



DENTAL COLLEGE HITEC-IMS

Study Guide Y2 – B2 - D26

Block-II

Second Year BDS

Coordinator: Dr. AEMAN CHOUDHARY

NUMS VISION

The vision of the National University of Medical Sciences is to improve the quality of life through education, research, innovation, and healthcare, thereby contributing to endeavors to make Pakistan and this world a better place to live in.

INSTITUTIONAL VISION

Leading advancement in Oral & Dental health through excellence in education, patient care and research

INSTITUTIONAL MISSION

To serve the local and global communities by producing competent, ethical, socially responsible, research oriented and lifelong learning oral health care professionals.

PROGRAM OUTCOMES

Code	Outcome Statement (Graduate will be able to...)	Keywords
PO1	Manage common oral diseases using safe and evidence-based practices.	Diagnosis · Treatment · Safety
PO2	Identify patients requiring referral for specialized oral and dental treatment.	Triage · Scope of Practice · Networks
PO3	Advocate preventive measures against common oral and dental disease.	Prevention · Risk Reduction · Health Promotion
PO4	Demonstrate professional, ethical, and culturally appropriate behavior.	Ethics · Altruism · Cultural Sensitivity
PO5	Engage in lifelong learning for continuous professional development.	CPD · Reflective Practice · Growth
PO6	Demonstrate effective verbal and written communication skills.	Counselling · Documentation · Clarity
PO7	Demonstrate basic skills to conduct research on common oral and dental issues.	Research Literacy · Audit · Inquiry
PO8	Work in healthcare teams and provide leadership when required.	Teamwork · Leadership · Collaboration

CURRICULAR ORGANIZATION OF THE BDS PROGRAM

BDS Year 1 (Integrated)	BDS Year 2 (Integrated)	BDS Year 3	BDS Year 4
SUBJECTS			
Anatomy Physiology Biochemistry Oral Biology	Community Dentistry Dental Materials General Pathology Pharmacology Preclinical Operative Dentistry Preclinical Prosthodontics	General Surgery General Medicine Periodontology Oral Medicine Oral Pathology Oral & Maxillofacial Surgery Operative dentistry Prosthodontics	Operative Dentistry & Endodontics Pediatric Dentistry Prosthodontics Oral & Maxillofacial Surgery Orthodontics
Pakistan Studies and Islamiat Fahimul Quran			
Clinical Photography Videography, Expository Writing	EOTO ICT		
LONGITUDINAL THREADS			
Behavioural Sciences			
Research/ICT			

BLOCK COMMITTEE

Block coordinator: **Assistant Professor Dr. Aeman Choudhary, Pharmacology Department.**
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S. No	Name	Designation	Departments	Email ID
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5.	Dr. Sharaz Ahmed	Assistant Professor	Preclinical Operative	sharazahmed.dental@hitec-ims.edu.pk
6.	Dr. Sameen Zahra	Assistant Professor	Preclinical Prosthodontics	sameenzahra.dental@hitec-ims.edu.pk
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8.	Miss Amna Fayyaz	Clinical Psychologist	Behavioral Sciences	amnafayyaz.dental@hitec-ims.edu.pk
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10.	Aali Nawazish	Student	CR, 2 nd Year	bds.24.25.0336@hitec-ims.edu.pk

BLOCKS ORGANIZATION BDS YEAR II

SPIRAL - I

Dental Rehabilitation						
Blocks	BLOCK-I 11+1= 12 weeks		BLOCK II 12+1 = 13 Weeks		BLOCK-III 10+1 = 11 Weeks	
Duration	06 weeks	04 weeks	06 weeks	06 weeks	06 weeks	06 weeks
Modules	Dental Health	Dental Cariology	Oral disease Management I	Oral disease Management II	Medical and dental health care	Evidence based rehabilitation

SPIRAL- II

Basis of Medicine II						
Blocks	BLOCK-I 11+1= 12 weeks		BLOCK-II 11+1= 12 weeks		BLOCK-III 09+1= 10 weeks	
Duration	06 weeks	06 weeks	04 weeks	06 Weeks	04 Weeks	06 Weeks
Modules	Foundation II	Infectious Diseases	Hemodynamics	Hematology	Neurology	Multisystem

ACADEMIC CALENDER YEAR II

SECOND YEAR BDS SESSION 2026			
BLOCK - 1 (11+1 = 12 WEEKS)			
13 th April 2026 to 7 th August 2026			
Activity	Duration	From	To
Academics	11 weeks	13 th April 2026	31 st July 2026
Sports week	01 week	13 th April 2026	18 th April 2026
Eid ul Azha	01 week	26 th May 2026	29 th May 2026
Summer vacations	03 week	19 th June 2026	12 th July 2026
Block exam	1 week	3 rd August 2026	7 th August 2026
BLOCK - 2 (11+1 = 12Weeks)			
10 th August 2026 to 30 th October 2026			
Academics	11 weeks	10 th August 2026	23 rd October 2026
Block Assessment	01 week	26 th October 2026	30 th October 2026
BLOCK - 3 (9+1 = 10 Weeks)			
26 th October 2026 to 6 th January 2027			
Academics	9 weeks	2 nd November 2026	1 st January 2027
Block Assessment	1 week	4 th January 2027	7 th January 2027
SENDUP/PRE PROF EXAM (03 Weeks)			
Pre Send-Up leave	01 week	8 th January 2027	17 th January 2027
Send-Up	03 weeks	18 th January 2027	4 th February 2027
Pre-Prof Leave	05 weeks	5 th February 2027	14 th March 2027
2 nd Professional Exam (Tentative)	15 th March 2027 as proposed by NUMS		

ALIGNMENT OF COURSE OUTCOMES WITH PROGRAM OUTCOMES (POs)

Integrated Block Outcome (IBO)	Mapped Program Outcome (PO)	Rationale
Correlate the management of general pathological and community-based diseases in subsequent years of training and practice	PO1, PO2, PO3, PO4, PO8	Provides students with an integrated understanding of disease mechanisms, diagnosis, prevention, and management, enabling them to apply biomedical knowledge, clinical reasoning, and evidence-based decision-making in patient care and community health.
Correlate the basic properties of auxiliary and restorative materials with their application in laboratory and clinical conditions (spiral integration)	PO1, PO3, PO7	Develops the ability to select and apply appropriate dental materials by integrating material science with laboratory and clinical practice, promoting evidence-based and safe restorative procedures.
Explain the use of instruments in restorative work with specific relevance to caries	PO1, PO4	Equips students with the knowledge of restorative instruments and their clinical applications in caries management, ensuring safe, effective, and patient-centered dental treatment.
Integrate concepts of sociology, anthropology, and psychology with ethical, medical, and dental practice	PO4, PO6, PO8	Promotes holistic, ethical, and culturally sensitive patient care by integrating behavioral and social sciences into clinical practice, enhancing professionalism, communication, and community engagement.
Apply a constructivist approach to developing academic writing skills along with biostatistics	PO5, PO6, PO7	Strengthens research literacy, critical thinking, academic communication, and statistical interpretation, enabling students to produce evidence-based scientific work and engage in lifelong learning.

TEACHING AND LEARNING METHODOLOGIES

The following teaching/ learning methods are used to promote better understanding:

Educational Opportunities

Hospital Wards
Dental Clinics

Practical

Basic medical sciences practical related to Anatomy, Biochemistry, and Physiology are scheduled for firsthand learning of skills

Large Group Interactive Sessions - LGIS

In large group, the lecturer introduces a topic or common clinical condition and explains the underlying phenomena through questions, pictures, videos of patient's interviews, exercises, etc. Students are actively involved in the learning process.

Case-Based Learning - CBL

This is a small group discussion format where learning is focused around a series of questions based on a clinical scenario. Students discuss and answer the questions applying relevant knowledge gained in clinical and basic health sciences during the block.

Self-Directed Study - SDL

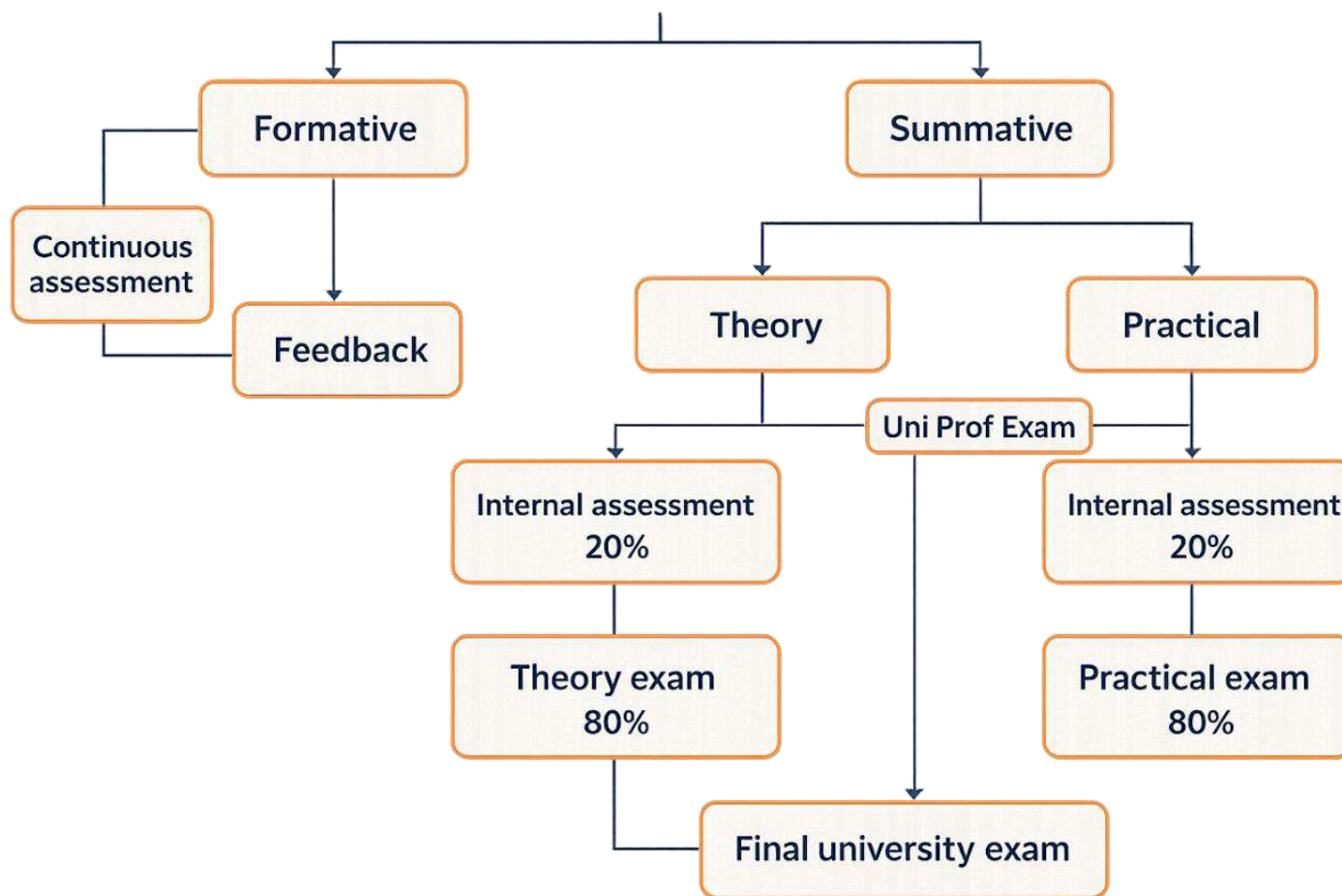
Students assume responsibilities of their own learning through individual study, sharing and discussing with peers, seeking information from Learning Resource Center, teachers and resource persons within and outside the college. Students will be provided time within the scheduled college hours for self-study.

Small Group Discussion - SGD

This format helps students to clarify concepts, acquired skills, attitudes and achieve objectives for that particular session. Sessions are structured with the help of specific exercises such as patient case, interviews or discussion topics. Students exchange opinions and apply knowledge gained from lectures, tutorials and self-study. The facilitator's role is to ask probing questions, summarize, or rephrase to help clarify and correlate integrated concepts.

ASSESSMENT MAP

Assessment Map



TENTATIVE TEST SCHEDULE

Table 11.1: Tentative test schedule for block II.

S.No	Subject	Topics of tests	Date	Assessment Tool
1.	Dental Materials	Dental composite	19-08-2026	SAQs, MCQs
		Dental Adhesion	26-08-2026	SAQs, MCQs
		Endodontic material	02-09-2026	SAQs, MCQs
		Synthetic polymers	09-09-2026	SAQs, MCQs
		Denture base polymers, denture lining material	16-09-2026	SAQs, MCQs
		Artificial teeth	23-09-2026	SAQs, MCQs
		Impression material I	28-09-2026	SAQs, MCQs
		Impression material II	07-10-2026	SAQs, MCQs
2.	Community Dentistry	Epidemiology and prevention of periodontal disease	26-8-2026	SAQs, MCQs
		Screening	15-9-2026	SAQs, MCQs
		Health education and promotion	5-10-2026	SAQs, MCQs
3.	Pharmacology	Intro to ANS, Parasympathomimetics I, II	17-08-2026	SAQs, MCQs
		Parasympatholytic, Sympathomimetics	24-08-2026	SAQs, MCQs
		Sympatholytic, Diuretics I	31-08-2026	SAQs, MCQs
		Diuretics II, Anti-hypertensive drugs	07-09-2026	SAQs, MCQs
		Anti- arrhythmic drugs, Antianginal drugs I	14-09-2026	SAQs, MCQs
		Antianginal drugs I, Drugs used in heart failure	21-09-2026	SAQs, MCQs
		Drugs used in coagulation disorders	28-09-2026	SAQs, MCQs
		Sulfonamides, Anti-malarial drugs	05-10-2026	SAQs, MCQs
		Ant amoebic drugs, Drugs used in APD	12-10-2026	SAQs, MCQs
		Antidiarrheal drugs, Laxatives/ Purgatives	19-10-2026	SAQs, MCQs
4.	General Pathology	Haemodynamic Disorders	28-08-2026	MCQs, SAQs
		Gram negative Bacilli	08-09-2026	SAQs, MCQs
		Haematological disorders/Immunological Disorders	22-09-2026	MCQs
		Parasitology	20-10-2026	MCQs, SAQs
5.	Preclinical Operative Dentistry	Matrix and Retainer system, Pulp protecting agents	23-10-2026	MCQs, SAQs
6.	Preclinical Prosthodontics	Occlusion of complete denture, Lab procedures	16-10-2026	MCQs, SAQs

STRUCTURED SUMMARY – BLOCK II

Term Code	Y2-B2-D26
Term Title	Practice Based Learning
Duration Of Term	12 weeks
Important Dates	10th August 2026 to 30th October 2026
Horizontally Integrated Themes	Pharmacology, General Pathology, Dental Materials, Community Dentistry, Prosthodontics, and Operative Dentistry.
Vertically Integrated Themes	Prosthodontics, Operative Dentistry, General Medicine, General Surgery, Periodontology, Oral Pathology, Oral Biology
First Spiral	Dental Materials, Community Dentistry, Prosthodontics, and Operative Dentistry.
Second Spiral	Pharmacology, General Pathology
Prerequisite Blocks	1 st Block Second Year

INTRODUCTION TO THE BLOCK II

Block II is designed to provide second-year BDS students with an integrated foundation in the medical sciences and their application to dental rehabilitation and clinical practice. It aims to develop students' understanding of systemic diseases, their underlying pathophysiology, and their relevance to oral health and dental care.

The block encompasses key areas, including **Infectious Diseases, Hemodynamics, Haematology, Neurology, Multisystem Disorders, Dental Cariology, Oral Disease Management, Medical and Dental Health Care, and Evidence-Based Rehabilitation**. Collectively, these areas establish an integrated framework for understanding the interrelationship between systemic and oral health and its implications for comprehensive patient care.

The block employs a **spiral integration approach** to promote the progressive acquisition, reinforcement, and application of knowledge across disciplines. The **First Spiral** integrates **Dental Materials, Community Dentistry, Prosthodontics, and Operative Dentistry**, while the **Second Spiral** integrates **Pharmacology and General Pathology**. This approach enables students to build upon previously acquired knowledge and progressively apply it to more complex biomedical and clinical concepts.

The block is delivered through a combination of **interactive lectures, practical sessions, small-group discussions, case-based learning, and self-directed learning**. It is aligned with the **PMDC Competency-Based Undergraduate Dental Curriculum** and the institution's **Program Outcomes**, thereby providing a structured foundation for subsequent clinical training.

This study guide is intended to facilitate structured and purposeful learning by outlining the relevant learning objectives, key concepts, and expected learning outcomes. Students are encouraged to integrate knowledge across disciplines, apply evidence-based principles, and develop the clinical reasoning skills necessary for effective, safe, and patient-centred dental practice.

By the end of Block II, students will be expected to demonstrate an integrated understanding of systemic and oral diseases, identify their clinical implications, and apply appropriate principles of prevention, diagnosis, and management within the context of comprehensive dental care.

Goodluck students

SECOND YEAR BDS • BLOCK II

STUDY GUIDE VISUAL ICONS & INTEGRATION BOXES

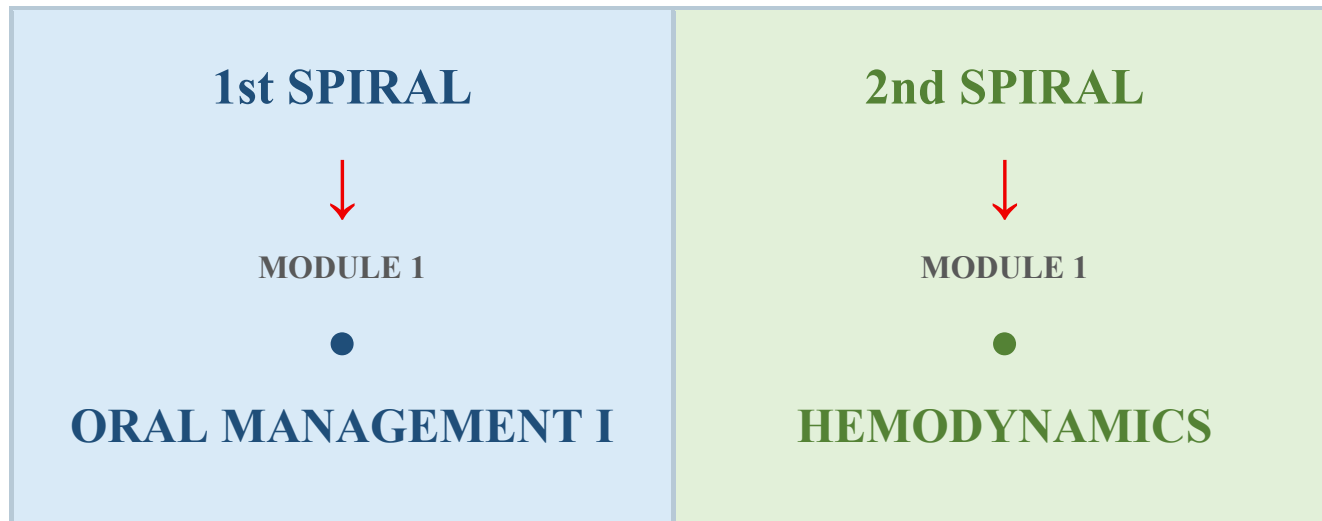
Reusable template for consistent formatting throughout the study guide

TABLE 1. ICONS USED IN THE STUDY GUIDE

ICON	USED FOR	DESCRIPTION
	SPIRAL	Identifies the 1st Spiral or 2nd Spiral.
	MODULE	Identifies the module within a spiral.
	LEARNING OBJECTIVES	Shows the learning objectives / learning outcomes for the session.
	LEARNING RESOURCES	Indicates textbooks, reference books and other learning resources.
	INTEGRATION	Shows horizontal or vertical integration between disciplines, topics or modules.
	PRACTICAL / CLINICAL	Identifies practical, laboratory, pre-clinical or clinical activities.
	ASSESSMENT	Identifies MCQs, SAQs, EMQs, OSPE and other assessment activities.
	BASIC PRACTICALS	Identifies research activities, student projects or research-related learning.

SECOND YEAR BDS – BLOCK II

SPIRAL-WISE MODULE-I ORGANIZATION

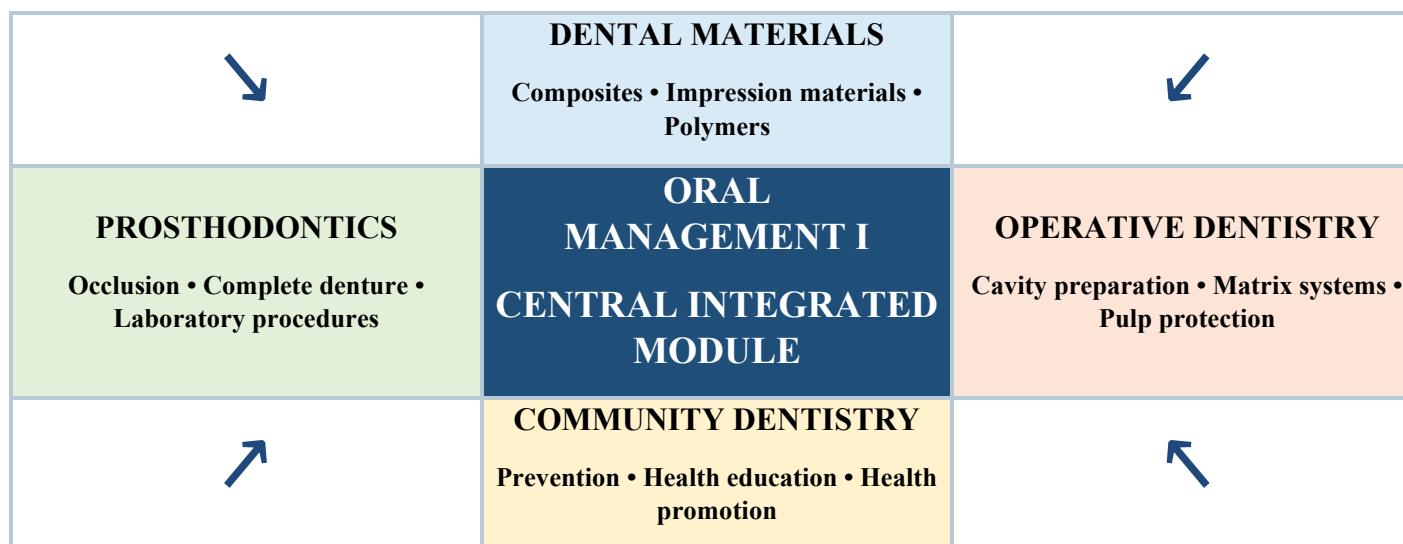


Integrated Block II • Module 1 of each Spiral

SPIRAL - I

ORAL MANAGEMENT I

Integrated learning across dental disciplines



INTEGRATION OF KNOWLEDGE • SKILLS • CLINICAL APPLICATION

KNOWLEDGE	SKILLS	CLINICAL APPLICATION
Connects material science, restorative principles, prosthodontics and community oral health.	Promotes coordinated pre-clinical and practical learning across dental disciplines.	Builds the foundation for comprehensive, patient-centered dental care.

Second Year BDS • Block II

DENTAL MATERIALS

TOPIC

LEARNING OBJECTIVES

Session 1 <i>Introduction to topics of dental materials in block 2</i>		Mode of Delivery: <i>LGIS</i>
 You should be able to	• Develop an orientation on the topics to be covered in block 02	
Session – 2,3 &4 in integration with Operative Dentistry <i>Composites</i>		Mode of Delivery: <i>SGDs, LGIS, CBL</i>
 You should be able to	• Classify Composite Restorative Materials. • Understand the properties of the Composite Restorative Material • Understand the polymerization shrinkage in resin-based composites • Identify factors affecting polymerization shrinkage • Describe methods to control polymerization shrinkage • Discuss the properties of different components of restorative composites.	

	• Compare the characteristics and clinical applications for composite restorative materials • Describe finishing and polishing procedures for restorative composites • Explain the biocompatibility issue related to restorative composites • Describe the recent advances in restorative composites • Describe the steps of placement of resin based composites.	
Session – 5& 6 <i>Adhesion & Bonding</i>		Mode of Delivery: <i>LGIS, SGDs, CBL</i>
 You should be able to	• Infer the concept of bonding and adhesion in dentistry • Appraise the significance of enamel and dentine bonding • Describe various generations of bonding • Compare the development of the smear layer and hybrid layer • Describe the acid-etch technique and dentin bonding	
Session –7, 8 <i>Endodontic materials</i>		Mode of Delivery: <i>Interactive LGIS, SGDs</i>
 You should be able to	• Classify endodontic materials based on their function, irrigants, medicaments, obturating materials and sealers.	

Total no of weeks.	Mode of Assessment
04	MCQs, SAQs

COMMUNITY DENTISTRY

TOPIC	LEARNING OBJECTIVES
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Session – 1 in integration with Periodontology <i>Epidemiology of Periodontal Disease</i>		Mode of Delivery: <i>LGIS</i>
 You should be able to	• Define periodontal disease • Describe the epidemiological triad of periodontal disease • Explain the prevalence of periodontal diseases in Pakistan and their associated factors • Discuss briefly the clinical features of gingivitis and periodontitis	
Session – 2 <i>Indices Used for Periodontal Diseases</i>		Mode of Delivery: <i>LGIS</i>

 You should be able to	● Identify the index teeth to be examined ● Discuss the scoring criteria of oral indices ● Describe the nominal scale for interpretation of oral indices
Session – 3 <i>Plaque, OHI-S PHP Indices</i>	Mode of Delivery: <i>LGIS</i>
 You should be able to	● Define the PI index, PHP index and OHI-S index *Describe the procedure to determine the score of PI, PHP and OHI-S indices
Session – 4 <i>GI and SBI Indices</i>	Mode of Delivery: <i>LGIS & SGD</i>
 You should be able to	● Define gingival index ● Explain gingival index & Scoring criteria ● Describe the nominal scale for interpretation of the gingival index score
Session – 5 <i>PI, PDI Indices</i>	Mode of Delivery: <i>LGIS</i>

 You should be able to	● Define the Russell's PI index and PDI ● Explain the procedure to measure Russell's periodontal index and PDI ● Describe the scoring criteria of Russell's index and PDI ● Explain the nominal scale for the interpretation of Russell's index and PDI
Session – 6 <i>CPITN</i>	Mode of Delivery: <i>LGIS</i>
 You should be able to	● Define CPITN Index ● Identify instruments used for its measurement ● Explain the procedure to measure the score CPITN index ● Discuss the scoring criteria of the CPITN index
Session – 7 <i>Prevention of Periodontal Disease</i>	Mode of Delivery: <i>LGIS</i>
 You should be able to	● Discuss the prevention of periodontal disease at different levels

Total no of weeks.	Mode of Assessment
06	MCQs, SAQs

PROSTHODONTICS

TOPIC	LEARNING OBJECTIVES
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Session – 1 in integration with orthodontics <i>Basics Of Occlusion</i>		Mode of Delivery: <i>LGIS, SGD's</i>
 You should be able to	• Define dental occlusion • Differentiate between Overjet and Overbite • Differentiate between occlusion and articulation • Describe Class I canine relationship • Describe Class I molar relationship	
Session – 2 <i>Occlusion For Complete Denture</i>		Mode of Delivery: <i>LGIS</i>
 You should be able to	• Enumerate the objectives of establishing occlusion • Differentiate between natural and artificial occlusion • Name the different types of complete denture occlusal schemes • Describe the factors affecting bilateral balanced occlusion	
Session – 3 <i>Arrangement of teeth</i>		Mode of Delivery: <i>Interactive Lectures</i>



You should be able to

- Describe the steps of anterior tooth setup in detail
- Describe Class I canine relationship
- Describe steps of posterior tooth setup Describe Class I molar relationship
- Describe the compensating curves involved in tooth setup

Total no of weeks.	Mode of Assessment
06	MCQs, SAQs

OPERATIVE DENTISTRY

TOPIC	LEARNING OBJECTIVES
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Session – 1, 2 in integration with Oral Biology <i>Cavity Preparation for Class II Amalgam Restoration</i>	Mode of Delivery: <i>LGIS, SGD's</i>
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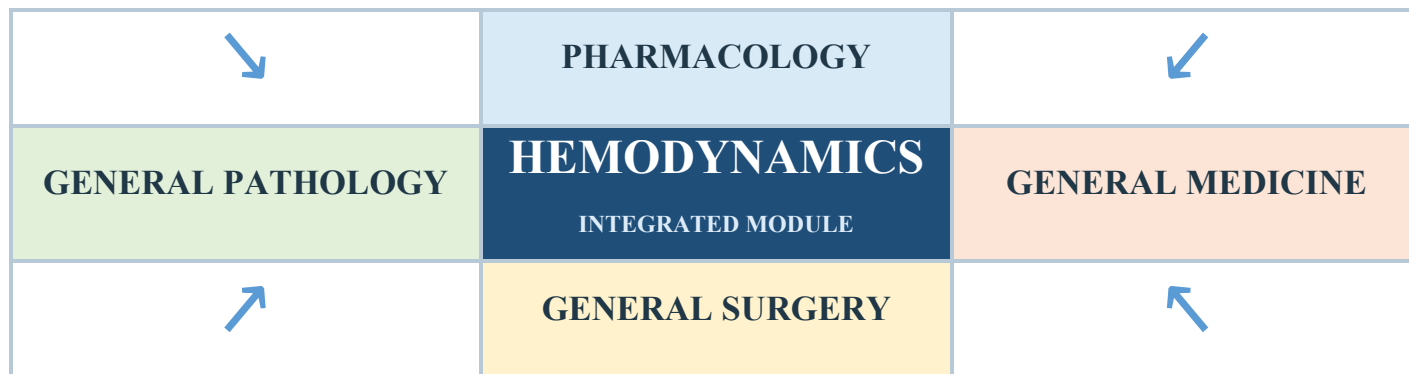
 You should be able to	• Describe the tooth preparation method for a class II cavity preparation for an amalgam restoration • Outline the choice of a matrix system for class II cavity • Review the proximal morphology of teeth
Session – 3, 4 <i>Matrix & Retainer Systems</i>	
 You should be able to	Mode of Delivery: <i>LGIS, SGD's</i>
 You should be able to	• Define matrix and retainer • Classify matrix and retainer systems • Enumerate the different designs of matrix systems used • Enlist the indications for the use of a matrix system • Enumerate the advantages

Total no of weeks.	Mode of Assessment
06	MCQs, SAQs

SECOND YEAR BDS • BLOCK II

2nd SPIRAL • MODULE 1

HEMODYNAMICS



INTEGRATION OF MEDICAL SCIENCES

Pharmacology • General Pathology • General Medicine • General Surgery

KNOWLEDGE	CLINICAL CORRELATION	INTEGRATED LEARNING
Connects mechanisms of disease with pharmacological principles and clinical medicine.	Links pathological processes with diagnosis, management and clinical decision-making.	Brings medical and surgical perspectives together around cardiovascular and circulatory concepts.

Block II • 2nd Spiral • Module 1

PHARMACOLOGY

TOPIC

LEARNING OBJECTIVES

Session – 1

ANS: Introduction – I & II

Mode of Delivery:

LGIS, SGDs



You should be able to

- Recall the main divisions of the nervous system
- Enumerate the distinctive anatomical and chemical characteristics of the sympathetic and parasympathetic nervous system
- Enlist essential steps of neurotransmitter synthesis, storage and release
- Identify the visceral organs innervated by sympathetic and parasympathetic systems and the functional responses of these organs to activation of either system
- Outline the distribution of autonomic receptors and secondary messengers associated with them.

Session – 2 <i>Cholinergic drugs. Classification, Cholinesterase, Alkaloids</i>		Mode of Delivery: <i>LGIS, SGD</i> s
 You should be able to	- Recall the structural and functional differences between nicotinic and muscarinic receptors, their distribution and effects produced by activation - Classify cholinergic drugs/ cholinomimetics - Differentiate between the mechanism of action of direct and indirectly acting cholinomimetics - Describe the clinical uses and adverse effects of directly acting cholinomimetics	
Session – 3 <i>Anticholinesterase Organophosphate Poisoning & Oximes</i>		Mode of Delivery: <i>LGIS. SGD</i> s
 You should be able to	- Name the types of cholinesterase, their location in the body and function - Outline the steps of the breakdown of acetylcholine by cholinesterase - Categorize anticholinesterases - Identify the mechanism of reversible and irreversible inhibition of cholinesterase - Discuss the salient features of individual anti-cholinesterase - Explain the use of anticholinesterase in the diagnosis and treatment of myasthenia gravis - Discuss the toxic pharmacological features of organophosphate poisoning - Schematise the drugs used in the management of organophosphate poisoning - Discuss the rationale for utilising oximes as antidotes for organophosphate poisoning	
Session – 4 <i>Cholinergic blockers; Natural alkaloids, Semisynthetic Anticholinergics I & II</i>		Mode of Delivery: <i>LGIS & SGD</i> s

 You should be able to	● Classify anticholinergic drugs (therapeutic and chemical) Explain the pharmacokinetic, mechanism and pharmacological action of the prototype anticholinergic agent ● Describe the major therapeutic uses and adverse effects of anticholinergics ● Enumerate drug interactions and contraindications of cholinergic receptor blockers ● Identify the features of atropine poisoning and give its treatment Compare and contrast atropine and hyoscine	
Session – 05 <i>Skeletal Muscle Relaxants</i>		Mode of Delivery: <i>LGIS, SGD</i> s
 You should be able to	● Classify skeletal muscle relaxants ● Describe the pharmacokinetics and mechanism of action of prototype non depolarizing and depolarizing muscle relaxants ● Identify the mechanism employed for termination of effects of skeletal muscle relaxants ● Describe the therapeutic clinical indications and adverse effects of each class of skeletal muscle relaxants ● Enlist centrally acting muscle relaxants ● Describe salient features of benzodiazepines, baclofen and tizanidine as spasmolytics ● Explain the unique role of dantrolene in hyperthermia syndromes	
Session – 6 <i>Catecholamines Adrenaline, NorAdrenaline, Dopamine & Dobutamine</i>		Mode of Delivery: <i>LGIS, SGD</i> s
 You should be able to	● Define catecholamines ● Enumerate catecholamines Describe the chemistry, mechanism of action, organ system effects, clinical uses and untoward effects of adrenaline ● Compare and contrast the effects of adrenaline nor-adrenaline and isoprenaline ● Differentiate between dopamine and dobutamine concerning source, pharmacokinetics, pharmacological effects, therapeutic indications and adverse effects	
Session – 7 <i>Non-Catecholamines: EphedrineAmphetamines, α Receptor Agonists</i>		Mode of Delivery: <i>LGIS, SGD</i> s

 You should be able to	• Enumerate noncatecholamines • Tabulate differences between catecholamines and non-catecholamines • Describe the mechanism of action of indirectly acting sympathomimetics *Group indirectly acting sympathomimetics according to their therapeutic indications • Trace the untoward effects of noncatecholamines	
Session – 08 <i>Adrenergic Blockers: Alpha - Receptor Blockers</i>		Mode of Delivery: <i>LGIS, SGD</i> s
 You should be able to	• Recall the distribution of alpha receptors and organ system effects produced by their activation • Classify alpha receptors • Discuss the principal clinical indications of alpha-blockers with their mechanism of action • Identify the untoward effects of alpha antagonists and • Describe the contraindications to their use of alpha-blockers	
Session-09 <i>Adrenergic Blockers: Beta Receptor Blockers I & II</i>		Mode of Delivery: <i>LGIS, SGD</i> s
 You should be able to	• Recall the distribution of beta receptors and organ system effects produced by their activation • Classify beta receptors • Identify important pharmacokinetic properties of beta blockers • Explain the principal clinical indications of beta blockers with their mechanism of action • Describe the adverse effects of beta blockers • Indicate contraindications of beta blockers	
Session-10 & 11 <i>Diuretics I, II</i>		Mode of Delivery: <i>LGIS, SGD</i> s
 You should be able to	• Outline the physiology of the nephron, including the transepithelial movement of bicarbonate, H₂O, H⁺, sodium, chloride, potassium, calcium and magnesium in different segments of the nephron • Classify diuretics • Describe the site, mechanism of action and therapeutic indications of different classes of diuretics • Indicate the adverse effects and conditions that interact with various diuretic drugs	

Session-12 & 13 in integration with General Medicine <i>Anti-Hypertensive Drugs I, II</i>		Mode of Delivery: <i>LGIS, SGDs, CBL</i>
 You should be able to	• Revise the definition and determinants of blood pressure • Define hypertensive in terms of currently applied criteria • Classify Hypertension. • Discuss briefly the complications of Hypertension. • Discuss the diagnostic investigations for ischemic heart disease. Classify bleeding disorders based on clinical features. • Outline the clinical features of Heart Failure. • Discuss the brief management of Heart Failure. • Classify antihypertensive drugs and sub-classify vasodilators • Discuss the mechanism employed by each class in lowering blood pressure Identify the rationale for preferring one class over the other in different hypertensive patients • State the adverse effects associated with antihypertensive drug groups Enumerate the drugs used in hypertensive emergencies	
Session-14 & 15 in integration with General Medicine <i>Anti-Anginal Drugs I, II</i>		Mode of Delivery: <i>LGIS, SGDs, CBL</i>
 You should be able to	• Define angina pectoris and give its • Classify the types of angina pectoris by their underlying pathology • Categorize drugs used in angina • Describe the mechanism of action of nitrates in different types of anginas • Discuss the important pharmacokinetic features of nitrates • Summarize the adverse effects of nitrates • Discuss the measures necessary to minimize tolerance of nitrates • Describe the role of beta blockers in angina • Explain why beta blockers are contraindicated in Prinz metal angina • Discuss the mechanism of action, clinical uses and adverse effects of calcium channel blockers • Tabulate newer anti angina drugs	

Session-16 & 17 in integration with General Medicine <i>Anti-Arrhythmic Drugs I, II</i>		Mode of Delivery: <i>LGIS, SGD's</i>
 You should be able to	- Recall the electrophysiology of cardiac action potential - Categorize the antiarrhythmic drugs based on their mechanism of action - Identify ion channels which serve as targets for anti-arrhythmic drugs - Trace the general mechanism of action of anti-arrhythmic drugs - Cite major side effects of major antiarrhythmic drugs that limit their clinical usefulness	
Session-18 & 19 in integration with General Medicine <i>Drugs Used in Cardiac Failure, I, II</i>		Mode of Delivery: <i>LGIS, SGD's</i>
 You should be able to	- Define heart/cardiac failure - Outline the pathophysiological basis for the development of cardiac failure - Identify the receptors on cardiac myocytes and their role in myocardial contraction - Classify drugs used in cardiac failure - Describe the mechanism of action of cardiac glycosides - Explain the adverse effects and drug interactions of digoxin	

Total no of weeks.	Mode of Assessment
06	MCQs, SAQs

GENERAL PATHOLOGY

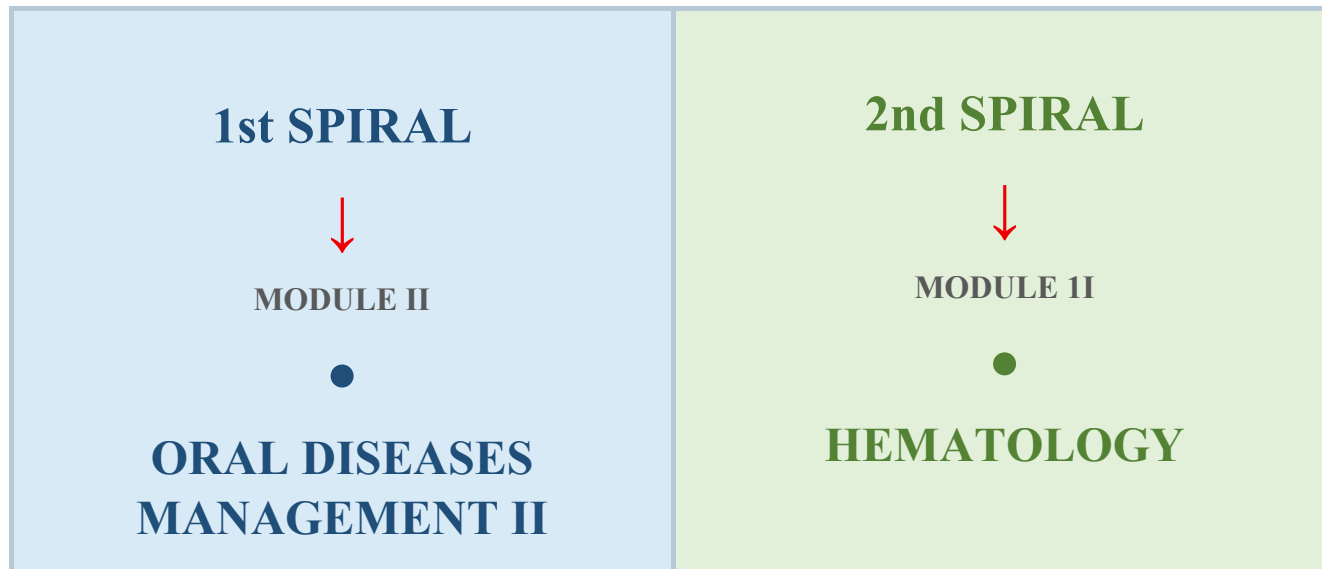
TOPIC	LEARNING OBJECTIVES
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Session – 1, 2, 3, 4, 5 & 6 in integration with General Surgery <i>Haemodynamic Disorders</i> <i>Oedema, Congestion & Hyperemia, Haemorrhage, Thrombosis & Embolism, Infarction, Shock</i>		Mode of Delivery: <i>LGIS, SGD, CBL, TBL</i>
 You should be able to	• Describe the basic concept & pathological process in haemodynamic disorders, Haemorrhage • Explain the Pathophysiology and terms used in oedema. • Explain the pathophysiology, differentiating features and morphological findings of hyperaemia and congestion • Describe the types, pathogenesis and morphological features of Infarction. • Describe the types, pathogenesis, morphological changes and clinical significance of thrombosis and embolism • Classify the types of Shock and explain their pathophysiology and clinical features.	
Session – 7, 8, 9 & 10 in integration with General Medicine <i>Gram Negative Rods</i>		Mode of Delivery: <i>LGIS, SGDs, PBL</i>
 You should be able to	• Describe the classification, clinical features and common characteristics of gram-negative Bacilli • Enlist the pathogenic strains, antigens, virulence factors & diseases caused by E. coli • Outline the pathogenesis, clinical features & characteristic features of Enterobacteriaceae (Helicobacter, klebsiella, Proteus, Pseudomonas, Enterobacter, H. influenza) • Explain the pathogenesis, lab diagnosis of salmonella typhi, Vibrio, Shigella, Campylobacter	

Total no of weeks.	Mode of Assessment
06	MCQs, SAQs

SECOND YEAR BDS – BLOCK II

SPIRAL-WISE MODULE-II ORGANIZATION

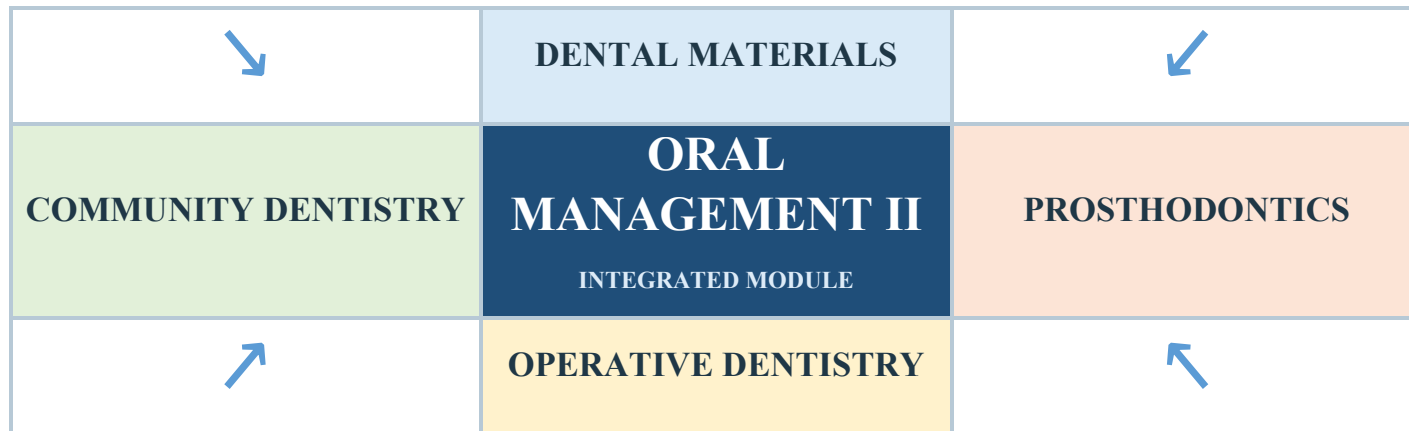


Integrated Block II • Module II of each Spiral

SECOND YEAR BDS • BLOCK II

1st SPIRAL • MODULE 2

ORAL MANAGEMENT II



HORIZONTAL INTEGRATION

Dental Materials • Community Dentistry • Prosthodontics • Operative Dentistry

KNOWLEDGE	SKILLS	CLINICAL APPLICATION
Links core concepts across the four contributing dental disciplines.	Connects material selection, restorative procedures, prosthodontic procedures and preventive practice.	Promotes integrated, patient-centred oral healthcare and clinical reasoning.

Block II • 1st Spiral • Module 2

DENTAL MATERIALS

TOPIC

LEARNING OBJECTIVES

Session – 9, 10, 11,12,13&14

Impression Materials in integration with Vertically Integrated Prosthodontics

Mode of Delivery:

Interactive LGIS, SGDs, Innovative teaching methods- Clinical Detectives: Troubleshooting Dental Impression Materials & snowball toss



You should be able to

- Classify impression materials used in dentistry.
- Describe the characteristics and properties of elastic and non- elastic impression materials.
- Differentiate between reversible and irreversible hydrocolloids.
- Define duplicating materials. applications and techniques.
- Describe modifications in alginate.
- Compare different types of elastomers based on properties
- Define working and setting time
- Infer the importance of correct manipulation of impression materials.
- Outline various methods of disinfecting different impression materials.
- Identify different impression materials
- Revisit Impression making and selection of trays.
- Manipulate alginate and impression compound

Session – 15 & 16 <i>Synthetic Polymers</i>	Mode of Delivery: <i>LGIS, SGDs</i>
 You should be able to	• Classify polymers & types of polymerisation Addition Polymerization and Condensation Polymerization • Describe the Factors affecting Polymerization • Describe the ideal properties and types of denture base materials • Describe the chemical composition of denture base materials • Describe the properties of denture base materials Describe the procedures involved in the fabrication of denture base materials • Discuss clinical application, manipulation, processing, and care of dentures for laboratory processed prosthetic resins • Describe biocompatibility issues associated with denture base materials • Describe various methods of polymerization of denture base materials
Session – 17 ,18 & 19 <i>Denture Base Polymers & Liners</i>	Mode of Delivery: <i>LGIS, SGDs</i>
 You should be able to	• Describe the physical and mechanical properties of denture base polymers • Classify acrylic denture base materials • Describe the composition of acrylic denture base materials • Compare compression moulding technique and injection moulding technique for complete denture processing • Compare heat-activated and chemically activated acrylic resins. • Describe the defects during denture processing • Describe the defects during denture processing Enlist repair materials for dentures • Describe the procedure of relining and rebasing. • Outline the need for tissue conditioning.

Session – 20
Artificial Teeth

Mode of Delivery:
Interactive LGIS, SGDs



You should be able to

- Compare types of artificial teeth on the basis of their advantages and disadvantages.

Total no of weeks.	Mode of Assessment
07	MCQs, SAQs

COMMUNITY DENTISTRY

TOPIC	LEARNING OBJECTIVES
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Session – 8 & 9 in integration with Oral Pathology
Epidemiology of Oral Cancer

Mode of Delivery:
LGIS



You should be able to

- Define oral cancer
- Identify the signs and symptoms of oral cancer
- Enlist different types of carcinomas
- Outline the epidemiology of oral cancer in Pakistan
- Describe agent, host and environmental factors related to oral cancer
- Outline the risk factors and contributory factors of oral cancer
- Differentiate between benign and malignant tumours.
- Enumerate benign dysplastic epithelial conditions & malignant tumours of the head and neck region.
- Discuss the role of various carcinogens in carcinogenesis.

Session – 10
Prevention Of Oral Cancer

Mode of Delivery:
LGIS



You should be able to

- Discuss the prevention of oral cancer at different levels

Session – 11
Screening

Mode of Delivery:
LGIS



You should be able to

- Define Screening
- Identify aims and objectives
- Enlist basic screening test
- Describe types of screening
- Discuss the criteria used for screening

Session – 12 in integration with Orthodontics <i>Epidemiology Of Malocclusion</i>		Mode of Delivery: <i>LGIS & SGD</i>
 You should be able to	• Classify malocclusion • Discuss causes of malocclusion • Describe the epidemiological triad of malocclusion and oro-facial defects • Explain the prevalence of malocclusion in Pakistan and its associated factors • <u>Classify malocclusion.</u>	
Session – 13 <i>Epidemiology And Prevention of Dental Trauma</i>		Mode of Delivery: <i>LGIS</i>
 You should be able to	• Discuss the epidemiology of traumatic injuries • Describe the preventive measures for traumatic injuries	
Session – 14 <i>Epidemiology and Prevention of Wasting Disease of Teeth</i>		Mode of Delivery: <i>LGIS</i>
 You should be able to	• Discuss the epidemiology of wasting disease of teeth • Describe the preventive measures	
Session – 15 <i>Health Education</i>		Mode of Delivery: <i>LGIS</i>

 You should be able to	● Define health education. ● Outline the objectives and key messages in health education. ● Describe principles involved in health education. ● Enlist the different methods and materials used in health education. ● Describe the steps involved in planning oral health education.
Session – 16 <i>Health Promotion</i>	Mode of Delivery: <i>LGIS</i>
 You should be able to	● Define health promotion ● Outline the principles of health promotion ● Identify different approaches to health promotion ● Discuss the declaration of the Ottawa charter and its components

Total no of weeks.	Mode of Assessment
06	MCQs, SAQs

PROSTHODONTICS	
TOPIC	LEARNING OBJECTIVES

Session – 4 & 5 in integration with Dental Materials <i>Laboratory Procedures Prior To Insertion</i>		Mode of Delivery: <i>LGIS</i>
 You should be able to	• Describe the different techniques used for flasking • Differentiate between 2-pour and 3-pour techniques of flasking • Enlist the dental materials that can be used as a separating media • Differentiate between the different stages of setting of acrylic • Describe curing cycles for heat-cured acrylic resin • Describe Denture base polymers and liners	
Session – 6 <i>Parts and surfaces of dentures</i>		Mode of Delivery: <i>LGIS</i>
 You should be able to	• Identify the parts of maxillary and mandibular complete dentures. • Describe the polished (external) surface, impression surface and occlusal surface of a complete denture. • Label the parts and surfaces of complete dentures	
Session – 7 <i>Occlusal Equilibration</i>		Mode of Delivery: <i>LGIS</i>
 You should be able to	• Define occlusal equilibration • Enlist the causes of occlusal disharmony • Outline the steps involved in the process of occlusal equilibration • Enumerate the necessary armamentarium for occlusal adjustments • Explain the BULL's Law	

Total no of weeks.	Mode of Assessment
06	MCQs, SAQs

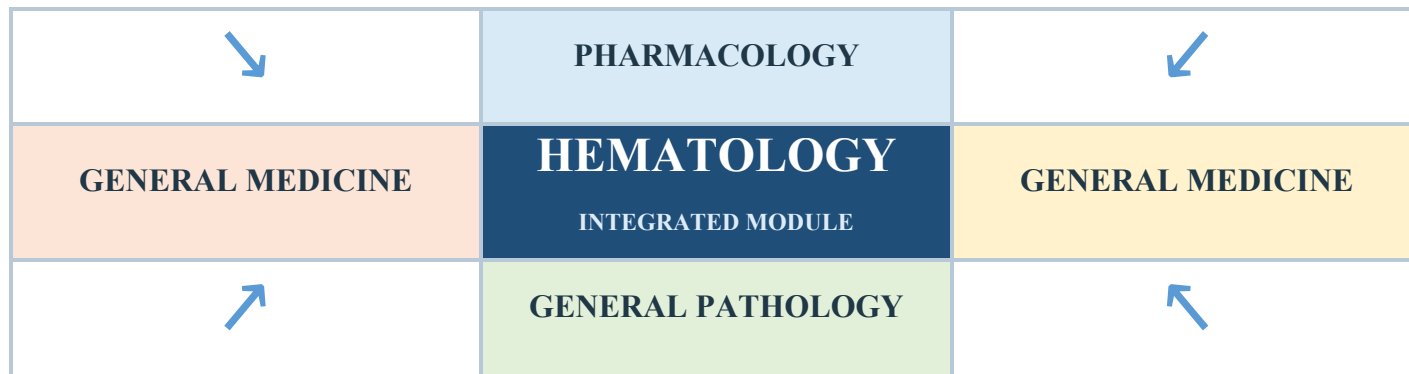
OPERATIVE DENTISTRY

TOPIC	LEARNING OBJECTIVES
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Session – 5 in integration with Dental Materials <i>Pulp Protecting Agents</i>		Mode of Delivery: <i>LGIS, SGD</i> s
 You should be able to	• Differentiate between liners, bases and varnishes • Classify liners & bases with their composition and properties • Enlist the indications and advantages of liners and bases • Highlight the importance of the clinical use of liners and bases in the restoration of different cavities • <i>Classification of liner and bases their properties</i>	

Total no of weeks.	Mode of Assessment
06	MCQs, SAQs

SECOND YEAR BDS • BLOCK II
2nd SPIRAL • MODULE 2
HEMATOLOGY



INTEGRATION OF MEDICAL SCIENCES

Pharmacology • General Pathology • General Medicine

PATHOPHYSIOLOGY	PHARMACOLOGICAL MANAGEMENT	CLINICAL INTEGRATION
Connects haematological disease processes with underlying pathological mechanisms.	Links haematological disorders with relevant drugs and therapeutic principles.	Relates pathology and pharmacology to clinical presentation, investigation and management.

Block II • 2nd Spiral • Module 2

PHARMACOLOGY

TOPIC

LEARNING OBJECTIVES

Session – 20 in integration with General Medicine <i>Haematinics</i>		Mode of Delivery: <i>LGIS, SGDs</i>
 You should be able to	● Outline the clinical features of Iron Deficiency Anaemia. ● Discuss the diagnostic investigations for Iron Deficiency Anaemia. ● Recall the physiology of absorption and role of iron, vitamin B12 and folic acid in haematopoiesis ● Define anaemia ● Cite common nutritional causes of anaemia ● Enlist various oral and parenteral preparations of iron, Vitamin B12 and folic acid ● Identify the therapeutic role of iron, Vitamin B12 and folic acid in different types of anaemia ● Describe the adverse effects and treatment of acute and chronic iron therapy	
Session – 21 <i>Sulphonamides And Trimethoprim</i>		Mode of Delivery: <i>LGIS, SGDs</i>

 You should be able to	● Outline the steps of folic acid synthesis ● Correlate the appropriate step of folic acid synthesis with the mechanism of sulphonamide and trimethoprim ● Classify sulphonamides ● Describe the clinically useful application of bacterial folic acid antagonists ● Enumerate the major adverse effects of sulphonamides and trimethoprim ● Enumerate the combinations of sulphonamides with other antimicrobial drugs ● Name the combination of sulfamethoxazole and trimethoprim ● Describe the ratio of sulfamethoxazole and trimethoprim in the combined form ● List the advantages obtained by the combination of sulfamethoxazole and trimethoprim	
Session – 22 & 23 in integration with General Medicine <i>Anticoagulants I, II</i>		Mode of Delivery: <i>LGIS, SGD</i>
 You should be able to	● Outline the mechanism of haemostasis and coagulation pathways ● Trace the role of coagulating factors and platelets in haemostasis ● Revise the role of platelets in the coagulation ● Classify anticoagulant drugs ● Describe the mechanism of action of heparin ● Tabulate the difference between un-fractionated heparin and low molecular weight heparin ● Summarize the indications for, precautions related to and potential adverse effects of heparin ● Discuss ways of management of heparin-induced thrombocytopenia Enumerate the direct thrombin inhibitors ● Describe the mechanism of action of warfarin ● Outline the major drug interactions of warfarin Explain the concept of INR (International Normalized Ratio) ● Enlist the clinical uses of warfarin ● Identify the adverse effects of warfarin ● Design a management plan for warfarin toxicity ● Cite alternative oral anticoagulants to warfarin ● Enumerate thrombolytic drugs ● Describe the mechanism of action, indications and adverse effects of thrombolytic agents ● Name anti-fibrinolytic agents/agents used for neutralizing the action of thrombolytic drugs ● Trace the possible interaction of fibrinolytic agents with anticoagulants (heparin) and antiplatelet drugs (aspirin)	

	• Classify anti-platelets Discuss the mechanism of action of various groups of antiplatelet drugs • Describe the clinical uses and adverse effects of different antiplatelet drugs
Session – 24 & 25 in integration with General Medicine <i>Anti-Malaria Drugs, I, II</i>	
Mode of Delivery: <i>LGIS, SGD & CBL</i>	
 You should be able to	• Outline the clinical features of Malaria. • Discuss the relevant investigations for the diagnosis of Malaria. • Enumerate different species of Plasmodium • Outline the life cycle of Plasmodium • Identify the various phases of the life cycle of Plasmodium which act as targets of antimalarial drugs (Therapeutic classification of anti-malarial drugs) • Describe the mechanism of action, therapeutic uses and adverse effects of prototype drugs • Discuss the use of primaquine in the case of Plasmodium vivax and ovale • Enlist the commonly used combination of anti-malarial drugs
Session – 26 <i>Anti-Amoebic Drugs</i>	
Mode of Delivery: <i>LGIS, SGD</i>	
 You should be able to	• Outline the life cycle of Entamoeba histolytica Discuss the underlying pathogenesis of amoebiasis Classify the drugs effective against amoebiasis (a targeted form of E. histolytica) • Describe the spectrum of activity, mechanism of action, clinical uses and adverse effects of metronidazole • Discuss the salient PK and PD features of the prototype drug of each class • Trace the rationale of combining a luminal agent with systemic amebicides

Session-27 <i>Anti-Emetics</i>		Mode of Delivery: <i>LGIS, SGD</i>
 You should be able to	- Define nausea and emesis Enlist etiological factors associated with the occurrence of nausea and vomiting - Summarize the stimuli, pathways and key events in vomiting. - Discuss the role of CTZ, NTS and VC in vomiting - State therapeutic classes of anti-emetic drugs - Describe the mechanism of action of various groups of anti-emetic drugs - Enumerate the adverse effects of drugs used for nausea and vomiting	
Session – 28 & 29 in integration with General Medicine <i>Drugs Used in Peptic Ulcer I, II</i>		Mode of Delivery: <i>LGIS, SGD & CBL</i>
 You should be able to	- Review the physiology of gastric acid secretion and natural protective mechanisms against it - Explain the location and role of different receptors on various gastric cells - Define peptic ulcer disease (PUD) - State etiological factors of PUD (H.pylori, stress and drug induced) - Outline the nonpharmacological and pharmacological treatment options for PUD - Categorise the drugs used for PUD - Describe the mechanism of action, therapeutic uses, adverse effects and drug interactions of various drug groups used for PUD - Discuss the triple and quadruple drug regimens of H. pylori-induced ulcers.	
Session – 30 <i>Purgatives/ Laxatives</i>		Mode of Delivery: <i>LGIS, SGD</i>
 You should be able to	- Define constipation - Discuss the underlying pathophysiological mechanism of constipation - Recall the physiology of gastrointestinal motility - Define purgatives/ laxatives - Classify purgatives/ laxatives - Describe the site, onset and mechanism of action of various groups of purgatives - Tabulate the clinical application of purgatives/ laxatives Enumerate the adverse effects and contraindications of these drugs	

Session – 31 <i>Anti-Diarrheal Drugs</i>	Mode of Delivery: <i>LGIS, SGD</i>
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 You should be able to	• Define diarrhoea • Recall the physiology of gastrointestinal motility • Categorise diarrhoea based on aetiology and onset of symptoms • Classify anti-diarrheal drugs • Describe the mechanism of various drug groups used for diarrheal episodes • Outline approaches for the management of diarrhoea • Explain the role and effectiveness of drugs in the treatment of various types of diarrhoea • Enumerate the adverse effects of anti-diarrheal drugs
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Total no of weeks.	Mode of Assessment
05	MCQs, SAQs

GENERAL PATHOLOGY

TOPIC	LEARNING OBJECTIVES
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Session – 11, 12 & 13 in integration with general Medicine <i>Haematology, Anaemias, Leukaemia</i> <i>Bleeding disorders Coagulation disorders</i>	Mode of Delivery: <i>LGIS, SGDs</i>
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 You should be able to	● Describe the classification, clinical features & laboratory diagnosis of anaemias ● Describe the classification, laboratory diagnostic criteria of leukaemia ● Explain the mechanism of haemostasis, bleeding disorders, platelet disorders and clotting factors defects	
Session – 14, 15 & 16 <i>Immunological Disorders</i> <i>Cells of the immune system, Types of immunity</i> <i>Hypersensitivity Reaction I, II, III & IV</i> <i>Immunodeficiency diseases, AIDS</i>		Mode of Delivery: <i>LGIS, SGDs</i>
 You should be able to	● Describe the cells of the immune system, immunoglobulins, mechanisms in adaptive and innate immunity ● Describe in detail the mechanism, clinical features, associated diseases and preventive measures of all types of hypersensitivity. ● Discuss the pathogenesis of acquired immunodeficiency disorders and differentiate HIV infection from AIDS with preventive measures	
Session – 17, 18 & 19 <i>Introduction to Parasitology</i> <i>Amoeba Giardia/ trichomonas</i> <i>Malarial parasite. Leishmania, Toxoplasma</i> <i>Ascaris lumbricoides, Ankylostoma duodenale, Enterobius vermicularis, Cestodes, Nematodes</i>		Mode of Delivery: <i>LGIS, SGDs, CBL</i>



You should be able to

- Differentiate between important blood parasites and intestinal parasites based on morphology and symptoms
- Discuss the characteristic features, life cycle, preventive measures for parasitic infections.
- Interpret common laboratory findings used in the diagnosis of parasitic diseases.

Total no of weeks.	Mode of Assessment
05	MCQs, SAQs

BEHAVIORAL SCIENCES

TOPIC	LEARNING OBJECTIVES
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Session – 1 <i>Understanding Behaviour</i>	Mode of Delivery: <i>LGIS</i>
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 You should be able to	● Explain the basic principles of human behaviour and their biological, psychological, and social determinants.
Session – 2 & 3 <i>Individual differences</i>	
 You should be able to	● Describe the concept of individual differences and their impact on personality and health. ● Explain factors influencing individual behaviour, such as genetics, environment, and experiences
Session – 4 in integration with Community Dentistry <i>Dental ethics and mental health acts</i>	
 You should be able to	● Discuss key ethical principles in dentistry, including autonomy, beneficence, non-maleficence, and justice. ● Discuss relevant mental health acts and legal considerations in dental practice. ● Discuss History Taking & Physical Examination
Session – 5 <i>Dental ethics and mental health acts</i>	
Mode of Delivery: <i>SGD/ Demonstration or role play</i>	

 You should be able to	● Apply ethical decision-making models to dental practice scenarios. ● Uphold ethical and legal responsibilities while treating patients, ensuring respect for their rights.	
Session – 6 in integration with Community Dentistry <i>Doctor Patient Relationship</i>		Mode of Delivery: <i>LGIS</i>
 You should be able to	● Define different models of the doctor-patient relationship (e.g., paternalistic, informative, shared decision-making). ● Explain the importance of communication in building trust and rapport with patients. ● Describe Financing in Health Care ● Discuss Dental Office Management ● Discuss Oral Cancers	
Session – 7 <i>Doctor Patient Relationship</i>		Mode of Delivery: <i>SGD/ Demonstration or role play</i>
 You should be able to	● Demonstrate effective communication techniques in patient interactions. ● Manage difficult patient interactions professionally. ● Foster a patient-centred approach that prioritizes empathy, respect, and understanding.	
Session – 8 & 9 <i>Life events-I</i>		Mode of Delivery: <i>LGIS</i>

 You should be able to	● Define psychological trauma and common reactions to life stressors. ● Explain the impact of stress on health and disease. ● Describe stress management techniques and coping strategies.	
Session – 10 <i>Steps to inculcate Dental professionalism in students</i>		Mode of Delivery: <i>LGIS</i>
 You should be able to	● Identify key attributes of a professional dentist ● Outline steps to develop professionalism	
Session – 11, 12 <i>Life-events-II</i>		Mode of Delivery: <i>SGD/ Demonstration or role play</i>
 You should be able to	● Recognize signs of psychological trauma and stress in patients. ● Educate patients on basic stress management techniques. ● Promote resilience and well-being among patients and peers.	
Session – 13 <i>Healthcare Decision-Making & Leadership</i>		Mode of Delivery: <i>LGIS</i>



You should be able to

- Describe the decision-making processes in healthcare.
- Discuss risk management & mitigation.
- Discuss the role of crisis leadership in dental emergencies.

Total no of weeks.	Mode of Assessment
09	MCQs, SAQs/SEQs. Viva, OSPE

PRACTICALS

DENTAL MATERIALS

TOPIC	LEARNING OBJECTIVES
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Session – 1 <i>Introduction to Dental Materials in Block 2</i>	Mode of Delivery: <i>Demonstration followed by practical work & evaluation on logbook</i>
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 You should be able to	● Recognize and name the primary dental materials introduced in Block II. ● State the basic purpose and clinical applications for each material ● Distinguish all the materials according to their classification. ● Recall basic handling rules.
Session – 2 <i>Clinical Handling of Dental Composites</i>	Mode of Delivery: <i>Demonstration followed by practical work & evaluation on logbook</i>
 You should be able to	● Identify the dental materials present in Composite kit ● List and explain the step-by-step process for placing a composite restoration.
Session – 3 <i>Identification and usage of endodontic materials</i>	Mode of Delivery: <i>Demonstration followed by practical work & evaluation on logbook</i>
 You should be able to	● Identify the main types of endodontic materials ((irrigants, intra-canal medicaments, sealers, and root canal filling materials).) ● State the basic purpose and function of each endodontic material.
Session – 4 <i>Visit to Operative department- Early exposure to clinicals (EEC)</i>	Mode of Delivery: <i>Demonstration followed by practical work & evaluation on logbook</i>

 You should be able to	● Identify the main dental instruments, equipment, and materials used in the Operative Dentistry department. ● Observe the basic procedures taking place in Operative Department.
Session – 5 <i>Introduction to non-elastic Impression materials</i>	Mode of Delivery: <i>Demonstration followed by practical work & evaluation on logbook</i>
 You should be able to	● Identify the main non-elastic impression materials (impression plaster, impression compound, and zinc oxide eugenol paste). ● State the main clinical uses and limitations of non-elastic impression materials.
Session – 6 <i>Manipulation of Impression Compound</i>	Mode of Delivery: <i>Demonstration followed by practical work & evaluation on logbook</i>
 You should be able to	● Identify Impression compound among two impression compounds (Type I and type II) ● Manipulate cake form affectively and load it in try.
Session-7 <i>Manipulation of Green stick</i>	Mode of Delivery: <i>Demonstration followed by practical work & evaluation on logbook</i>
 You should be able to	● Identify Green Stick among two impression compounds (Type I and type II) ● Demonstrate the usage of green stick impression compound.

Session-8 <i>Manipulation of Zinc oxide eugenol</i>		Mode of Delivery: <i>Demonstration followed by practical work & evaluation on logbook</i>
 You should be able to	● Identify zinc oxide eugenol paste among different types of given non-elastic Impression materials. ● Demonstrate correct mixing technique.	
Session-9 <i>Manipulation of Alginate</i>		Mode of Delivery: <i>Demonstration followed by practical work & evaluation on logbook</i>
 You should be able to	● Identify alginate impression materials. ● Demonstrate correct mixing technique for alginate.	
Session – 10 <i>Clinical Handling of Acrylic Denture Base Materials</i>		Mode of Delivery: <i>Demonstration followed by practical work & evaluation on logbook</i>
 You should be able to	● To identify acrylic Denture base materials. ● Demonstrate correct mixing technique of heat and self cure denture base materials. ● Identify different stages during mixing (sandy, sticky, stringy and doughy).	

Session – 11 <i>Clinical Handling of Denture Lining Materials</i>	Mode of Delivery: <i>Demonstration followed by practical work & evaluation on logbook</i>
 You should be able to	• To identify denture Lining materials. • Understand the usage of denture lining materials. • Demonstrate correct application technique of a tissue conditioner.

Total no of weeks.	Mode of Assessment
11	Viva, OSPE

COMMUNITY DENTISTRY

TOPIC	LEARNING OBJECTIVES
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Session – 1 <i>Tooth Brushing Techniques</i>	Mode of Delivery: <i>Demonstration using models and peer practice</i>
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 You should be able to	• Demonstrate appropriate tooth brushing techniques for different age groups and clinical situations.
Session – 2 <i>Flossing Techniques</i>	Mode of Delivery: <i>Demonstration and hands-on practice</i>
 You should be able to	• Demonstrate proper dental flossing techniques effectively.
Session – 3 <i>Tooth Discoloration</i>	Mode of Delivery: <i>Case-based discussion and image interpretation</i>
 You should be able to	• Identify different types of tooth discoloration through clinical assessment.

Session – 4 <i>Plaque Disclosing Agents</i>		Mode of Delivery: <i>Demonstration and supervised practice</i>
 You should be able to	• Demonstrate the correct use of plaque disclosing agents for plaque visualization.	
Session – 5 <i>Plaque Index</i>		Mode of Delivery: <i>Demonstration and hands-on exercise</i>
 You should be able to	• Record plaque index scores accurately.	
Session – 6 <i>CPITN</i>		Mode of Delivery: <i>Demonstration and clinical practice</i>
 You should be able to	• Perform periodontal screening using CPITN and record the findings correctly.	
Session – 7 <i>Oral Hygiene Instructions</i>		Mode of Delivery: <i>Role play and supervised patient counselling</i>



You should be able to

- Deliver individualized oral hygiene instructions using appropriate patient education techniques.

Total no of weeks.	Mode of Assessment
11	Viva, OSPE

PROSTHODONTICS

TOPIC	LEARNING OBJECTIVES
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Session – 1

Identification of landmarks

Mode of Delivery:

Demonstration followed by Supervised Hands-on Practical Work



You should be able to

- Identify the anatomical landmarks on maxillary and mandibular edentulous casts.
- Differentiate primary stress-bearing, secondary stress-bearing, and relief areas.

Session – 2 <i>Record base fabrication</i>		Mode of Delivery: <i>Demonstration followed by Supervised Hands-on Practical Work</i>
 You should be able to	• Fabricate a stable and well-adapted record base on the master cast. • Demonstrate proper adaptation, trimming, and finishing of the record base. • Evaluate the record base for stability, retention, and accuracy.	
Session – 3 <i>Occlusal rims fabrication</i>		Mode of Delivery: <i>Demonstration followed by Supervised Hands-on Practical Work</i>
 You should be able to	• Construct occlusal rims with correct dimensions and contour.	
Session – 4 <i>Mounting of casts on articulator</i>		Mode of Delivery: <i>Demonstration followed by Supervised Hands-on Practical Work</i>
 You should be able to	• Mount maxillary and mandibular casts on an articulator. • Verify the accuracy of mounted casts before tooth arrangement.	
Session – 5 <i>Arrangement of teeth</i>		Mode of Delivery: <i>Demonstration followed by Supervised Hands-on Practical Work</i>

 You should be able to	● Arrange artificial teeth according to landmarks. ● Establish appropriate occlusal relationships for complete dentures.	
Session – 6 <i>Lab procedures</i>		Mode of Delivery: <i>Demonstration followed by Supervised Hands-on Practical Work</i>
 You should be able to	● Perform laboratory procedures involved in complete denture processing. ● Demonstrate correct finishing and polishing techniques. ● Inspect the processed denture for defects and quality	
Session – 7 <i>Fabrication of clasps</i>		Mode of Delivery: <i>Demonstration followed by Supervised Hands-on Practical Work</i>
 You should be able to	● Design and fabricate commonly used clasp assemblies for removable partial dentures. ● Evaluate clasp adaptation,	
Session – 8 <i>Wax pattern for RPD</i>		Mode of Delivery: <i>Demonstration followed by Supervised Hands-on Practical Work</i>
 You should be able to	● Design and fabricate an accurate wax pattern for a removable partial denture.	

Session-9 <i>Teeth arrangement</i>		Mode of Delivery: <i>Demonstration followed by Supervised Hands-on Practical Work</i>
 You should be able to	● Arrange artificial teeth on a removable partial denture according to functional and aesthetic principles. ● Maintain harmonious occlusal relationships with the remaining natural dentition. ● Evaluate tooth arrangement for stability, aesthetics, and occlusion.	
Session-10 <i>Lab procedures for partial denture fabrication</i>		Mode of Delivery: <i>Demonstration followed by Supervised Hands-on Practical Work</i>
 You should be able to	● Perform laboratory procedures for processing removable partial dentures. ● Demonstrate proper finishing and polishing techniques. ● Evaluate the completed prosthesis for fit, function, and quality.	

Total no of weeks.	Mode of Assessment
11	Viva, OSPE

OPERATIVE DENTISTRY

TOPIC	LEARNING OBJECTIVES
Session – 1, 2, 3, 4, 5, & 6 <i>Class II cavity preparation for amalgam restoration</i>	Mode of Delivery: <i>Demonstration on typodont</i> <i>Hands-on practice on typodont teeth</i> <i>Direct supervision and checklist-based assessment</i>
 You should be able to	• Demonstrate the proper handling of amalgam for a class II cavity preparation • Perform class II cavity preparation which include occlusal step, proximal box and isthmus with correct width as per ideal dimension • Able to perform cavity preparation with correct pulpal floor depth and gingival seat
Session – 7 & 8 <i>Matrix and retainer system</i>	Mode of Delivery: <i>Demonstration on typodont</i> <i>Hands-on practice on typodont teeth</i> <i>Direct supervision and checklist-based assessment</i>
 You should be able to	• Outline the choice of matrix system for class II cavity • Demonstrate the placement of different matrix systems and wedges • Able to identify the common placement errors
Session – 9 & 10 <i>Pulp protecting agents</i>	Mode of Delivery: <i>Demonstration on typodont</i> <i>Hands-on practice on typodont teeth</i> <i>Direct supervision and checklist-based</i>

	<i>assessment</i>
 You should be able to	• Demonstrate the method of application of the liner and bases • Able to manipulate and apply with uniform thickness over the pulp

Total no of weeks.	Mode of Assessment
11	Viva, OSPE

PHARMACOLOGY

TOPIC	LEARNING OBJECTIVES
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Session-1 <i>Preparations-APC Powder</i>	Mode of Delivery: <i>Demonstration & preparation</i>
 You should be able to	• Enlist the constituents of APC powder. • Enumerate its indications. • Prepare APC powder.

Session – 2 <i>Prescription Writing- Anaphylaxis, & Allergic Rhinitis</i>		Mode of Delivery: <i>Demonstration</i>
 You should be able to	• Write a basic prescription for anaphylaxis & allergic rhinitis.	
Session – 3 <i>Calculation- Fractional solution</i>		Mode of Delivery: <i>Demonstration</i>
 You should be able to	• Calculate basic calculations of fractional solutions in their clinical practice.	
Session – 4 <i>Prescription Writing- Hypertension</i>		Mode of Delivery: <i>Demonstration</i>
 You should be able to	• Write a basic prescription for hypertension.	

Session-05 <i>Preparations- $KMnO_4$</i>		Mode of Delivery: <i>Demonstration & preparation</i>
 You should be able to	- Enumerate its indications. - Prepare $KMnO_4$. - Enlist the directions for use.	
Session – 6 <i>Prescription Writing- Congestive cardiac failure</i>		Mode of Delivery: <i>Demonstration</i>
 You should be able to	Write a basic prescription for congestive cardiac failure.	
Session – 7 <i>Prescription Writing- Iron def. Anaemia</i>		Mode of Delivery: <i>Demonstration</i>
 You should be able to	Write a basic prescription for iron deficiency anaemia.	

Session-08 <i>Preparations-ORS</i>		Mode of Delivery: <i>Demonstration & preparation</i>
 You should be able to	• Write its composition. • Enumerate its indications. • Prepare ORS. • Enlist the directions for use.	
Session – 9 <i>Prescription Writing- Malaria & Complicated Malaria</i>		Mode of Delivery: <i>Demonstration</i>
 You should be able to	• Write a basic prescription for malaria and complicated malaria.	
Session-10 <i>Preparations- Sulphur Ointment</i>		Mode of Delivery: <i>Demonstration & preparation</i>
 You should be able to	• Enumerate its indications. • Prepare Sulphur Ointment. • Enlist the directions for use.	

Session-11 <i>Preparations- Carminative mixture</i>	Mode of Delivery: <i>Demonstration & preparation</i>
 You should be able to	• Write its constituents. • Prepare Carminative mixture.

Total no of weeks.	Mode of Assessment
11	Viva, OSPE

GENERAL PATHOLOGY

TOPIC	LEARNING OBJECTIVES
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Session – 1 <i>Edema & Congestion</i>	Mode of Delivery: <i>Small-group slide interpretation</i>
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 You should be able to	Identify Edema and congestion on microscopic slides	
Session – 2 <i>Thrombosis</i>		Mode of Delivery: <i>Small-group slide interpretation</i>
 You should be able to	Identify thrombi on microscopic slide	
Session – 3 <i>Sugar Test</i>		Mode of Delivery: <i>OSPE station-based practical</i>
 You should be able to	Perform sugar test.	
Session – 4 <i>Amyloidosis</i>		Mode of Delivery: <i>Small-group slide interpretation</i>

 You should be able to	Identify amyloid deposit on histopathological slide
Session – 5 <i>Urine R/E</i>	
Mode of Delivery: <i>OSPE station-based practical</i>	
 You should be able to	- Interpret urine dipstick (Chemical) test results - Identify common urinary segment under the microscope
Session – 6 <i>Malarial Parasite</i>	
Mode of Delivery: <i>OSPE station-based practical</i>	
 You should be able to	- Examine Giemsa-stained peripheral smear for shape - Examine the preparation of thick and thin film
Session – 7 <i>DLC, TLC, ESR</i>	
Mode of Delivery: <i>OSPE station-based practical</i>	

 You should be able to	Identify & differentiate WBC on stained peripheral Smear
Session – 8 <i>RBC Morphology</i>	Mode of Delivery: <i>OSPE station-based practical</i>
 You should be able to	Identify normal morphology and abnormalities in RBC size, shape & colour on peripheral smear
Session- 9 <i>Stool R/E, Ova and cyst</i>	Mode of Delivery: <i>OSPE station-based practical</i>
 You should be able to	- Interpret a routine stool examination - Identify common helminth ova
Session-10 <i>Leishmania Donovan (LD) bodies</i>	Mode of Delivery: <i>Small-group slide interpretation</i>



You should be able to

- Interpret microscopic slide for LD bodies

Total no of weeks.	Mode of Assessment
11	Viva, OSPE

SAMPLE TIMETABLE

Day	8:30-9:20	9:20-10:15	10:15-11:05	11:05-11:20	11:20-12:10	12:10-1:00	1:00-1:30	1:30-2:30	2:30-3:30
Monday	A-Community dentistry B-Dental material		Pharmacology	Break	Dental Materials	Community Dentistry	Break	Pharmacology	
	Practical/ SGD A- (Topic) B- (Topic)		LGIS Topic		LGIS Topic	LGIS Topic		Tutorial PTT	
Tuesday	A-Dental materials B-Community dentistry		Pathology		Dental Materials	Community Dentistry		Pathology	
	Practical B- (Topic) A- (Topic)		LGIS Topic		LGIS Topic	LGIS Topic		Tutorial/SGD Topic	
Wednesday	B Pre-clinical operative dentistry A Pre-clinical Prosthodontics Integrated with DM		Pharmacology		Dental Materials	Community Dentistry		Community dentistry	
	Skill lab A- Topic B- Topic		LGIS Topic		LGIS Topic	LGIS Topic		SGD/Tutorial Topic	
Thursday	Dental material		Pharmacology		DM/Mentoring session	General Pathology		A Pathology B Pharmacology	
	Tutorial/SGD Topic		LGIS Topic			LGIS Topic		Practical/SGD A/ B Topic	
Friday	A Pre-clinical Operative B-Pre-clinical Prosthodontics Integrated DM		Preoperative		Pre prosthetics	Behavioural sciences		A- Pharmacology B- Pathology	
	Skill Lab B- (Topic) A- (Topic)		LGIS Topic		LGIS Topic	LGIS Topic		Practical /SGD A- Topic B- Topic	
Dr. Aeman	Dr. Nida Zehra	Dr. Shazana Rana	Dr. Sadia	Dr. Sharaz	Dr. Sameen Zehra	Dr. Maria Mudassar	Miss Amna Fayaz	Dr. Faizan	Dr. Irfan Shah
Coordinator 2 nd block	HOD Dental Materials	HOD Pharmacology	HOD General Pathology	Pre-clinical Operative	Preclinical Prosthodontics	HOD Community Dentistry	Behavioral sciences	DDE	Principal

LEARNING RESOURCES

DENTAL MATERIALS

Table 12.1: Learning resources of dental materials.

Textbooks M.Cabe Dental Materials Restorative Materials by Robert, Craig <i>Work book</i> Dental materials & Preclinical Dental Sciences Log Book for second year Dental Students Recommended Books Restorative Materials by Robert, Craig.	Pliers Round, Straight and Adams. Wire cutter 	 Beale Carver 15cm Zahle Carver 12.5cm Lecron Carver 15.5cm Cerment Spatula 17.5cm Fahen Wax Knife Small 13cm Fahen Wax Knife Large 18cm Plaster Spatula 21cm 
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COMMUNITY DENTISTRY

Table 19.2: Learning resources of community dentistry.

Books	Instruments	ART Instruments	
Textbooks Textbook of Preventive and Community Dentistry. 2nd edition. S.S Hiremath A textbook of public health dentistry Recommended Books Burt, B. & Eklund, S. (1999) Dentistry, Dental Practice & The Community. 5th ed. Saunders. Daly B, Watt R, Batchelor P & Treasure E (2002) Essential Dental Public Health, Oxford University Press. Gluck G & Morganstein WM (2002) Jong's Community Dental Health 5th edition, Mosby. Harris, N.O. & Christen, A.C. (1987) Primary Preventive Dentistry. 2nd ed. Reston Pub. Co.	Examination Instruments ART Probes  Mirror Probe		Dental Floss 

Kent GC, AS Blinkhorn. (1993) The Psychology of Dental Care. 2nd edition, Wright Publication, London.

Murray, J.I. (ed.) (1996) Prevention of Oral Diseases. 3rd ed. Oxford University Press.

Phoon WO & PCY Chen (Eds). (1986) Textbook of Community Medicine in South East Asia. John Wiley & Sons.

Pine CM (ed.). (1997) Community Oral Health. Oxford: Wright Publication.

Scrambler Graham. (2003) Sociology as Applied to Medicine. 5th ed. WB Saunders Company.

Tweezer



CPITN-E and C

Michigan probe

Periodontal probe

Toothbrushing model

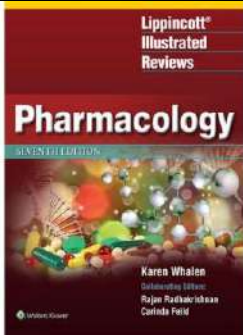
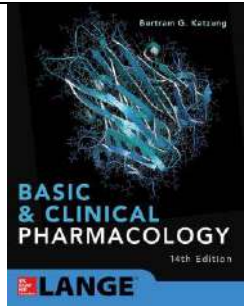


Mouthwash

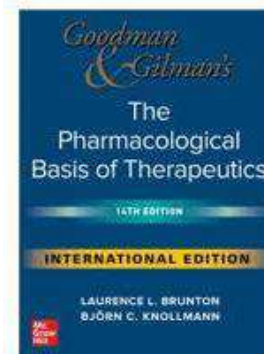


PHARMACOLOGY

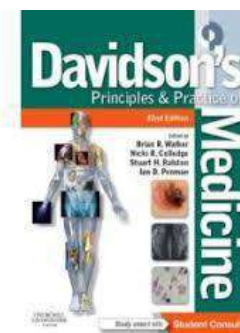
Table 19.3: Learning resources of pharmacology.

Textbooks for Pharmacology		
Lippincott Illustrated Reviews Pharmacology 6 th Edition		
Basic and clinical Pharmacology by Bertram G Katzung 14 th Edition		
Reference books for Pharmacology		

The Pharmacological Basis of Therapeutics by Goodman & Gilman 12th Edition

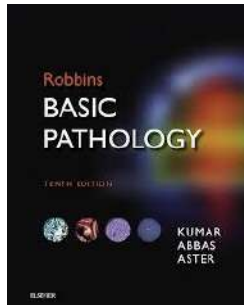
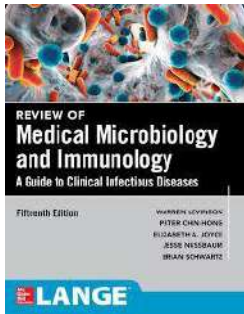


Davidson's Principles & Practice of Medicine 22nd Edition



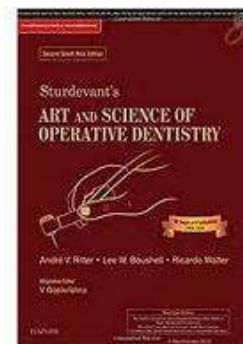
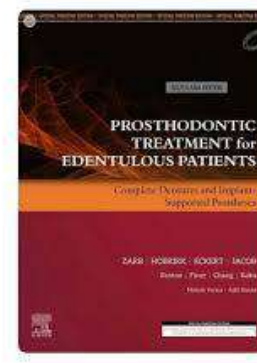
GENERAL PATHOLOGY

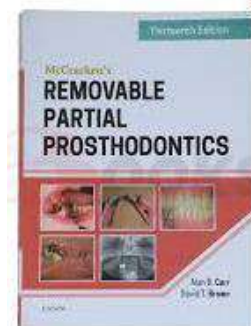
Table 19.4: Learning resources of general pathology.

Books For General Pathology	
Robbins Basic Pathology: with STUDENT CONSULT Online Access (Robbins Pathology)	
Review of Medical Microbiology and Immunology (Lange Medical Books)	

PRECLINICAL OPERATIVE DENTISTRY & PROSTHODONTICS

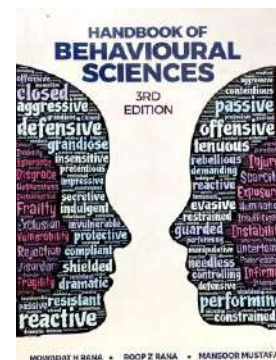
Table 19.5: Learning resources of prosthodontics.

Recommended Books	
1. Sturdivant's Art and Science, South Asian Edition.	
2. Prosthodontic treatment for edentulous patients by Zarb 13 th Edition.	
3. McCracken's Removable Partial Prosthodontics 13 th Edition.	

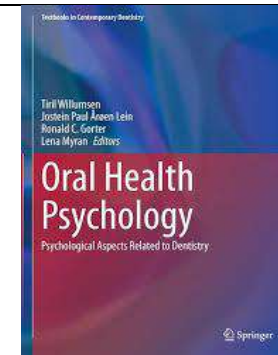


BEHAVIOURAL SCIENCE

Table 19.6: Learning resources of behavioural sciences.

Recommended Books for Behavioural Science	
Handbook of Behavioural Sciences by Mowadat H. Rana (3 rd edition)	
Willumsen, T., Årøen Lein, J. P., Gorter, R. C., & Myran, L. (Eds.). (2002). Oral Health Psychology: Psychological Aspects Related to	

Dentistry. Springer Publishers. <https://doi.org/10.1007/978-3-031-04248-5>



Feedback on the study guide:

We value your feedback and will use it for improvement of this study guide. Kindly provide feedback at the given email address: dental.education@hitec-ims.edu.pk