & Pre-Clinical Dentistry I	Hepatorenal

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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 RCoD

Vision Statement:

To be a leading institution, producing globally competent health professionals through multidisciplinary integrated teaching to advance oral healthcare services and tackle local and global challenges with excellence in education, research, and innovation.

Mission Statement:

To train health professional students in an innovative educational environment, through revolutionary dental education, focusing on state-of-the-art clinical skills, patient care, national community health services, global research and technological advancements, to produce competent caregivers and life-long learners.

LIST OF ABBREVIATIONS

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

DEPARTMENT OF DENTAL EDUCATION

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 Dentaria 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

DEPARTMENT OF DENTAL EDUCATION

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

CURRICULUM FRAMEWORK
BDS Integrated Curriculum 2k25
Version 2.0

Year-2
Modules

Block-4

1. Cariology II
2. Community Dentistry & Public Health I
3. Dental Materials & Pre-Clinical Dentistry I
4. Hepatorenal

Block-5

4. Endocrinology
5. Occlusion II
6. Community Dentistry & Public Health II
7. Dental Materials & Pre-Clinical Dentistry II

Block-6

8. Craniofacial III
9. Respiration
10. Dental Materials & Pre-Clinical Dentistry III

PRISME Year 2

Professionalism, Research, Informatics (dental), Social Responsibility, Management/
Entrepreneurship & Evidence based Dentistry

CFRC Year 2

Clinical Foundation Rotation Clerkships

DEPARTMENT OF DENTAL EDUCATION

PRINCIPAL MESSAGE

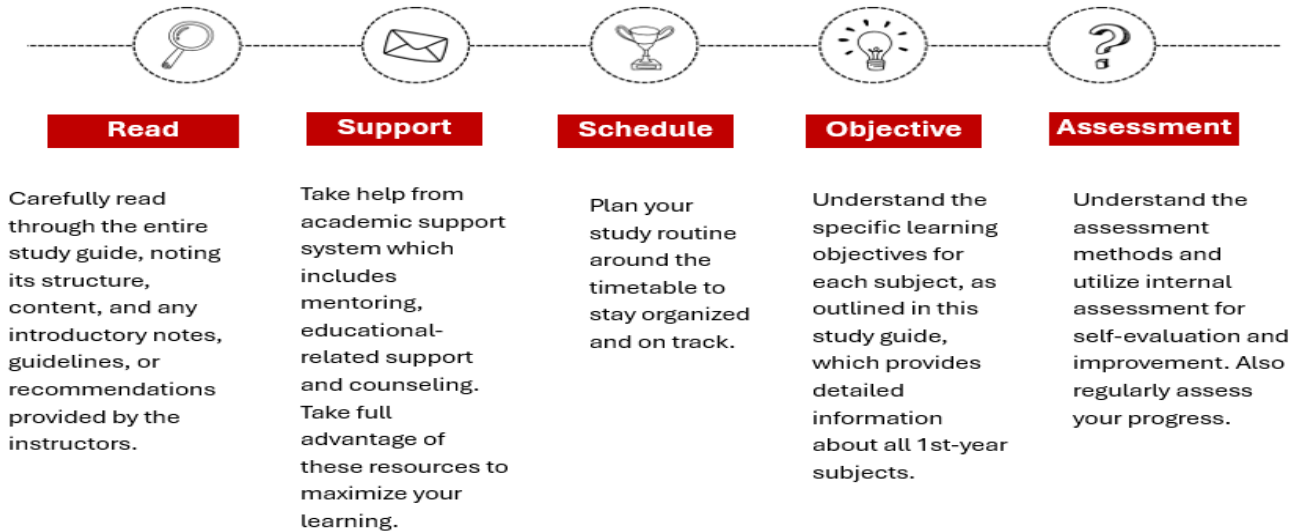


At RCoD, our mission is to create a supportive and innovative learning environment where students can excel academically, professionally, and personally. Through rigorous academic programs, hands-on clinical experiences, and opportunities for cutting-edge research, we empower our students to become compassionate and skilled dental professionals ready to address the diverse needs of our global community.

Beyond educating dental experts, we aim to nurture qualities of compassion, integrity, and a commitment to lifelong learning in our students.

Warm regards
Principal
Rahbar College of Dentistry
Prof. Dr. Muhammad Nasir Saleem

STUDY GUIDE COMPILATION



This study guide has been thoughtfully developed by the Department of Dental Education to support students in their academic learning and examination preparation. Every effort has been made to ensure that the content is comprehensive, accurate, and aligned with the curriculum and learning outcomes. It is intended to serve as a valuable resource for students throughout the academic year.

Prepared. by: Department of Dental Education

Rahbar College of Dentistry

ACADEMIC SCHEDULE BLOCK-4

Block-4 Start Date	11 th May 2026
Block-4 Exam	24 th August – 28 th August 2026
Block-4 Ends Date	28 th August 2026

TIME TABLE

Second year BDS 2k25 Block-4 Time Table									
Rahbar College of Dentistry, Lahore									
Day	8:00 - 8:50am	8:50-09:40am	09:40-10:30am	10:30am -11:20am	11:20am -12:10pm	Break 12:10-12:30pm	12:30 -1:20pm	1:20-2:10pm	2:10-3:00pm
Monday	Community dentistry <i>Interactive lecture</i>	Community dentistry <i>Practical</i>	Oral Biology <i>Practical/ Interactive Lecture</i>	Behavioural Sciences <i>Interactive lecture/Practical</i>	Physiology <i>Interactive lecture</i>	Break	General Pathology <i>Interactive Lecture/Practical</i>	Oral Pathology <i>Practical/ Interactive Lecture</i>	PRISME <i>lecture</i>
Tuesday	Biochemistry <i>Interactive lecture</i>	Operative Dentistry <i>Interactive lecture</i>	Community dentistry <i>Interactive lecture</i>	Biochemistry <i>Practical</i>	Biochemistry/ General Pathology <i>Practical</i>		Community dentistry <i>Interactive lecture</i>	Community dentistry <i>Practical</i>	Oral Medicine <i>Practical/ Interactive Lecture</i>
Wednesday	Dental Materials <i>Interactive lecture</i>	Dental Materials <i>Practical</i>	Pre- Clinical Operative/ Prosthodontics <i>Practical</i>	Pre- Clinical Operative/ Prosthodontics <i>Practical</i>	Pre- Clinical Prosthodontics/ Operative <i>Practical</i>		Biochemistry <i>Interactive Lecture</i>	Behavioural Sciences <i>Interactive lecture/Practical</i>	Research <i>Interactive lecture</i>
Thursday	Behavioural Sciences <i>Interactive lecture</i>	Dental Materials <i>Interactive lecture</i>	Pre- Clinical Operative/ Prosthodontics <i>Practical</i>	Pre- Clinical Prosthodontics/ Operative <i>Practical</i>	Pre- Clinical Prosthodontics/ Operative <i>Practical</i>		CFRC Clinical foundation Rotation clerkships		Behavioural Sciences <i>Practical</i>
Friday	8:00 - 8:50am	8:50-09:40am	09:40-10:30am	10:30am -11:20am	11:20am -12:10pm	12:10- 1:00pm	Break 1:00- 2:00pm	2:00-3:00pm	
	Dental Materials <i>Interactive lecture</i>	Dental Materials <i>Interactive lecture/Practical</i>	Oral Biology <i>Interactive Lecture</i>	Oral Biology <i>Practical</i>	Prosthodontics <i>Interactive lecture</i>	Pharmacology <i>Interactive lecture/ Practical</i>	Break	Integrated Session	
On Tuesday Biochemistry/ General Pathology practical slot . From week 1 to 4 Biochemistry and week 5 onwards General Pathology will be taught.									

Block Coordinators/ Subject in Charges

Coordinators

HOD Community Dentistry/ Year Coordinator	Prof. Dr. Fahad Mehtab Ud Din Dogar
HOD Dental Education	Dr. Saima Norin

Block-4 Subject In-charges

HOD Operative Dentistry/ Principal	Prof. Dr. Muhammad Nasir Saleem
HOD Dental Materials	Prof. Dr. Omair Anjum
HOD Community Dentistry	Prof Dr. Fahad Mehtab Ud Din Dogar
HOD Oral Biology	Prof. Dr. Asad Mehmood
HOD Physiology	Prof. Dr. Saima Rizwan
HOD Biochemistry	Prof. Dr. Afshan Zareen Bilal
HOD Pharmacology	Prof. Dr. Ahmad Alamgir
HOD Oral Pathology	Prof. Dr. M. Behzad Salahuddin
HOD General Pathology	Dr. Maria Noor (Focal Person)
HOD Dental Radiology	Dr. Ehsan Rathore
HoD Operative Dentistry	Prof. Dr . Muhammad Nasir Saleem
HoD. Prosthodontics	Prof Dr. Hina Zafar Raja
HOD Dental Radiology	Dr. Ehsan Rathore
PRISME Domain Professionalism, Social Science Domain Research Domain Management & Entrepreneurship Domain Informatics	Dr Saima Norin Dr. Sadia Imran Cheema Prof Dr. Hina Zafar Raja Prof Dr. Fahad Mehtab Talal Ahmad, Umer Bhatti



Module no. 11

Cariology II



DEPARTMENT OF DENTAL EDUCATION

MODULE RATIONALE

Cariology II builds upon foundational knowledge of tooth morphology and dental caries to develop an integrated understanding of tooth structure, disease processes, and clinical decision-making. The module emphasizes the relationship between anatomical features of teeth and their susceptibility to caries, enabling students to apply morphological knowledge in identifying, diagnosing, and managing dental conditions.

It introduces dental caries as a dynamic, multifactorial process, highlighting the interplay of demineralization and remineralization, and the role of biological, behavioral, and environmental factors. Through the integration of operative dentistry, oral pathology, and dental radiology, students gain a comprehensive understanding of the clinical, histopathological, and radiographic aspects of caries and related tooth surface defects.

The module also focuses on risk assessment, early detection using standardized systems, and the principles of prevention and minimally invasive management. By combining theoretical knowledge with practical skills in tooth identification, carving, and radiographic interpretation, the module prepares students to make informed clinical decisions and to manage carious lesions effectively within both individual and community-oriented contexts.

MODULE OUTCOMES

- Describe and differentiate the morphology of premolars and molars (deciduous and permanent), including crown and root features relevant to identification and clinical practice.
- Recognize anatomical variations and anomalies in tooth structure and explain their clinical implications.
- Correlate pulp morphology with radiographic appearance, particularly in premolars and molars.
- Explain the etiology, classification, and pathogenesis of dental caries, including the processes of demineralization and remineralization.
- Identify and interpret clinical and radiographic features of dental caries, including staging and severity.
- Apply standardized systems (e.g., International Caries Detection and Assessment System (ICDAS) for detection and assessment of carious lesions.
- Differentiate carious lesions from non-carious tooth surface loss and developmental defects, using clinical and radiographic criteria.
- Assess caries risk and categorize patients into risk groups to support clinical decision-making.
- Outline preventive and minimally invasive management strategies for dental caries.
- Interpret conventional radiographs to evaluate carious lesions and their progression.

Demonstrate practical skills in tooth morphology (drawing, identification, carving) and recognition of carious lesions in clinical and radiographic settings.

SUBJECTS INTEGRATED IN THE MODULE

- Oral Biology & Tooth Morphology
- Operative Dentistry
- Oral Pathology
- Oral Medicine / Dental Radiology

Theory

Oral Biology & Tooth Morphology

Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
Car2-OB001	Describe the general considerations and morphological features of maxillary premolars, including their labial, lingual, mesial, distal, and occlusal aspects, as well as root morphology.	Morphology of Premolars	ILGD/SGD	MCQs & SEQs
Car2-OB001	Describe the general considerations and morphological features of mandibular premolars, including their labial, lingual, mesial, distal, and occlusal aspects, as well as root morphology.	Morphology of Premolars	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
Car2-OB001	Differentiate maxillary from mandibular premolars using key identification criteria such as cusp morphology, root anatomy, and occlusal patterns.	Morphology of Premolars	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
Car2-OB002	Identify and explain variations and anomalies in crown and root morphology of premolars.	Anomalies of Premolars	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
Car2-OB003	Explain and analyze the number, shape, and anatomical variations of pulp canals and pulp chambers in premolars, with reference to radiographic appearances.	Pulp Morphology & Radiographic Correlation	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
Car2-OB004	Describe the general considerations and detailed morphology of the labial, lingual, mesial, distal, occlusal aspects, and root structure of permanent maxillary molars.	Morphology of Permanent Maxillary Molars	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs

Theory

Oral Biology & Tooth Morphology

Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
Car2-OB005	Describe the general considerations and detailed morphology of the labial, lingual, mesial, distal, occlusal aspects, and root structure of permanent mandibular molars.	Morphology of Permanent Mandibular Molars	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs & SEQs
Car2-OB006	Enlist and compare key identification features of maxillary deciduous & permanent molars based on cusp pattern, crown outline, and root configuration.	Comparison of Deciduous & Permanent Molars (Maxillary)	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs & SEQs
Car2-OB007	Enlist and compare key identification features of deciduous & permanent mandibular molars based on cusp pattern, crown outline, and root configuration.	Comparison of Deciduous & Permanent Molars (Mandibular)	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs & SEQs
Car2-OB008	Enlist morphological anomalies in the crown and root of deciduous and permanent molars.	Molar Morphological Anomalies	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs & SEQs
Car2-OB009	Explain and analyze the number, shape, and anatomical variations of pulp canals and pulp chambers in deciduous & permanent molars, with reference to radiographic appearances.	Pulp Morphology and Radiographic Correlation (Molars)	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs

Operative Dentistry

Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
Car2-OD001	Discuss the etiology of dental caries.	Dental Caries	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs & SEQs
Car2-OD002	Classify dental caries based on site, severity, and activity.	Classification of Dental Caries	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs & SEQs
Car2-OD003	Describe the dynamic process of demineralization and remineralization in the development of caries.	Demineralization and Remineralization	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs & SEQs
Car2-OD004	Discuss the clinical characteristics of dental caries.	Clinical Characteristics of Dental Caries	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
Car2-OD005	Explain the radiographic appearance of dental caries.	Caries' Radiographic Appearance	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
Car2-OD006	Discuss prevention of caries using medical model.	Caries Prevention	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
Car2-OD007	Outline minimally invasive and operative approaches to caries management.	Caries Management	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
Car2-OD008	Explain the criteria used to classify adult and pediatric patients into high, moderate, or low caries risk based on clinical findings, caries history, and relevant risk factors.	Caries Risk Assessment	Interactive Lecture, Large Group Discussion (LGD), Flipped classroom	MCQs
Car2-OD008	Describe principles of caries risk assessment and their role in clinical decision-making.	Caries Risk Assessment	Interactive Lecture, Large Group Discussion (LGD)	MCQs

Oral Pathology				
Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
Car2-OP-001	Define dental caries and outline its initiation in enamel.	Zones of Caries	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
Car2-OP-001	List and identify zones of enamel caries & histological images.	Zones of Caries	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs & SEQs
Car2-OP-001	List the zones of dentin caries.	Zones of Caries	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs & SEQs
Car2-OP-001	Outline the progression of caries from enamel to dentin.	Zones of Caries	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs & SEQs
Car2-OP-002	Explain standardized systems (ICDAS) for the detection and clinical evaluation of carious lesions and pulp health status.	Caries Detection and Diagnosis	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs & SEQs
Car2-OP-003	Evaluate the etiology and contributing factors of non-carious cervical and enamel lesions, including erosion, abrasion, attrition, abfraction and molar–incisor hypomineralization (MIH).	Tooth Surface Loss and Enamel Defects	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
Car2-OP-003	Identify and differentiate enamel and dentin defects (hypoplasia, amelogenesis imperfecta, fluorosis, MIH, erosion, abrasion, attrition, and developmental malformations) based on clinical and radiographic criteria.	Tooth Surface Loss and Enamel Defects	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
Car2-OP-003	Differentiate developmental enamel defects from early carious lesions based on clinical and radiographic	Tooth Surface Loss and Enamel Defects	Interactive Lecture, Large Group	MCQs

Oral Pathology

Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
	findings to prevent unnecessary intervention.		Discussion (LGD)/SGD	
Car2-OP-004	Define pulpitis and give its types.	Pulpitis	Interactive Lecture, Large Group Discussion (LGD)	MCQs
Car2-OP-004	Differentiate between reversible & irreversible pulpitis.	Pulpitis	Interactive Lecture, Large Group Discussion (LGD)	MCQs

Oral Medicine / Dental Radiology

Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
Car2-DR-001	Explain the role of radiographic aids in diagnosing carious lesions and periodontal disease.	Interpretation of Conventional Radiographs	Interactive Lecture, Large Group Discussion (LGD)	MCQs

Practicals / Lab Work

Oral Biology & Tooth Morphology

Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
Car2-OB010	Identify and draw the outlines of all premolars (labial, lingual, mesial, distal, and occlusal aspects) on paper or models, labeling morphological features such as cusps, ridges, fossa,	Premolars	Demonstration, Hands-on Skill Lab / Small Group Practical	OSPE, Viva Voce, Practical Log Book/Checklist

Practicals / Lab Work

Oral Biology & Tooth Morphology

Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
	contact points, roots, and pulp canals.			
Car2-OB010	Accurately label all key morphological features (e.g., cusps, marginal ridges, transverse ridges, triangular ridges, developmental depressions, pits, and grooves) on premolar models.	Premolars	Demonstration, Hands-on Skill Lab / Small Group Practical	OSPE, Viva Voce, Practical Log Book/Checklist
Car2-OB010	Carve anatomical models of premolars using soap blocks/wax blocks.	Premolars	Demonstration, Hands-on Skill Lab / Small Group Practical	OSPE, Viva Voce, Practical Log Book/Checklist
Car2-OB011	Identify and draw the outlines of all permanent molars (labial, lingual, mesial, distal, and occlusal aspects) on paper or models, labeling their key features, including oblique ridges and root anatomy.	Molars	Demonstration, Hands-on Skill Lab / Small Group Practical	OSPE, Viva Voce, Practical Log Book/Checklist
Car2-OB011	Identify and draw the outlines of deciduous molars.	Molars	Demonstration, Hands-on Skill Lab / Small Group Practical	OSPE, Viva Voce, Practical Log Book/Checklist
Car2-OB011	Accurately label all key morphological features (cusp names, cusp ridges, marginal ridges, transverse ridges, triangular ridges, fossa, developmental depressions, contact points, name of roots/pulp canals, etc.) on molar models.	Molars	Demonstration, Hands-on Skill Lab / Small Group Practical	OSPE, Viva Voce, Practical Log Book/Checklist
Car2-OB011	Carve anatomical models of molars using soap blocks/wax blocks.	Molars	Demonstration, Hands-on Skill Lab / Small Group Practical	OSPE, Viva Voce, Practical Log Book/Checklist

Operative Dentistry

Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
Car2-OD009	Identify clinical characteristics of dental caries in a clinical setup.	Dental Caries	Demonstration, Hands-on Skill Lab / Small Group Practical	OSPE, Viva Voce, Practical Log Book/Checklist
Car2-OD010	Identify various classes of carious lesions using images.	Dental Caries	Demonstration, Hands-on Skill Lab / Small Group Practical	OSPE, Viva Voce, Practical Log Book/Checklist

Oral Medicine / Dental Radiology

Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
Car2-DR002	Determine the radiographic severity of carious lesions on radiographic images.	Radiographic Caries Interpretation	Demonstration, Hands-on Skill Lab / Small Group Practical	OSPE, Viva Voce, Practical Log Book/Checklist
Car2-DR-003	Assess and interpret radiographs to determine the depth and severity of carious lesions.	Radiographic Caries Interpretation	Demonstration, Hands-on Skill Lab / Small Group Practical	OSPE, Viva Voce, Practical Log Book/Checklist



Module no.12

Community Dentistry & Public Health I



DEPARTMENT OF DENTAL EDUCATION

MODULE RATIONALE

Community Dentistry and Public Health I introduces the principles of population-based oral health care, emphasizing prevention, health promotion, and the role of social and behavioral determinants in oral health. The module develops students' understanding of epidemiology, screening, and basic biostatistics for assessing community oral health needs and planning preventive strategies. Integration of behavioral sciences enables patient-centered communication and holistic care. The module prepares students to link clinical practice with public health approaches to reduce oral disease burden and inequalities.

MODULE OUTCOMES

- Explain principles of dental public health and the role of oral health at individual and population levels.
- Analyze oral diseases as public health problems, including their determinants, distribution, and inequalities.
- Apply epidemiological concepts and study designs to understand, investigate, and interpret oral health data.
- Calculate and interpret basic biostatistical measures, including measures of central tendency, dispersion, probability, and normal distribution.
- Differentiate and apply appropriate statistical tests (parametric and non-parametric) based on data type and research context.
- Explain and apply screening principles, including Wilson and Jungner criteria and characteristics of ideal screening tests.
- Plan and evaluate oral health surveys and preventive programs using appropriate indices and methodologies.
- Apply oral health indices (e.g., DMFT, CPI) in assessing disease burden at community level.
- Explain disease causation and risk factors using models such as the epidemiological triad and common risk factor approach.
- Evaluate preventive strategies for major oral diseases including periodontal disease and oral cancer.
- Integrate behavioral science principles (biopsychosocial model, stress, personality, illness behavior) into dental care.
- Demonstrate effective communication and behavior management skills tailored to patient needs, including anxious and vulnerable individuals.
- Apply ethical and professional responsibilities, including safeguarding and patient-centered decision-making.
- Conduct basic community-based oral health assessment activities and interpret findings for planning interventions.

SUBJECTS INTEGRATED IN THE MODULE

- Community & Preventive Dentistry
- Behavioral Sciences

Theory

Community & Preventive Dentistry

Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
CDPH1-CD-001	Describe the principles and scope of Dental Public Health and its role in promoting community oral health.	Introduction to Dental Public Health	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
CDPH1-CD-002	Explain how individual dental care contributes to population-level oral health outcomes.	Concept of Oral Health and Disease	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
CDPH1-CD-003	Explain the criteria used to identify oral conditions that constitute public health problems.	Oral Conditions as Public Health Problems	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
CDPH1-CD-004	Compare professional and layperson perspectives of health, disease, and illness.	Concepts of Health and Illness	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
CDPH1-CD-005	Explain the iceberg phenomenon and its relevance to subclinical oral diseases.	Epidemiological Concepts	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
CDPH1-CD-006	Explain the common risk factor approach and apply it to preventive oral health planning.	Risk Factors and Prevention Strategies	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
CDPH1-CD-007	Describe the major patterns and social determinants	Social Determinants of Health	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs

Theory

Community & Preventive Dentistry

Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
	contributing to oral health inequalities.			
CDPH1-CD-008	Analyze socioeconomic, behavioral, and environmental causes of oral health inequalities.	Health Inequalities	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
CDPH1-CD-009	Differentiate between high-risk, population, and common risk factor prevention strategies.	Prevention Approaches in Oral Health	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
CDPH1-CD-010	Evaluate the suitability of preventive strategies for different oral health contexts.	Planning Preventive Programs	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
CDPH1-CD-011	Explain the principles and applications of screening in oral health programs.	Screening in Dental Public Health	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
CDPH1-CD-012	Explain Wilson and Jungner criteria and evaluate their application in screening programs for oral diseases.	Screening Evaluation	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
CDPH1-CD-013	List and explain the desirable properties of an ideal screening test.	Screening Tests	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
CDPH1-CD-014	Differentiate between screening and diagnostic tests based on purpose and methodology.	Screening vs Diagnosis	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs

Theory

Community & Preventive Dentistry

Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
CDPH1-CD-015	Define epidemiology and explain its role in understanding oral disease distribution.	Introduction to Epidemiology	Interactive Lecture, Large Group Discussion (LGD)	MCQs
CDPH1-CD-016	Explain the applications of epidemiology in planning and evaluating dental services.	Epidemiology and Oral Health Services	Interactive Lecture, Large Group Discussion (LGD)	MCQs
CDPH1-CD-017	Classify epidemiological studies and describe their design and use in oral health research.	Epidemiological Study Designs	Interactive Lecture, Large Group Discussion (LGD)	MCQs
CDPH1-CD-018	Explain the fundamental framework of an epidemiological study applicable to dental public health.	Study Planning and Design	Interactive Lecture, Flipped classroom, Large Group Discussion (LGD)	MCQs
CDPH1-CD-019	Analyze how epidemiological findings guide preventive and clinical dental practices.	Application of Epidemiology	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
CDPH1-CD-020	Define bias and confounding and explain their influence on study validity.	Research Validity	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
CDPH1-CD-021	Explain techniques such as randomization and blinding and their role in minimizing bias in research studies.	Research Methodology	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
CDPH1-CD-022	Compare epidemiological, screening, and clinical	Integrated Disease Control Approaches	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs

Theory				
Community & Preventive Dentistry				
Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
	approaches to oral disease management.			
CDPH1-CD-023	Explain how epidemiological and screening principles can be applied in clinical and community dental care.	Application to Practice	Interactive Lecture, Large Group Discussion (LGD)	MCQs
CDPH1-CD-024	Differentiate and calculate prevalence and incidence rates to interpret oral health trends.	Epidemiological Measurements	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
CDPH1-CD-025	Classify and describe different types of oral health surveys.	Oral Health Surveys	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
CDPH1-CD-025	Explain the standardized steps involved in designing and conducting a simple oral health survey.	Oral Health Surveys	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
CDPH1-CD-026	Describe data types, variables, statistical methods, sampling techniques, and present findings graphically.	Data Handling and Presentation	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
CDPH1-CD-027	Define range, variance, mean deviation, and standard deviation as measures of data.	Research Dynamics	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
CDPH1-CD-028	Define probability and explain its application in dental research and data interpretation.	Research Dynamics	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs

DEPARTMENT OF DENTAL EDUCATION

Theory

Community & Preventive Dentistry

Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
CDPH1-CD-029	Interpret and calculate key descriptive measures of data, including central tendency and dispersion.	Hypothesis Testing & Presentation of Data	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
CDPH1-CD-030	Correlate standard deviation with mean and the concept of normal distribution.	Parametric and Non-Parametric Tests	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs & SEQs (Modular Written Exam)
CDPH1-CD-031	Define and explain normal distribution (bell curve) and its characteristics; explain the importance of normal distribution in research as well as on choice of tests of significance.	Parametric and Non-Parametric Tests	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs & SEQs (Modular Written Exam)
CDPH1-CD-031	Differentiate between parametric and non-parametric tests and select appropriate tests of significance (t-test, Chi-square test, and their alternatives) based on data type and distribution.	Parametric and Non-Parametric Tests	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs & SEQs (Modular Written Exam)
CDPH1-CD-032	Differentiate skewness and kurtosis types.	Skewness and Kurtosis	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
CDPH1-CD-033	Explain the cause-and-effect relationships underlying major oral diseases.	Disease Causation	Interactive Lecture, Large Group Discussion (LGD)	MCQs
CDPH1-CD-034	Define and classify oral health indices used in epidemiological studies.	Oral Health Indices	Interactive Lecture, Large Group Discussion (LGD)	MCQs

Theory

Community & Preventive Dentistry

Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
CDPH1-CD-035	Describe prevalence, distribution, and risk factors of periodontal diseases.	Periodontal Epidemiology	Interactive Lecture, Large Group Discussion (LGD)	MCQs
CDPH1-CD-036	Identify etiological factors and explain the triad of host, agent, and environment in periodontal disease.	Etiological Triads	Interactive Lecture, Large Group Discussion (LGD)	MCQs
CDPH1-CD-037	Evaluate preventive strategies for reducing the incidence of periodontal disease.	Periodontal Disease Prevention	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs
CDPH1-CD-038	Explain the key components and strategies for planning oral health promotion programs aimed at preventing periodontal disease.	Health Promotion	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
CDPH1-CD-039	Explain etiological triads and contributing risk factors for oral cancer.	Oral Cancer Etiology	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
CDPH1-CD-040	Identify and implement preventive strategies for oral cancer in clinical settings.	Oral Cancer Prevention	Interactive Lecture, Large Group Discussion (LGD)	MCQs
CDPH1-CD-041	Design community-based oral cancer prevention programs using public health approaches.	Community Prevention Programs	Interactive Lecture, Large Group Discussion (LGD)	MCQs

Behavioral Sciences

Behavioral Sciences				
Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
CDPH1-BhS-001	Explain and apply the biopsychosocial model in dental patient care.	Biopsychosocial Model	Interactive Lecture, Small Group Discussion (SGD), Case-Based Discussion	MCQs/SEQs, Reflective Write-up
CDPH1-BhS-002	Describe psychological development stages (Piaget, Erikson, Freud) and their relevance to patient behaviour in dental settings.	Human Development	Interactive Lecture, Small Group Discussion (SGD), Case-Based Discussion	MCQs/SEQs, Reflective Write-up
CDPH1-BhS-003	Explain how personality traits influence patient reactions to oral health challenges and stress in a dental setting.	Personality	Interactive Lecture, Small Group Discussion (SGD), Case-Based Discussion	MCQs/SEQs, Reflective Write-up
CDPH1-BhS-004	Describe patient stress responses and explain how coping mechanisms influence behaviour and cooperation in dental settings.	Patient Stress & Coping	Interactive Lecture, Small Group Discussion (SGD), Case-Based Discussion	MCQs/SEQs, Reflective Write-up
CDPH1-BhS-005	Identify illness behaviour patterns in dental patients and apply appropriate management strategies.	Illness Behaviour	Interactive Lecture, Small Group Discussion (SGD), Case-Based Discussion	MCQs/SEQs, Reflective Write-up
CDPH1-BhS-006	Define dental anxiety and phobia and explain their impact on patient attendance, treatment compliance, and oral health outcomes.	Dental Anxiety -- Foundation	Interactive Lecture, Small Group Discussion (SGD), Case-Based Discussion	MCQs/SEQs, Reflective Write-up
CDPH1-BhS-007	Describe the stages of grief and identify psychological	Grief -- Stages	Interactive Lecture, Small Group Discussion (SGD),	MCQs/SEQs, Reflective Write-up

Behavioral Sciences				
Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
	responses to dental-related loss.		Case-Based Discussion	
CDPH1-BhS-007	Apply supportive communication strategies for patients experiencing grief or dental-related emotional distress.	Grief -- Communication	Interactive Lecture, Small Group Discussion (SGD), Case-Based Discussion	MCQs/SEQs, Reflective Write-up
CDPH1-BhS-008	Recognize signs of domestic violence, abuse, and self-harm presenting in the dental setting.	Safeguarding -- Recognition	Interactive Lecture, Small Group Discussion (SGD), Case-Based Discussion	MCQs/SEQs, Reflective Write-up
CDPH1-BhS-008	Outline legal responsibilities and appropriate intervention pathways when domestic violence or self-harm is suspected.	Safeguarding -- Responsibilities	Interactive Lecture, Small Group Discussion (SGD), Case-Based Discussion	MCQs/SEQs, Reflective Write-up
CDPH1-BhS-009	Explain evidence-based methods of patient reassurance and emotional support and describe their impact on treatment outcomes.	Reassurance & Emotional Support	Interactive Lecture, Small Group Discussion (SGD), Case-Based Discussion	MCQs/SEQs, Reflective Write-up

Practicals / Lab Work

Community & Preventive Dentistry

Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
CDPH1-CD-042	Practise DMFT, CPI scoring on typodonts/models/case scenarios.	Indices Recording (DMFT, CPI)	Demonstration, Hands-on Skill Lab / Small Group Practical	OSPE, Viva Voce, Practical Log Book/Checklist
CDPH1-CD-042	Learn how to record indices and simple epidemiological measures.	Indices Recording (DMFT, CPI)	Demonstration, Hands-on Skill Lab / Small Group Practical	OSPE, Viva Voce, Practical Log Book/Checklist
CDPH1-CD-043	Calculate mean, range, variance, and standard deviation using small datasets provided.	Basic Biostatistics	Demonstration, Hands-on Skill Lab / Small Group Practical	OSPE, Viva Voce, Practical Log Book/Checklist
CDPH1-CD-044	Interpret sample histograms and differentiate normal, skewed, and kurtotic distributions.	Skewness & Kurtosis	Demonstration, Hands-on Skill Lab / Small Group Practical	OSPE, Viva Voce, Practical Log Book/Checklist
CDPH1-CD-045	Perform basic dental screening by applying the principles of screening, using the Wilson and Jungner criteria and features of ideal screening tests.	Dental Screening	Demonstration, Hands-on Skill Lab / Small Group Practical	OSPE, Viva Voce, Practical Log Book/Checklist
CDPH1-CD-045	Distinguish screening findings from diagnostic assessments.	Dental Screening	Demonstration, Hands-on Skill Lab / Small Group Practical	OSPE, Viva Voce, Practical Log Book/Checklist
CDPH1-CD-046	Conduct a community-based oral health assessment by performing dental history taking, clinical examination, and DMFT index recording	Community Visit 1: Dental Caries Assessment Activity	Field Visit / Community-Based Activity	Field Log Book, Viva, Report Evaluation

Practicals / Lab Work

Community & Preventive Dentistry

Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
	using WHO Oral Health Assessment Form.			

Behavioral Sciences

Behavioral Sciences

Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
CDPH1-BhS-010	Demonstrate communication with paediatric, adolescent, and adult patients based on developmental stage.	Age-Specific Communication	Role Play with Simulated Patient, Small Group Session	OSCE Station, Structured Viva, Direct Observation Checklist
CDPH1-BhS-011	Perform behaviour management using Tell-Show-Do with a simulated anxious paediatric patient.	Tell-Show-Do Technique	Role Play with Simulated Patient, Small Group Session	OSCE Station, Structured Viva, Direct Observation Checklist
CDPH1-BhS-012	Demonstrate empathetic, patient-centred communication, apply empathy skills effectively, and provide structured psychological support to a distressed patient.	Empathetic & Supportive Communication	Role Play with Simulated Patient, Small Group Session	OSCE Station, Structured Viva, Direct Observation Checklist
CDPH1-BhS-012	Explain a dental procedure to a patient with low health literacy using simple language.	Empathetic & Supportive Communication	Role Play with Simulated Patient, Small Group Session	OSCE Station, Structured Viva, Direct Observation Checklist

Behavioral Sciences				
Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
CDPH1-BhS-013	Apply shared decision-making in a simulated treatment planning discussion.	Shared Decision-Making	Role Play with Simulated Patient, Small Group Session	OSCE Station, Structured Viva, Direct Observation Checklist
CDPH1-BhS-014	Resolve interpersonal conflicts in a dental practice setting ensuring patient safety and team harmony.	Conflict Resolution	Role Play with Simulated Patient, Small Group Session	OSCE Station, Structured Viva, Direct Observation Checklist
CDPH1-BhS-015	Demonstrate structured emotional support and empathetic communication with a simulated patient experiencing dental-related grief or distress.	Grief Support -- Applied	Role Play with Simulated Patient, Small Group Session	OSCE Station, Structured Viva, Direct Observation Checklist



Module no.13

DENTAL MATERIALS &PRE- CLINICAL DENTISTRY-1



DEPARTMENT OF DENTAL EDUCATION

MODULE RATIONALE

Dental Materials and Preclinical Dentistry I introduces the fundamental principles governing the properties, manipulation, and clinical application of dental materials, alongside essential preclinical skills in prosthodontics and operative dentistry. The module emphasizes the relationship between material science and clinical performance, enabling students to select and handle materials appropriately. Through simulation-based training, students develop foundational skills in impression making, model fabrication, tooth preparation, and removable prosthesis construction. The module prepares students for safe, effective, and evidence-based clinical practice.

MODULE OUTCOMES

- Explain the fundamental physical, mechanical, chemical, and biological properties of dental materials and relate them to clinical performance.
- Describe the structure of matter and principles of adhesion relevant to dental materials.
- Classify dental materials based on composition, properties, and clinical applications.
- Explain biocompatibility, toxicity, and safety considerations in the use of dental materials.
- Describe the composition, properties, manipulation, and clinical uses of gypsum and impression materials.
- Analyze factors affecting accuracy, dimensional stability, and performance of dental materials and impressions.
- Apply infection control principles in handling dental materials and impressions.
- Explain the principles and classification of prosthodontics, including Kennedy's classification and Applegate's rules.
- Identify components and principles of removable partial dentures, including retention and support.
- Explain principles of tooth preparation, including outline, resistance, retention, and convenience forms.
- Recognize dental instruments and describe their functions, including safe use of rotary instruments.
- Explain and apply isolation techniques, including rubber dam placement and its clinical significance.
- Demonstrate manipulation of dental materials, including gypsum and impression materials, in laboratory settings.
- Perform preclinical prosthodontic procedures, including clasp fabrication, wax-up, articulation, flasking, dewaxing, and denture processing.
- Demonstrate basic operative skills, including instrument handling, isolation, and ergonomic positioning.
- Apply principles of accuracy, precision, and infection control during all preclinical procedures.

SUBJECTS INTEGRATED IN THE MODULE

- Science of Dental Materials

- Pre-clinical Operative Dentistry
- Pre-clinical Prosthodontics

Theory				
Science of Dental Materials				
Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
DMPD1-DM-001	Define and differentiate the key physical properties of dental materials including density, thermal conductivity, coefficient of thermal expansion, solubility and optical and mechanical properties.	General Principles of Dental Materials	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
DMPD1-DM-001	Interpret and label a stress-strain curve to determine various mechanical and physical properties.	General Principles of Dental Materials	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs & SEQs
DMPD1-DM-001	Describe the fundamental physio-mechanical, biological, and chemical principles that determine the clinical behavior and performance of dental materials.	General Principles of Dental Materials	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
DMPD1-DM-002	Elaborate the structure of matter and explain the fundamental principles of adhesion among dental materials.	Structure of Matter and Adhesion	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
DMPD1-DM-003	Classify dental materials according to types, materials & uses.	Classification of Dental Materials	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs

Theory				
Science of Dental Materials				
Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
DMPD1-DM-004	Describe the concepts of safety and biocompatibility in dental biomaterials.	Biocompatibility and Safety	Interactive Lecture, Large Group Discussion (LGD)	MCQs
DMPD1-DM-005	Define key biological terms related to dental materials, including biocompatibility and hypersensitivity.	Biological Considerations	Interactive Lecture, Large Group Discussion (LGD)	MCQs
DMPD1-DM-005	Discuss the effects of toxicity and corrosion and their influence on the biological performance of dental materials.	Biological Considerations	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
DMPD1-DM-006	Define cast and die materials.	Gypsum Products, Model Fabrication and Die Materials	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
DMPD1-DM-006	Define gypsum and identify various gypsum products used in dentistry.	Gypsum Products, Model Fabrication and Die Materials	Interactive Lecture, Large Group Discussion (LGD)	MCQs
DMPD1-DM-006	Describe the composition, hydration reaction, and crystal formation process of gypsum products.	Gypsum Products, Model Fabrication and Die Materials	Interactive Lecture, Large Group Discussion (LGD)	MCQs
DMPD1-DM-006	Classify gypsum products according to their composition and intended use in dental procedures.	Gypsum Products, Model Fabrication and Die Materials	Interactive Lecture, Large Group Discussion (LGD)	MCQs
DMPD1-DM-006	Discuss the ideal physical and mechanical properties, setting expansion, and setting time of gypsum products.	Gypsum Products, Model Fabrication and Die Materials	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs

Theory

Science of Dental Materials

Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
DMPD1-DM-006	Demonstrate or describe the correct proportioning, mixing, pouring, and trimming techniques for gypsum materials.	Gypsum Products, Model Fabrication and Die Materials	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
DMPD1-DM-006	Identify and explain factors that influence the setting time, expansion, and strength of gypsum materials.	Gypsum Products, Model Fabrication and Die Materials	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs (Modular Written Exam)
DMPD1-DM-006	Explain infection control measures and safety precautions during the pouring and handling of impressions and models.	Gypsum Products, Model Fabrication and Die Materials	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
DMPD1-DM-006	Analyze common causes of air bubbles, inaccuracies, and fractures in gypsum models and propose preventive measures.	Gypsum Products, Model Fabrication and Die Materials	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs & SEQs
DMPD1-DM-006	List the advantages and disadvantages of gypsum and enumerate miscellaneous types of die materials.	Gypsum Products, Model Fabrication and Die Materials	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs
DMPD1-DM-007	Classify impression materials used in dentistry according to setting mechanism and clinical use.	Impression Materials	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs
DMPD1-DM-007	Describe the ideal properties and characteristics of impression materials.	Impression Materials	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs
DMPD1-DM-007	Compare the advantages, disadvantages, and clinical indications of different impression materials.	Impression Materials	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs

Theory

Science of Dental Materials

Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
DMPD1-DM-007	Analyze the factors that affect the dimensional accuracy and surface detail of dental impressions.	Impression Materials	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs
DMPD1-DM-008	Describe methods for disinfecting and storing dental impressions to prevent distortion and cross-infection.	Infection Control	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs
DMPD1-DM-009	Describe the composition, setting mechanism, and classification of hydrocolloid impression materials.	Hydrocolloid Impression Materials	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs
DMPD1-DM-009	Explain the clinical steps for mixing, loading, and inserting hydrocolloid impression materials.	Hydrocolloid Impression Materials	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs
DMPD1-DM-010	Identify and classify non-elastic impression materials and discuss their composition, properties, setting reactions and uses.	Non-Elastic Impression Materials	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs
DMPD1-DM-010	Evaluate the advantages and disadvantages of non-elastic impression materials.	Non-Elastic Impression Materials	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs
DMPD1-DM-010	Describe and differentiate between mucostatic and mucocompressive techniques for complete denture impressions.	Non-Elastic Impression Materials	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs

Pre-Clinical Prosthodontics

Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
DMPD1-PD-001	Define Prosthodontics.	Overview of Prosthodontics and Its Branches	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs
DMPD1-PD-001	Comprehend various terminologies used in prosthodontics.	Overview of Prosthodontics and Its Branches	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs
DMPD1-PD-001	Comprehend the role of prosthodontics in oral rehabilitation.	Overview of Prosthodontics and Its Branches	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs
DMPD1-PD-001	Differentiate among major branches of Prosthodontics.	Overview of Prosthodontics and Its Branches	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs
DMPD1-PD-002	Identify Kennedy's Classes I–IV.	Kennedy's Classification of Partial Edentulism	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs
DMPD1-PD-002	Comprehend different modifications of Kennedy's classification.	Kennedy's Classification of Partial Edentulism	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs
DMPD1-PD-003	Apply Applegate's Rules governing the Kennedy's Classification.	Applegate's Rules	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs
DMPD1-PD-003	Differentiate between tooth-bounded and free-end saddle areas.	Applegate's Rules	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs
DMPD1-PD-004	Identify different types of removable prosthesis used for replacement of missing teeth.	Interim Partial Denture	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs
DMPD1-PD-004	Identify components of interim partial denture (types of teeth, retainer and denture base).	Interim Partial Denture	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs

Pre-Clinical Prosthodontics

Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
DMPD1-PD-004	Comprehend the significance of components of interim partial denture.	Interim Partial Denture	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs
DMPD1-PD-005	Define Retention.	Interim Partial Denture -- Retention	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs
DMPD1-PD-005	Comprehend different principles of retention used in prosthodontics.	Interim Partial Denture -- Retention	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs
DMPD1-PD-005	Define Retainer and identify its different types for interim/acrylic partial denture.	Interim Partial Denture -- Retention	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs
DMPD1-PD-005	Comprehend properties of stainless-steel wrought alloy clasp material and its application in removable partial denture.	Interim Partial Denture -- Retention	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs

Operative Dentistry

Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
DMPD1-OD-001	Recognize different instruments used in tooth preparation.	Instruments and Armamentarium	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs
DMPD1-OD-001	Describe their functions.	Instruments and Armamentarium	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs
DMPD1-OD-001	Differentiate between hand and rotary instruments.	Instruments and Armamentarium	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs

Operative Dentistry				
Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
DMPD1-OD-001	Discuss the hazards of rotary instruments.	Instruments and Armamentarium	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs
DMPD1-OD-002	Explain the importance of isolation in dental procedures, including its role in moisture control, visibility, infection control, and treatment success.	Isolation	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs
DMPD1-OD-002	Enlist components of rubber dam.	Isolation	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs
DMPD1-OD-002	Outline stepwise procedure for application of rubber dam.	Isolation	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs
DMPD1-OD-003	Discuss the principles of cavity preparation, including outline form, resistance form, retention form, and convenience form in ensuring the longevity and effectiveness of restorative treatments.	Fundamentals of Tooth Preparations	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs

Practicals / Lab Work

Science of Dental Materials

Practicals / Lab Work				
Science of Dental Materials				
Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
DMPD1-DM-011	Demonstrate and perform techniques for manipulation of hydrocolloid impression materials.	Impression Materials	Demonstration, Hands-on Skill Lab / Small Group Practical	OSPE, Viva Voce, Practical Log Book/Checklist
DMPD1-DM-011	Demonstrate the mixing of alginate ensuring correct water-to-powder ratio giving accurate consistency and setting time.	Impression Materials	Demonstration, Hands-on Skill Lab / Small Group Practical	OSPE, Viva Voce, Practical Log Book/Checklist
DMPD1-DM-012	Demonstrate the softening technique of the impression compound using a water bath without overheating the material.	Non-Elastic Impression Materials	Demonstration, Hands-on Skill Lab / Small Group Practical	OSPE, Viva Voce, Practical Log Book/Checklist
DMPD1-DM-013	Manipulate soft/hard plaster in the correct water/powder ratio to obtain a homogenous mix fit for model/die pouring.	Gypsum	Demonstration, Hands-on Skill Lab / Small Group Practical	OSPE, Viva Voce, Practical Log Book/Checklist
DMPD1-DM-013	Build a plaster slab following the allocated dimensional guidelines.	Gypsum	Demonstration, Hands-on Skill Lab / Small Group Practical	OSPE, Viva Voce, Practical Log Book/Checklist
DMPD1-DM-013	Demonstrate the technique of model pouring.	Gypsum	Demonstration, Hands-on Skill Lab / Small Group Practical	OSPE, Viva Voce, Practical Log Book/Checklist
DMPD1-DM-013	Demonstrate the process of fabricating dental cast/model including trimming and finishing of the study models.	Gypsum	Demonstration, Hands-on Skill Lab / Small Group Practical	OSPE, Viva Voce, Practical Log Book/Checklist

Practicals / Lab Work

Science of Dental Materials

Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
DMPD1-DM-013	Differentiate between study casts, working casts, and refractory casts based on purpose and fabrication.	Gypsum	Demonstration, Hands-on Skill Lab / Small Group Practical	OSPE, Viva Voce, Practical Log Book/Checklist

Pre-Clinical Prosthodontics

Pre-Clinical Prosthodontics

Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
DMPD1-PD-001	Identify and remove specific teeth from a cast to simulate Kennedy's Class III partial denture design.	Kennedy's Classification	Demonstration, Hands-on Skill Lab / Small Group Practical	OSPE, Viva Voce, Practical Log Book/Checklist
DMPD1-PD-001	Identify and classify partially edentulous arches according to Kennedy's classification on casts.	Kennedy's Classification	Demonstration, Hands-on Skill Lab / Small Group Practical	OSPE, Viva Voce, Practical Log Book/Checklist
DMPD1-PD-002	Fabricate a C-clasp for a removable partial denture.	C-Clasp Fabrication	Demonstration, Hands-on Skill Lab / Small Group Practical	OSPE, Viva Voce, Practical Log Book/Checklist
DMPD1-PD-003	Fabricate occlusal rim; perform wax-up; articulate for both upper and lower partial dentures.	Wax-Up and Articulation for Partial Dentures	Demonstration, Hands-on Skill Lab / Small Group Practical	OSPE, Viva Voce, Practical Log Book/Checklist
DMPD1-PD-003	Manipulation of base plate waxes to fabricate occlusal rims of standard dimensions.	Wax-Up and Articulation for Partial Dentures	Demonstration, Hands-on Skill Lab / Small Group Practical	OSPE, Viva Voce, Practical Log Book/Checklist
DMPD1-PD-003	Articulate upper and lower partial dentures.	Wax-Up and Articulation for Partial Dentures	Demonstration, Hands-on Skill Lab / Small Group Practical	OSPE, Viva Voce, Practical Log Book/Checklist

Pre-Clinical Prosthodontics

Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
DMPD1-PD-004	Arrange upper and lower teeth as per the 5 planes (buccolingual, mesiodistal, occlusal plane, ridge relation, and rotational angle).	Dental Setup for Partial Dentures	Demonstration, Hands-on Skill Lab / Small Group Practical	OSPE, Viva Voce, Practical Log Book/Checklist
DMPD1-PD-005	Demonstrate the process of flasking for both upper and lower partial dentures.	Flasking for Partial Dentures	Demonstration, Hands-on Skill Lab / Small Group Practical	OSPE, Viva Voce, Practical Log Book/Checklist
DMPD1-PD-006	Perform dewaxing of flasks accurately while maintaining denture form.	Dewaxing for Partial Dentures	Demonstration, Hands-on Skill Lab / Small Group Practical	OSPE, Viva Voce, Practical Log Book/Checklist
DMPD1-PD-007	Perform packing, curing, and finishing steps for both upper and lower partial dentures.	Packing, Curing, and Finishing of Partial Dentures	Demonstration, Hands-on Skill Lab / Small Group Practical	OSPE, Viva Voce, Practical Log Book/Checklist

Pre-Clinical Operative Dentistry

Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
DMPD1-OD-003	Identify instruments & equipment used in restorative work, their uses & handling.	Instruments and Armamentarium	Demonstration, Hands-on Skill Lab / Small Group Practical	OSPE, Viva Voce, Practical Log Book/Checklist
DMPD1-OD-004	Perform single tooth isolation & quadrant isolation using rubber dam on typodonts in maxillary and mandibular arches.	Rubber Dam Application and Isolation Techniques	Demonstration, Hands-on Skill Lab / Small Group Practical	OSPE, Viva Voce, Practical Log Book/Checklist
DMPD1-OD-005	Perform patient, operator position and instrument exchange.	Clinical Ergonomics	Demonstration, Hands-on Skill Lab / Small Group Practical	OSPE, Viva Voce, Practical Log Book/Checklist



Module no.14

Hepatorenal



DEPARTMENT OF DENTAL EDUCATION

MODULE RATIONALE

This module provides foundational knowledge and basic clinical skills in dental materials, prosthodontics, and operative dentistry, essential for early dental training. It integrates principles of material science, including adhesion, biocompatibility, and manipulation of commonly used materials, with their practical applications in clinical procedures. The module also introduces students to oral rehabilitation concepts, classification of partially edentate arches, and fabrication of interim prostheses, alongside essential operative skills such as identification of instruments, isolation, cavity preparation, and operator positioning. Overall, it aims to develop a strong theoretical base and hands-on competence necessary for safe and effective patient care.

MODULE OUTCOMES

- Explain the structure of matter and fundamental principles of adhesion.
- Describe the biocompatibility and effects of toxicity and corrosion on the biological performance of dental materials.
- Define and classify gypsum products and explain properties. Also demonstrate the mixing of gypsum materials.
- Discuss hydrocolloids and non-elastic impression materials.
- Demonstrate the manipulation of gypsum materials, alginate, impression compound and ZOE.
- Discuss the role of Prosthodontics in oral rehabilitation.
- Classify partially edentate arches for construction of a removable prosthesis.
- Demonstrate the procedure for fabrication of an acrylic interim partial denture.
- Demonstrate the tooth arrangements for acrylic interim partial denture.
- Identify instruments used in operative dentistry and demonstrate proper techniques for isolation and cavity preparation.
- Explain the fundamentals of tooth preparation for restoration of teeth and describe classification of dental caries.
- Perform patient and operator position for restorative procedures.

SUBJECTS INTEGRATED IN THE MODULE

- Physiology
- Biochemistry
- Pharmacology & Therapeutics
- General Pathology & Microbiology
- Oral Medicine
- Behavioral Sciences

Theory

Physiology

Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
HR-P001	Explain the functional anatomy and vascular organization of the liver. Discuss functions of the liver.	Vascular Anatomy and Functional Correlation of the Liver	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs
HR-P001	Differentiate between hemolytic and obstructive jaundice.	Vascular Anatomy and Functional Correlation of the Liver	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs
HR-P001	State the dental relevance of liver disease in coagulation and drug metabolism.	Vascular Anatomy and Functional Correlation of the Liver	Interactive Lecture, Large Group Discussion (LGD)	MCQs
HR-P002	Describe physiological anatomy of the kidney and nephron. Explain physiological anatomy and innervation of the bladder.	Anatomy of Renal System	Interactive Lecture, Large Group Discussion (LGD)	MCQs
HR-P002	Describe the mechanism of micturition and its control.	Anatomy of Renal System	Interactive Lecture, Large Group Discussion (LGD)	MCQs
HR-P003	Explain the processes of glomerular filtration and tubular reabsorption.	Primary Physiological Function of Renal System	Interactive Lecture, Large Group Discussion (LGD)	MCQs
HR-P003	State normal GFR and filtration fraction values; explain determinants of GFR.	Primary Physiological Function of Renal System	Interactive Lecture, Large Group Discussion (LGD)	MCQs
HR-P003	Describe the mechanism of autoregulation of GFR.	Primary Physiological Function of Renal System	Interactive Lecture, Large Group Discussion (LGD)	MCQs
HR-P003	Describe factors affecting GFR.	Primary Physiological Function of Renal System	Interactive Lecture, Large Group Discussion (LGD)	MCQs

Theory

Physiology

Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
HR-P004	Mention proportion of sodium, glucose and water reabsorbed in different parts of nephron.	Secondary Physiological Function of Renal System	Interactive Lecture, Large Group Discussion (LGD)	MCQs
HR-P004	Explain regulation of fluid osmolality by osmoreceptor-ADH mechanism.	Secondary Physiological Function of Renal System	Interactive Lecture, Large Group Discussion (LGD)	MCQs
HR-P005	Discuss normal constituents of urine.	Clinical Relevance of Renal System	Interactive Lecture, Large Group Discussion (LGD)	MCQs
HR-P005	Identify normal values/range of blood urea and serum creatinine.	Clinical Relevance of Renal System	Interactive Lecture, Large Group Discussion (LGD)	MCQs
HR-P005	Differentiate between acute kidney injury and chronic kidney disease.	Patho-Physiology of Renal System	Interactive Lecture, Large Group Discussion (LGD)	MCQs
HR-P005	Enlist causes of hypertension in kidney diseases.	Patho-Physiology of Renal System	Interactive Lecture, Large Group Discussion (LGD)	MCQs
HR-P005	Define nephrotic syndrome, oliguria and anuria.	Patho-Physiology of Renal System	Interactive Lecture, Large Group Discussion (LGD)	MCQs
HR-P005	State the dental relevance of chronic kidney disease.	Patho-Physiology of Renal System	Interactive Lecture, Large Group Discussion (LGD)	MCQs

Biochemistry

Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
HR-Boo1	Differentiate between L-alpha amino acids and alpha-keto acids (carbon skeleton).	Nitrogen Removal from Amino Acids	Interactive Lecture, Large Group Discussion (LGD)	MCQs
HR-Boo1	Enumerate alpha-keto acids of alanine, glutamate, and aspartate.	Nitrogen Removal from Amino Acids	Interactive Lecture, Large Group Discussion (LGD)	MCQs
HR-Boo1	Define transamination and explain its biochemical significance.	Nitrogen Removal from Amino Acids	Interactive Lecture, Large Group Discussion (LGD)	MCQs
HR-Boo1	Describe the reactions catalyzed by alanine aminotransferase (ALT) and aspartate aminotransferase (AST).	Nitrogen Removal from Amino Acids	Interactive Lecture, Large Group Discussion (LGD)	MCQs
HR-Boo1	Discuss the role of pyridoxal phosphate (PLP) in transamination reactions; explain the diagnostic importance of AST and ALT.	Nitrogen Removal from Amino Acids	Interactive Lecture, Large Group Discussion (LGD)	MCQs
HR-Boo1	Define oxidative deamination and outline its physiological significance.	Nitrogen Removal from Amino Acids	Interactive Lecture, Large Group Discussion (LGD)	MCQs
HR-Boo1	Describe the reaction catalyzed by glutamate dehydrogenase (GDH).	Nitrogen Removal from Amino Acids	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs
HR-Boo2	Enlist sources of ammonia. Outline the two major mechanisms for transport of ammonia from peripheral tissues to liver. Enumerate transport forms of ammonia.	Sources and Transport of Ammonia	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs
HR-Boo3	Explain the reactions, regulatory mechanisms, and physiological significance of the urea cycle and state the normal blood urea levels.	Disposal of Amino Groups: Urea Cycle	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs

Biochemistry

Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
HR-Bo04	Describe the normal blood ammonia levels and explain the biochemical basis of ammonia-induced CNS toxicity.	Ammonia Metabolism and Hyperammonemia	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs
HR-Bo04	Enlist inherited & acquired causes of hyperammonemia. Describe the effects of hyperammonemia on the brain.	Ammonia Metabolism and Hyperammonemia	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs
HR-Bo04	Discuss the dietary and pharmacological strategies used in the management of hyperammonemia.	Ammonia Metabolism and Hyperammonemia	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs
HR-Bo05	Briefly describe the metabolism & importance of glutamine in the human body.	Glutamine Metabolism	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs
HR-Bo06	Describe heme degradation and jaundice.	Heme Degradation and Jaundice	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs
HR-Bo07	Interpret elevated ALT and AST values in patient histories to anticipate potential bleeding risks and altered drug metabolism during dental treatment.	Liver Function and Clinical Correlations in Dentistry	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs
HR-Bo08	Explain renal structure–function relationships underlying fluid balance, drug excretion, and homeostasis.	Renal Structure-Function	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs
HR-Bo09	Explain the renal mechanisms involved in hydrogen ion homeostasis.	pH Regulation Mechanisms	Interactive Lecture, Large Group Discussion (LGD)	MCQs & SEQs

Pharmacology & Therapeutics

Pharmacology & Therapeutics				
Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
HR-Ph001	Classify 5 major types of diuretics and relate them to their sites of action.	Diuretics	Interactive Lecture, Large Group Discussion (LGD)	MCQs
HR-Ph001	Describe the major applications and the toxicities of acetazolamide, thiazides, loop diuretics, and potassium-sparing diuretics.	Diuretics	Interactive Lecture, Large Group Discussion (LGD)	MCQs
HR-PH002	Apply dose-modification charts for analgesics, local anesthesia, and common antibiotics in hepatic patients.	Drug Dose Modification in Hepatic Impairment	Interactive Lecture, Large Group Discussion (LGD)	MCQs

General Pathology & Microbiology				
Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
HR-Pa001	Interpret basic liver function tests (ALT, AST, ALP, INR) to assess hepatic function and disease severity.	Liver Function Tests	Interactive Lecture, Large Group Discussion (LGD)	MCQs
HR-Pa002	Explain the mechanisms of hepatic coagulopathies and relate them to increased bleeding risk.	Hepatic Coagulopathies	Interactive Lecture, Large Group Discussion (LGD)	MCQs
HR-Pa003	Explain and compare eGFR, CBC, and related renal function tests in distinguishing acute from chronic kidney disease.	Renal Function Tests	Interactive Lecture, Large Group Discussion (LGD)	MCQs
HR-Pa004	Define and classify types of edema and explain their underlying causes.	Edema -- Types and Mechanisms	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs

General Pathology & Microbiology

Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
HR-PA005	Discuss the viral characteristics and diagnosis of HBV.	Blood Borne Hepatic Infection and Patient Safety / Infection Control	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
HR-PA005	Discuss the viral characteristics and diagnosis of HCV.	Blood Borne Hepatic Infection and Patient Safety / Infection Control	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
HR-PA005	Discuss the window period in the diagnosis of HBV & HCV and its significance in dental surgery.	Blood Borne Hepatic Infection and Patient Safety / Infection Control	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
HR-PA005	Discuss the vaccination of HBV & HCV and its importance for a dental surgeon.	Blood Borne Hepatic Infection and Patient Safety / Infection Control	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
HR-PA006	Discuss the viral characteristics and diagnosis of HAV.	Hepatic Infection and Patient Safety / Infection Control	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
HR-PA006	Discuss the viral characteristics and diagnosis of HDV.	Hepatic Infection and Patient Safety / Infection Control	Interactive Lecture, Large Group Discussion (LGD)	MCQs
HR-PA006	Discuss the viral characteristics and diagnosis of HEV.	Hepatic Infection and Patient Safety / Infection Control	Interactive Lecture, Large Group Discussion (LGD)	MCQs
HR-PA006	Discuss the vaccination of HAV and HEV.	Hepatic Infection and Patient Safety / Infection Control	Interactive Lecture, Large Group Discussion (LGD)	MCQs
HR-PA007	Discuss briefly the life cycle and diseases caused by Entamoeba histolytica.	Entamoeba histolytica	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
HR-PA008	Discuss briefly the life cycle and diseases caused by Echinococcus granulosus.	Echinococcus granulosus	Interactive Lecture, Large Group Discussion (LGD)/CBL	MCQs

General Pathology & Microbiology				
Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
HR-PA009	Discuss briefly the bacteria that cause Urinary Tract Infection.	Urinary Tract Infection (UTI)	Interactive Lecture, Large Group Discussion (LGD)	MCQs
HR-PA010	Discuss briefly the microbial characteristics, disease spectrum, brief diagnosis, and renal infection caused by E. coli, Proteus, Staphylococcus saprophyticus, Klebsiella, and Pseudomonas.	Microorganisms Causing Renal Infections	Interactive Lecture, Large Group Discussion (LGD/SGD)	MCQs

Oral Medicine				
Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
HR-OM001	Explain the oral implications of hepatitis, cirrhosis, and hepatic failure.	Oral Manifestations of Hepatic Diseases	Interactive Lecture, Large Group Discussion (LGD)	MCQs
HR-OM002	Recognize hepatic conditions most relevant to general dental care and their impact on treatment planning.	Dental Considerations in Hepatic Disorders	Interactive Lecture, Large Group Discussion (LGD)	MCQs
HR-OM003	Explain the principles of post-exposure prophylaxis (PEP) for Hepatitis B and Hepatitis C.	Infection Control and Post-Exposure Prophylaxis for Hepatitis	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
HR-OM004	Interpret lab findings (CBC, RFTs -- urea, creatinine, bleeding time, PT, APTT & INR) to plan dental treatment for acute and chronic renal conditions.	Laboratory Interpretation and Dental Management in Renal Disorders	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
HR-OM005	Describe the risk factors for patients undergoing renal dialysis associated with the oral cavity.	Oral Health Considerations in Renal Dialysis Patients	Interactive Lecture, Large Group Discussion (LGD)	MCQs

Oral Medicine				
Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
HR-OM006	Identify oral soft-tissue changes associated with hepatic disease and correlate them with underlying cholestatic mechanisms.	Oral Manifestations of Liver Disease	Interactive Lecture, Large Group Discussion (LGD)	MCQs
HR-OM007	Interpret urea and creatinine levels and apply findings to modify dental treatment plans.	Dental Management in Renal Disease	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs
HR-OM008	Describe and relate the systemic and oral manifestations of CKD, nephrotic syndrome, and dialysis dependency.	Oral Manifestations of Renal Disease	Interactive Lecture, Large Group Discussion (LGD)/SGD	MCQs

Behavioral Sciences				
Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
HR-BhS-001	Explain the principles for communicating diagnoses, treatment modifications, and infection-control measures to patients with hepatic disease in a clear, non-stigmatizing manner.	Communication	Interactive Lecture, Small Group Discussion (SGD), Case-Based Discussion	MCQs/SEQs, Reflective Write-up
HR-BhS-002	Explain the OARS motivational interviewing (MI) micro-skills and describe how they can be applied to improve patient adherence to liver and kidney health recommendations.	Motivational Interviewing Skills	Interactive Lecture, Small Group Discussion (SGD), Case-Based Discussion	MCQs/SEQs, Reflective Write-up
HR-BhS-003	Explain the principles and appropriate use of shared-decision tools in developing a bleeding-risk mitigation plan collaboratively with the patient and the physician.	Shared Decision-Making	Interactive Lecture, Small Group Discussion (SGD), Case-Based Discussion	MCQs/SEQs, Reflective Write-up

Behavioral Sciences				
Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
HR-BhS-004	Describe the principles and rationale of anxiety-reduction techniques (such as tell–show–do and paced breathing) used when preparing medically compromised patients for dental procedures.	Anxiety-Reduction Techniques	Interactive Lecture, Small Group Discussion (SGD), Case-Based Discussion	MCQs/SEQs, Reflective Write-up
HR-BhS-005	Discuss ethical dilemmas encountered in pain management for patients with liver disease and explain the rationale for an appropriate, justified prescribing decision.	Ethical Considerations	Interactive Lecture, Small Group Discussion (SGD), Case-Based Discussion	MCQs/SEQs, Reflective Write-up
HR-BhS-006	Describe communication and professionalism challenges encountered in clinical practice and outline a monthly goal to improve one specific aspect.	Reflective Practice	Interactive Lecture, Small Group Discussion (SGD), Case-Based Discussion	MCQs/SEQs, Reflective Write-up
HR-BhS-007	Explain principles of patient-centred communication and shared decision-making.	Principles of Patient-Centred Communication	Interactive Lecture, Small Group Discussion (SGD), Case-Based Discussion	MCQs/SEQs, Reflective Write-up
HR-BhS-008	Explain the principles of patient-centred communication and shared decision-making in the management of individuals with hepatic disease.	Application of Patient-Centred Care	Interactive Lecture, Small Group Discussion (SGD), Case-Based Discussion	MCQs/SEQs, Reflective Write-up
HR-BhS-009	Explain the process of coordinating referrals and follow-up with hepatology services using structured communication templates and shared electronic records.	Interdisciplinary Coordination and Continuity of Care	Interactive Lecture, Small Group Discussion (SGD), Case-Based Discussion	MCQs/SEQs, Reflective Write-up
HR-BhS-010	Explain strategies for providing patient education on prevention and postoperative care using clear, literacy-appropriate written and verbal instructions.	Patient Education and Health Literacy in Dental Practice	Interactive Lecture, Small Group Discussion (SGD), Case-Based Discussion	MCQs/SEQs, Reflective Write-up

Practicals / Lab Work

Biochemistry

Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
HR-Bo10	Estimate blood urea levels using standard biochemical methods and interpret results in relation to renal function.	Estimation of Blood Urea	Demonstration, Hands-on Skill Lab / Small Group Practical	OSPE, Viva Voce, Practical Log Book/Checklist
HR-Bo11	Estimate serum creatinine concentration and interpret findings to assess glomerular filtration efficiency.	Estimation of Serum Creatinine	Demonstration, Hands-on Skill Lab / Small Group Practical	OSPE, Viva Voce, Practical Log Book/Checklist
HR-Bo12	Estimate total and direct serum bilirubin and interpret values to differentiate between hemolytic, hepatic, and obstructive jaundice.	Estimation of Total and Direct Bilirubin	Demonstration, Hands-on Skill Lab / Small Group Practical	OSPE, Viva Voce, Practical Log Book/Checklist

Pharmacology & Therapeutics

Code	Specific Learning Outcome (SLO)	Topic	Mode of Information Transfer	Assessment Method
HR-Ph003	Demonstrate correct prescription writing by accurately completing all components.	Principles and Guidelines of Prescription Writing	Demonstration, Hands-on Skill Lab / Small Group Practical	OSPE, Viva Voce, Practical Log Book/Checklist
HR-Ph004	Perform dose calculations for medications requiring adjustment in renal and hepatic impairment.	Dose Adjustment Strategies in Renal and Hepatic Impairment	Demonstration, Hands-on Skill Lab / Small Group Practical	OSPE, Viva Voce, Practical Log Book/Checklist



DEPARTMENT OF DENTAL EDUCATION

PROFESSIONALISM		
Year	Block	Learning outcomes(Los)
II	IV	Demonstrate respect, integrity, accountability in group/clinical tasks/social media.
		Apply professionalism in simulated patient interactions
		Write structured reflections on professional experiences
		Demonstrate patient-centered communication in structured interviews
		Discuss simple ethical dilemmas

RESEARCH		
Year	Block	Learning Outcomes (LOs)
II	IV	Formulate research questions (PICO/PECO)
		Select an appropriate research title
		Develop basic literature search strategy (databases, keywords)
		Conduct literature search in PubMed/Google Scholar
		Summarize research findings using a literature matrix
		Explain purpose and steps of a literature review
		Conduct a simple literature review on a selected topic
		Formulate clear, measurable research objectives for oral health research projects.
		Interpret and calculate various measures of data
		Correlate standard deviation with mean and the concept of normal distribution

INFORMATICS		
Year	Block	Learning Outcomes (LOs)

II	IV	Search academic databases & journals online
		Use Word advanced features & Excel basics

SOCIAL RESPONSIBILITY, CULTURAL SENSITIVITY, ETHICS & JURISPRUDENCE

Year	Block	Learning Objectives
II	IV	Practice communication skills with culturally diverse patients through role play
		Apply ethical principles in case-based discussions
		Describe basics of patient rights and informed consent

EVIDENCE BASED DENTISTRY

Year	Block	Learning Objectives
II	IV	Describe and differentiate levels/types of evidence (systematic reviews, RCTs, cohort, case reports) and strengths/limitations



University of Health Sciences
Lahore

**BDS Integrated
Curriculum 2K25**

Version 2.0



C-FRC

Clinical Foundation Rotation Clerkships



PREAMBLE

The aim of dental education is to prepare graduates who can provide safe, effective, and patient-centered oral healthcare. This goal can only be achieved when dental students are holistically trained to deliver standardized patient care, incorporating diagnostic, preventive, and management skills along with effective communication and counseling abilities.

The competencies outlined by the Pakistan Medical and Dental Council (PMDC) for a graduating dentist include:

- Care Provider
- Decision Maker
- Communicator
- Community Leader

These competencies can only be developed through a structured and comprehensive clinical training program. The purpose of this document is to outline the UHS Clinical Clerkship framework for BDS students. This program is designed as a vertically integrated module spanning all four years of dental education.

Recognizing the diversity among dental colleges affiliated with UHS, this framework has been designed with flexibility so that each institution can adapt it to its available resources and clinical settings. We are confident that this step will promote uniformity in clinical training and enhance the overall quality of dental education across UHS-affiliated colleges.



Block IV	
1.	Interpretation of baseline reports Interpret CBC, LFTs, & RFTs reports.

2.	Interpretation of coagulation profile Interpret BT, CT, PT, APTT, and INR reports.
3.	Patient Centered Communication Apply patient-centered communication strategies and shared decision-making when managing medically compromised patients.
4.	Communication in non-stigmatizing language Communicate diagnosis, treatment modifications, and infection-control rationale in a non-stigmatizing manner.
5.	Empathy & emotional intelligence Apply empathy and emotional intelligence in patient interaction role plays.

A Guide/Template for Developing the Logbook for CFRC

Each clinical skill included in this list should have a structured checklist similar to the one provided for handwashing. The checklist outlines the key steps of the procedure and serves as a standardized tool for assessment. Supervisors are required to observe the student performing the skill, mark each step as satisfactory or unsatisfactory, and provide feedback. This ensures uniform evaluation across all departments and helps students progressively achieve clinical competence through repeated, supervised practice. (A detailed book for CFRC, MBBS can be accessed at www.uhs.edu.pk)

Checklist For Handwashing

(Some of the following steps/tasks should be performed simultaneously.)

Step/Task	Cases (minimum 2 entries)
Getting Ready	
Has read the handwashing procedure and understands the 4 moments of hand hygiene: • Before contact with patient and/or their environment • Before performing a clean and/or aseptic procedure • After exposure to blood and/or body fluid • After contact with patient and/or their environment	□ □
Skill/Activity Performed Satisfactorily	□ □
The Procedure	

Wet hands with warm water	☐ ☐
Apply soap and lather thoroughly	☐ ☐
Rub palms, spaces between fingers, backs of hands, and wrists, rubbing vigorously (follow diagram)	☐ ☐
Able to identify how long handwashing procedure should last	☐ ☐
Rinse under running water	☐ ☐
Pat hands dry with paper towel	☐ ☐
Turn off tap with paper towel	☐ ☐
Skill/Activity Performed Satisfactorily	☐ ☐
Signature of Supervisor	
Date Observed	



RAHBAR COLLEGE
OF DENTISTRY

Teaching Methodologies

TEACHING METHODOLOGIES & INSTRUCTIONAL STRATEGIES

Delivery of the BDS Integrated Curriculum 2k25 Version 2.0 requires a diversity of instructional strategies to accommodate different learning styles and to develop cognitive, psychomotor, and affective competencies. In accordance with UHS guidelines, at least three different methods of instruction must be adopted in each Block. The following strategies are recommended and utilised in Block 2.

METHOD OF INSTRUCTION (MIT) – ABBREVIATION KEY

DEPARTMENT OF DENTAL EDUCATION

Abbreviation	Full Form
LGIS	Large Group Interactive Session
SGD	Small Group Discussion
TBL	Team-Based Learning
PBL	Problem-Based Learning
SDL	Self-Directed Learning
CFRC	Clinical Foundation Rotation Clerkship
Demonstration	Laboratory / Clinical Demonstration
Tutorial	Structured Small-Group Tutorial

INSTRUCTIONAL METHOD DESCRIPTIONS

1. Large Group Interactive Session (LGIS)	
Description	LGIS is the primary delivery format for theoretical content in BDS Year 1. Each session runs 50 minutes with an average active attention span of 20–30 minutes, requiring embedded interactive breaks. Sessions incorporate two-way interaction between presenter and students through brainstorming, buzz groups, simulation, case vignettes and targeted questioning. All theory LOs mapped to LGIS/SGD are delivered in this format.
Significance	+ Efficient delivery of large volumes of content to an entire cohort simultaneously + Promotes active involvement through brainstorming and case-based questions + Builds independent thinking and group communication skills + Cost-effective; uses available audiovisual technology + Establishes shared knowledge base before SGD or lab sessions
Facilitator Tips	→ <i>Begin each session with a 2-minute review of previous content</i> → <i>Use 1-minute think-pair-share every 20 minutes to maintain attention</i>

	→ <i>End with exit tickets – one thing learned, one question remaining</i> → <i>Display Bloom's level of each LO at the start of the slide deck</i>
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2. Small Group Discussion (SGD)	
Description	SGD runs concurrently with LGIS as the primary method for LOs coded LGIS/SGD. Groups of 8–12 students discuss pre-assigned trigger questions, clinical vignettes or problem statements under faculty facilitation. SGD is especially used for pharmacology drug-selection scenarios, pathology case discussions and periodontal disease classification exercises in Block 2.
Significance	+ Develops higher-order thinking: analysis, synthesis and evaluation + Encourages peer-to-peer learning and collaborative reasoning + Allows misconceptions to be identified and corrected promptly + Deepens clinical reasoning through case-based discussion + Builds communication and professional skills essential for dentistry
Facilitator Tips	→ <i>Distribute trigger questions 48 hours before the session for preparation</i> → <i>Facilitate, do not lecture – use Socratic questioning</i> → <i>Rotate discussion leadership among students each session</i> → <i>Close with a structured summary linking SGD to LOs and assessment</i>

3. Team-Based Learning (TBL)	
Description	TBL is a structured form of cooperative learning involving four core elements: forming permanent teams of 5–7 students, individual readiness assurance tests (iRAT), team readiness assurance tests (tRAT), team application exercises, and facilitated reporting. In Block 2, TBL is used for Neurosciences sessions on ascending/descending tracts, pharmacodynamics and periodontal disease progression.
Significance	+ Students demonstrate deeper engagement than in traditional lectures + Immediate feedback through iRAT/tRAT identifies knowledge gaps + Teams consistently outperform their best individual members

	+ Students perform better in standardised exams (MCQs, OSPEs) + Develops teamwork and leadership skills essential for clinical settings
Facilitator Tips	→ <i>Ensure teams are formed before the first TBL session with pre-reading assigned</i> → <i>iRAT: 10 questions, 10 minutes; tRAT: same questions, scratch-card format</i> → <i>Application exercises must be clinically relevant to dentistry</i> → <i>Award team points; display leaderboard to motivate participation</i>

4. Problem-Based Learning (PBL)

Description	PBL is a student-centred approach where small groups (7–10) work through a structured clinical problem across multiple sessions. Students define their own learning objectives, self-study, then reconvene to apply knowledge to the problem. In Block 2, PBL triggers include: "A patient presents with tooth sensitivity and radiographic periapical changes" (Foundation-2), "A dental patient develops facial nerve palsy post-extraction" (Craniofacial-2) and "A 45-year-old patient presents with generalised periodontal bone loss" (Module 7).
Significance	+ Promotes self-directed and lifelong learning skills + Integrates knowledge across multiple disciplines simultaneously + Develops critical thinking and evidence appraisal skills + Improves clinical reasoning through authentic problem contexts + Fosters leadership, respect for colleagues' views and presentation skills
Facilitator Tips	→ <i>Tutors must be trained facilitators, not content experts during PBL</i> → <i>Each trigger should map to multiple LOs across at least two subjects</i> → <i>Provide a structured problem template with defined opening and closing sessions</i> → <i>Assess individual and group contributions separately</i>

5. Laboratory Practical / Lab Work

Description	Laboratory practicals in Block 2 cover histology slide identification, Gram staining and microbial techniques, drug dose calculations, dental radiograph interpretation, and drawing/labelling of histological structures. Each session
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	begins with a faculty demonstration followed by independent student practice. Assessment is through OSPE/OSVE stations. Lab LOs are coded with Psychomotor levels P2 (guided response) or P3 (mechanism/precision).
Significance	+ Develops essential psychomotor and observational skills for clinical dentistry + Provides a risk-free environment to practice skills before clinical contact + Reinforces theoretical concepts through direct visual and tactile experience + Develops scientific reasoning and methodical laboratory habits + Direct preparation for OSPE stations in Block examinations
Facilitator Tips	→ <i>Provide pre-lab worksheets with expected observations and diagrams</i> → <i>Demonstrate each technique twice before students attempt independently</i> → <i>Circulate continuously; check Gram stains and diagrams before students submit</i> → <i>Use formative spot-checks: display sample slides and ask students to identify</i>

6. Demonstrations	
Description	The demonstration method involves a faculty member performing a specific clinical or laboratory skill systematically while explaining each step. In Block 2 demonstrations include: sterilization and disinfection of dental instruments, plaque removal and oral hygiene techniques, cranial nerve examination procedures, cadaveric neuroanatomy identification, and radiograph interpretation. Demonstrations precede all practical sessions and are assessed at OSPE/OSVE stations.
Significance	+ Provides a visual and step-by-step model for skill acquisition + Correlates theoretical knowledge with practical application + Sharpens observation skills critical for clinical competency + Sustains interest and motivation in practical sessions + Provides a benchmark for student self-assessment
Facilitator Tips	→ <i>Narrate each step clearly; repeat critical steps a second time in silence</i> → <i>Allow students to ask clarification questions immediately after demonstration</i>

	→ Record demonstrations as short videos for student revision access → Use check-off lists during demonstration to guide student observation
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7. Tutorial	
Description	Tutorials are structured small-group sessions (10–15 students) where a faculty tutor provides intensive guided instruction on a focused topic. Tutorials differ from SGD in that the tutor plays a more directive role. In Block 2, tutorials are used for biochemistry pathways (heme synthesis, RBC metabolism), pharmacokinetics calculations, and neuroanatomy tract tracing. Students submit pre-tutorial self-study questions and tutors provide targeted feedback.
Significance	+ Identifies and corrects individual misconceptions that persist after lectures + Allows personalised academic support and immediate formative feedback + Develops problem-solving skills and practice of self-directed learning + Reduces time to understand complex topics such as pharmacokinetics + Builds confidence in preparation for block examinations
Facilitator Tips	→ Distribute self-study questions one week in advance → Begin with brief MCQ quiz (5 questions) to gauge prior knowledge → Focus tutorial time on areas where most students struggled → End with "muddiest point" card for anonymous feedback to faculty

8. Reflective Writing	
Description	Reflective writing is a metacognitive strategy where students articulate their learning process, identify gaps and plan improvements. In Block 2, reflective writing is integrated within PRISME (Professionalism domain) and Neurosciences sessions. Students submit reflective journals after clinical exposure (CFRC), significant learning events or ethical dilemmas encountered in their studies. Structured reflection frameworks such as Gibbs' Reflective Cycle are used.
Significance	+ Develops critical self-awareness and metacognitive skills

	+ Promotes identification of areas for personal improvement + Builds professional identity and ethical reasoning in dental students + Strengthens response to new clinical and academic challenges + Enhances written communication skills essential for professional practice
Facilitator Tips	→ <i>Introduce a structured reflection framework (e.g. Gibbs, DEAL) in orientation</i> → <i>Provide a reflective writing template with guided prompts</i> → <i>Provide formative written feedback; do not grade solely on style</i> → <i>Share anonymised exemplary reflections to model good practice</i>

9. Self-Directed Learning (SDL)	
Description	SDL is a foundational competency for lifelong professional learning. In Block 2, SDL time is built into the weekly timetable (Friday Integrated Session). Students are provided with learning objectives, recommended resources and self-assessment questions to guide independent study. SDL prepares students for LOs that will be assessed in block examinations and supports deeper engagement with complex topics across all four modules.
Significance	+ Cultivates habits of lifelong learning essential for dental professionals + Allows students to personalise their learning pace and depth + Reinforces prior LGIS content and prepares for SGD/TBL/PBL sessions + Develops information literacy: locating, evaluating and applying evidence + Encourages use of digital learning resources and online databases
Facilitator Tips	→ <i>Provide a curated SDL resource list aligned to each week's LOs</i> → <i>Set 2–3 self-assessment MCQs per SDL week for formative practice</i> → <i>Incorporate SDL-based questions in block examination papers</i> → <i>Encourage use of Anki, Khan Academy Health, PubMed and UHS e-library</i>

10. Clinical Foundation Rotation Clerkship (CFRC)	
Description	CFRC provides first-year BDS students with structured early clinical exposure in a supervised, observation-based format. In Block 2, CFRC activities include:

	infection control and waste management, counselling for caries prevention and temperature recording. Students observe dental procedures, interact with patients under supervision and complete structured observation forms. CFRC is assessed through OSCE stations (9 marks) in the Block examination.
Significance	+ Bridges the gap between basic sciences and clinical dentistry from Year 1 + Develops patient communication, professionalism and clinical empathy + Contextualises theoretical knowledge within the clinical environment + Builds confidence for transition to clinical clerkships in later years + Provides early exposure to infection control and safe clinical practice
Facilitator Tips	→ <i>Brief students comprehensively on observation objectives before each rotation</i> → <i>Pair each student with a clinical supervisor for each CFRC session</i> → <i>Require students to complete structured observation forms after each session</i> → <i>Debrief as a group after CFRC; link observations to relevant Block 2 Los</i>



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Assessment



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 concerned college, 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 the particular 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. (Clinical Exam of Long & Short cases)
- 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 or 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 examination 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 Attendance	Clerkship	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%		
<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 for joining by UHS
<50% Marks/ Absence from Block /Clinical Clerkship Examination	i. Principal of the college may submit record of such students to Department of Medical Education, UHS, seeking permission for conduct of re-sit examination. ii. The conduct of re-sit examination in all cases shall be arranged only after permission from the Competent Authority in the university. iii. 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. iv. 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:

- i.** 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.

ii. 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.

BDS 2 nd Year, BLOCK-04								
Sr. No.	Written Exam				Oral/Practical exam			Total
	Modules	Subjects	No. of MCQs	Total MCQs	Subjects	OSPE/ OSCE (9 marks)	OSVE (6 marks)	
1	Cariology-II	Oral Biology & Tooth Morphology	12	18	Oral Biology & Tooth Morphology	-	01	06
2		Oral Pathology	03		Oral Pathology/ Oral Medicine	-	01	06
3		Operative Dentistry	02		Operative Dentistry	01	01	15
4		Oral Medicine	01		Community & Preventive Dentistry	01	01	15
5	Community Dentistry & Public Health-I	Community & Preventive Dentistry	11	27	Behavioral Sciences	01	01	15
6		Behavioral Sciences	16		Prosthodontics	01	01	15
7	Dental Materials & Pre-Clinical Dentistry-I	Operative Dentistry	10	45	Science of Dental Materials	01	01	15
8		Prosthodontics	10		Biochemistry	-	01	06
9		Science of Dental Materials	25		Pharmacology & Therapeutics	01	-	09
10	Hepatorenal	Physiology	07	28	PRISME	01	-	09
11		Biochemistry	09		CFRC	01	-	09
12		General Pathology & Microbiology	06		-	-	-	-
13		Oral Medicine	01		-	-	-	-
14		Behavioral Sciences	03		-	-	-	-
15		Pharmacology & Therapeutics	02		-	-	-	-
16	PRISME		02	02	-	-	-	-
Total				120	Total	8 OSPE= 72 marks	8 OSVE= 48 marks	120

INTERNAL ASSESSMENT

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

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



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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 Hussan 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)