FINAL YEAR
STUDY GUIDE 2028

RAHBAR COLLEGE OF DENTISTRY
LAHORE

RAHBAR COLLEGE
OF DENTISTRY

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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

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.

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.

INTRODUCTION TO STUDY GUIDE

The final year of Bachelor of Dental Surgery (BDS) program is crucial stage of your career. It focuses on consolidating your knowledge, enhancing clinical skills, and preparing you for your future career in dentistry.

Objectives of the Final Year:

1. **Integration of Knowledge**: Reinforce and integrate the knowledge gained in previous years across all dental disciplines, including clinical dentistry, oral surgery, periodontology, prosthodontics, orthodontics, and pediatric dentistry.
2. **Clinical Proficiency**: Develop advanced clinical skills through hands-on practice and real patient interactions. Focus on diagnosing, treatment planning, and executing dental procedures with confidence.
3. **Professional Development**: Enhance your understanding of the ethical, legal, and professional responsibilities of a dentist. Prepare for the transition from student to practitioner.
4. **Exam Preparation**: Equip yourself with effective study strategies and resources to excel in final examinations and assessments.

CORE SUBJECTS IN FINAL YEAR

1. Prosthodontics
2. Operative dentistry
3. Paediatric Dentistry
4. Orthodontics
5. Oral and maxillofacial surgery

Additional Modules

Additional subjects enhance the core curriculum, offering specialized knowledge, skills, deepening understanding and proficiency in related fields:

1. Generic competencies
2. Research

ABBREVIATIONS

1. **BDS**: Bachelor of Dental Surgery
2. **RCT**: Root Canal Treatment
3. **CAD/CAM**: Computer-Aided Design/Computer-Aided Manufacturing
4. **CBCT**: Cone Beam Computed Tomography
5. **TMJ**: Temporomandibular joints
6. **GTR**: Guided Tissue Regeneration
7. **SGD**: Small group discussion
8. **SLO**: Student Learning Objectives
9. **CBD**: Case-Based discussion
10. **CBL**: Case-Based Learning
11. **SEQ**: Short Essay Question
12. **SAQ**: Short Answer Question
13. **MCQ**: Multiple Choice Question
14. **OSPE**: Objective Structured Practical examination
15. **OSCE**: Objective Structured Clinical examination
16. **NCCL:** Non-carious Cervical Lesions
17. **SOP**: Standard Operating Procedure
18. **OMFS**: Oral and Maxillofacial surgery

GENERAL GUIDELINES

- All lectures and tutorials will be conducted in one specific room allotted to your year.
- Students must follow the disciplinary guidelines laid down by the administration.
- Institutional Dress Code must be followed by all students.
- All students must wear white overalls in class.
- All students are required to wear their issued identity/student cards in class.
- The students will be required to maintain their subject logbooks and get them duly signed and checked. Any breach of discipline in the class will not be tolerated.
- Mutual respect for both genders is to be strictly observed.

CURRICULAR FRAMEWORK

Introduction to Curricular Framework

This study guide is developed as a resource material for the students and faculty. The study guide development process included representation from teaching faculty and students. The study guide aims to ensure alignment between societal, institutional, patient, and student needs. The curriculum implemented is a hybrid type of curriculum that has both horizontal and vertical integration via logical sequencing.
The curriculum comprises the following two phases:

PHASE 1 (1 & 2 Year): Includes teaching of basic sciences namely: Anatomy, Physiology, Biochemistry, Oral biology & Tooth Morphology, Science of Dental Material, Pharmacology, Community & Preventive Dentistry, General Pathology & Microbiology and Behavioural Sciences. It also includes initial training of pre-clinical Prosthodontics and pre-clinical Operative Dentistry, Research.

PHASE 2 (3rd & Final Year): Includes teaching and training in Periodontology, Oral Pathology, Oral Medicine, General Medicine, General Surgery, Oral and maxillofacial Surgery, Prosthodontics, Orthodontics and Operative Dentistry.

CURRICULUM MAP

Academic Year	Orientation	Instructional strategies	Learning Outcome	Block 1 Block-1 Exam	Block 2 Block-2 Exam	Block 3 Block-3 Exam	Formative & Summative Assessment	Internal Assessment	Send Up	Professional Examination
Year 1	Orientation Week	• Interactive Lecture • SGDs • CBL/ Assignments • Chairside/ bedside Teaching • Practicals • SDL	**Knowledge** **Skill** **Attitude**	**Examinable Subjects:** Anatomy + Physiology + Oral Biology + Biochemistry + Islamic and PakistanStudies **Non-Examinable Subjects:** None			**Cognitive:** MCQ, SEQ, Viva **Psychomotor:** OSPE, OSCE Practical, Logbook. **Affective:** DOPs, OSCE Viva, Logbook	Block Result + Attendance +Generic Competencies+ Research + Send-up = 10%	MCQs/SEQs/OSPE/OSCE/Viva Voce	CQs/SEQs/OSPE/OSCE/Viva Voce
Year 2				**Examinable Subjects:** Pathology + Pharmacology + Dental Materials + Community Dentistry + Behavioural Sciences **Non-Examinable Subjects:** Pre-Operative + Pre-Prosthodontics						
Year 3				**Examinable Subjects:** General Medicine + General Surgery + Oral Pathology + Oral Medicine **Non-Examinable Subjects:** Operative Dentistry + Prosthodontics + Oral and Maxillofacial Surgery						
Year 4				**Examinable Subjects:** Operative Dentistry + Prosthodontics + Oral and Maxillofacial Surgery + Orthodontics **Non-Examinable Subjects:** None						
Timetable= **Course duration**: 4-year **Timings:** 8 am to 3 pm			Venues: lecture halls, Skill lab, Dental Clinics, Wards, Tutorial room, Conference room Learning Resources: Textbook, Study Models, Case Records, Histology Slides, Dental Material & Instruments							

RCoD PROGRAM OUTCOMES AND COMPETENCIES

Bachelor of Dental Surgery will have the following program outcomes at RCoD.

- The dental graduates will demonstrate the knowledge and skills necessary to practice dentistry in primary care settings to provide comprehensive patient care and make independent decisions for their patients.
- The graduates will promote dental health care within the community, utilizing the latest research, critical thinking and professionalism.
- The graduates will exhibit emotional intelligence, commit to lifelong learning, who can demonstrate leadership and foster innovation.

RCoD aims to produce a dental graduate to achieve the following competencies, as outlined by PM&DC.

Generic Competencies

1. Professionalism
    - Communication skills
    - Time management
    - Ethics & integrity
    - Teamwork
    - Problem-solving skills
    - Empathy in patient care
2. Critical thinker
3. Creativity - Innovation
4. Leadership
5. Emotional intelligence
6. Life-long learner

Specialty Oriented Competencies (Knowledge, Skill, Attitude)

1. Researcher
2. Emergency patient management
3. Comprehensive care dentistry
4. Implant dentistry
5. Operative dentistry and endodontics
6. Prosthodontics
7. Periodontics
8. Oral and maxillofacial surgery
9. Orthodontics
10. Oral medicine and radiology
11. Paediatric dentistry
12. Pain and anxiety management
13. Health promotion within the community

TEACHING METHOD

Mode of information Transfer

- Interactive Lectures
- Chair-side Demonstrations
- Small Group Discussion
- Case based discussion/ case-based learning
- Self-Study
- Assignments
- Practical
- Clinical and Lab. Work Supervision

Assessment Tools

- Written assessment: - SAQ, MCQs.
- Oral Examination: viva voce
- Case Presentations
- Continuous assessment in clinics and laboratory, OSPE, OSCE

FINAL YEAR BDS TIMETABLE

TIME TABLE FINAL YEAR BDS (2028-2029)
RAHBAR COLLEGE OF DENTISTRY

DAY	08:00am — 09:00am	09:00am — 10:00am	10:00am-10:15am	10:15am — 03:00pm
Mon	Operative Dentistry	Prosthodontics	Break	Clinical training (Op Dent., Prostho, Ortho, OMFS, Paedo.) Batch A,B,C,D,E
Tue	Oral and Maxillofacial Surgery(OMFS)	Orthodontics	Break	Clinical training (Op Dent., Prostho, Ortho, OMFS, Paedo.) Batch A,B,C,D,E
Wed	Prosthodontics	Operative Dentistry	Break	Clinical training (Op Dent., Prostho, Ortho, OMFS, Paedo.) Batch A,B,C,D,E
Thurs	Orthodontics	Oral and Maxillofacial Surgery	Break	Clinical training (Op Dent., Prostho, Ortho, OMFS, Paedo.) Batch A,B,C,D,E
Fri	Prostho(9) /Ortho(9) Operative(9) /OMFS(9)	Operative Dentistry(16) / Paedodontics(20)	10:00am — 01:00pm	01:00pm — 02:00pm Jummah Prayer Break / 02:00Pm — 03:00pm / Clinical training (Op Dent., Prostho, Ortho, OMFS, Paedo.) Batch A,B,C,D,E

- Each Clinical Batch A, B, C ,D and E consists of 10 students
- Each Clinical Batch will have a rotational training of 7 weeks.
- Friday's 1st lecture → 9 Lectures/Prosthodontics, Orthodontics, Oral and Maxillofacial Surgery and Operative Dentistry.
- Friday's 2nd lecture → 20 lectures = Paedodontics, 16 lectures = Operative Dentistry.

CORRELATED TOPICS

- Comprehensive history and examination. (Prosthodontics, OMFS, Orthodontics, Operative Dentistry)
- Occlusion (Prosthodontics, Orthodontics, Operative Dentistry)
- Fixed prosthodontics (Prosthodontics, Operative Dentistry)
- Temporomandibular joint (Prosthodontics, OMFS, Orthodontics, Operative Dentistry)
- Implant dentistry (Prosthodontics, OMFS)
- Cleft Lip and Palate (Prosthodontics, Orthodontics)
- Dentoalveolar Trauma (OMFS, Operative Dentistry)

DEPARTMENTAL OVERVIEW

PROSTHODONTICS

MESSAGE OF HOD PROSTHODONTICS

It is with great pleasure to welcome our young and energetic students to the Department of Prosthodontics, Rahbar College of Dentistry, Lahore. Prosthodontics is the field of dentistry which deals with the replacement of lost oral structures including teeth and surrounding tissues through fixed and removable means.

Prosthodontics faculty aims to initiate the learning in early years and continue with the learning process in subsequent years with an integrated approach. We Department of Prosthodontics strongly believes in continuation of research and development activities for the students and faculty members. It is well equipped with the latest innovative materials and techniques, including digital dentistry, thus improving the teaching facilities as well as optimizing the quality of service to its patients.

With effective planning, critical thinking and collective teamwork, I believe to promote the institutional working at par with the global standards.

RATIONALE OF COURSE

Dental problems in Pakistan include high rates of dental caries, periodontal disease, and oral cancer, exacerbated by limited access to care and poor hygiene practices. Economic barriers and a shortage of dental professionals further complicate the situation. Public awareness and education are crucial for improving oral health outcomes.

Prosthodontics in Pakistan is significant for restoring oral function and aesthetics, addressing prevalent dental issues. With growing demand and technological advancements, it offers diverse career opportunities. The field promotes public health initiatives, emphasizing preventive care and interdisciplinary collaboration, ultimately enhancing patient quality of life and improving overall dental health outcomes.

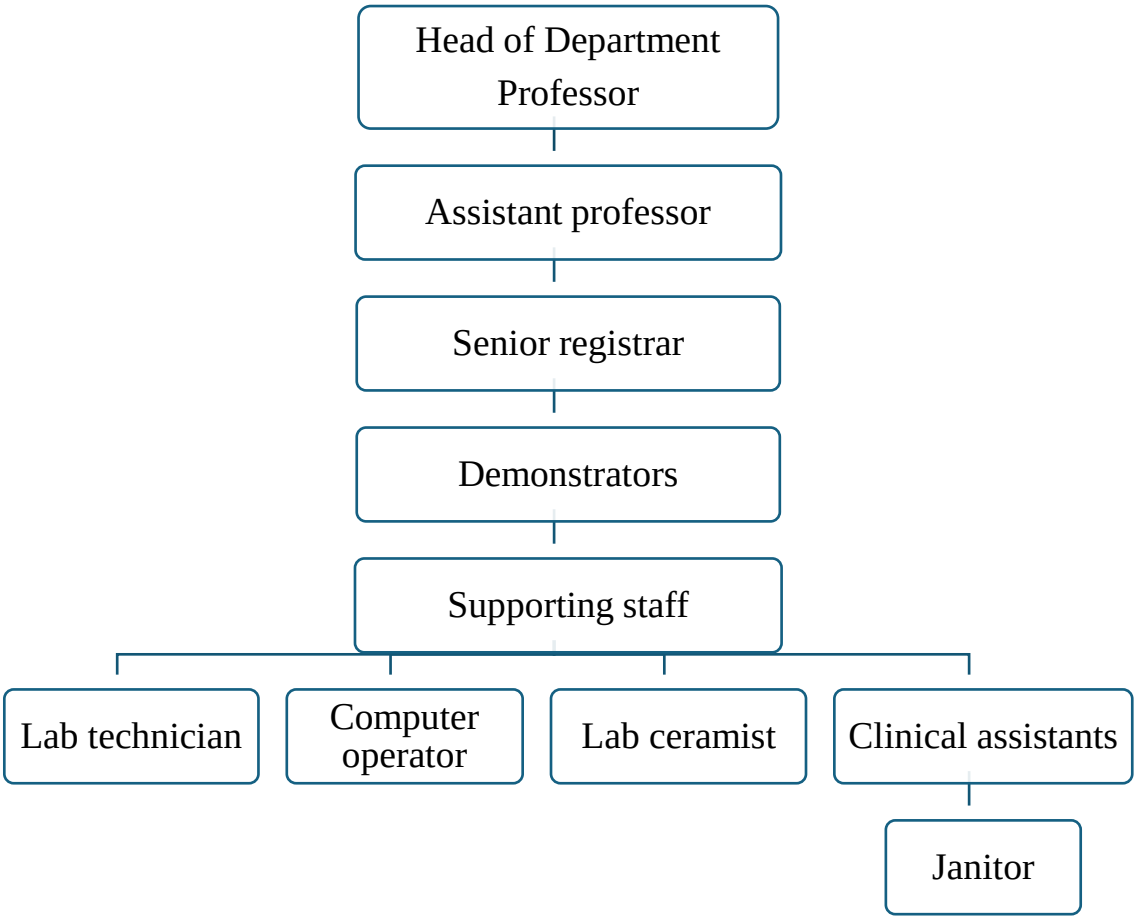
Innovative student-centred teaching methods enhance engagement and learning. Approaches like problem-based learning, flipped classrooms, and project-based learning promote critical thinking and collaboration. Experiential and reflective learning allow students to apply knowledge in real-world contexts, while gamification and peer teaching foster motivation and communication skills, making education more dynamic and effective.

Support options for prosthodontics students include dedicated clinics and well-equipped laboratories that enhance hands-on learning. Experienced faculty provide mentorship and regular office hours for guidance. Workshops on new techniques and guest lectures from industry professionals enrich the educational experience, ensuring students are well-prepared for successful careers in dental healthcare. while continuous feedback mechanisms and counselling services promote both academic growth and well-being.

DEPARTMENTAL DETAILS

Head of department	Prof. Dr. Hina Zafar Raja
Course Instructors	Prof. Dr. Hina Zafar Raja Dr. Junaid Altaf Dr. Fizza Tahir
Total Lectures	81
Clinical Demonstrations	5 for every 7 weeks clinical rotation
SGDs	5 for every 7 weeks clinical rotation

DEPARTMENTAL ORGANOGRAM



COURSE INSTRUCTORS

Course director:

Prof Dr. Hina Zafar Raja

BDS, F.C.P.S, FDS RCPSG, MSc, PhD, CHPE

Head of Department

Contributors

1. Dr. Junaid Altaf
   BDS, F.C.P.S
   Assistant Professor

2. Dr. Fizza Tahir
   BDS, F.C.P.S
   Assistant Professor

SMALL GROUP DISCUSSION SCHEDULE

DISCUSSION TOPICS

1. History and examination
2. Diagnosis and treatment planning of Complete denture
3. Retention, Support and Stability of Complete denture
4. Implant/ natural tooth overdenture
5. Diagnosis and treatment planning of Fixed Partial Denture
6. Principles of tooth prep for FPD

DAY 1	**ORIENTATION DAY**			
WEEK	**Day**	**Time**	**Topics**	**Instructor**
WEEK 1	Wednesday	2:00pm-3:00pm	**SGD-**History and examination	Prof. Dr. Hina Zafar Raja
WEEK 2	Wednesday	2:00pm-3:00pm	**SGD-**Diagnosis and treatment planning of Complete denture	Dr. Junaid Altaf
WEEK 3	Wednesday	2:00pm-3:00pm	**SGD-**Retention, Support and Stability of Complete denture	Dr Fizza Tahir
WEEK 4	Wednesday	2:00pm-3:00pm	**SGD-**Implant/ natural tooth overdenture	Prof. Dr. Hina Zafar Raja
WEEK 5	Wednesday	2:00pm-3:00pm	**SGD-**Diagnosis and treatment planning of Fixed Partial Denture	Dr. Junaid Altaf
WEEK 6	Wednesday	2:00pm-3:00pm	**SGD-**Principles of tooth prep for FPD	Dr Fizza Tahir
WEEK 7	**CLINICAL TEST**			

CLINICAL DEMONSTRATION

DAY 1	ORIENTATION DAY			
WEEK	**Day**	**Time**	**Topics**	**Instructor**
WEEK 1	Monday	10:30pm-11:30pm	**Demo**-Primary impression	Prof. Dr. Hina Zafar Raja
	Tuesday	10:30pm-11:30pm	**Demo**-Secondary Impression	Dr. Junaid Altaf
	Thursday	10:30pm-11:30pm	**Demo**-Jaw relation (orientation, vertical and horizontal)	Dr Fizza Tahir
	Friday	10:30pm-11:30pm	**Demo**-Teeth setup (anterior and posterior)	Prof. Dr. Hina Zafar Raja
WEEK 2	Monday	10:30pm-11:30pm	**Demo**-Try in Complete denture	Dr. Junaid Altaf
	Wednesday	10:30pm-11:30pm	**Demo**-Insertion	Dr Fizza Tahir
	Thursday	10:30pm-11:30pm	**Demo**-Tooth preparation anterior (crown/ veneer) and Impression for FPD	Prof. Dr. Hina Zafar Raja
	Friday	10:30pm-11:30pm	**Demo**-Tooth preparation posterior (crown) and Impression for FPD	Dr. Junaid Altaf
WEEK 3	Wednesday	10:30pm-11:30pm	**Demo**-Metal Trial of Crown	Dr Fizza Tahir
	Thursday	10:30pm-11:30pm	**Demo**-Cementation of Crown	Prof. Dr. Hina Zafar Raja
WEEK 7	Thursday	**CLINICAL TEST**		

FINAL YEAR FACULTY SCHEDULE

DAY	FINAL YEAR BDS		
	LECTURE	**SGD**	**CLINIC**
Time	**8:00 am-10:00 am**	**2:00 pm- 3:00 pm**	**10:15am - 3:00 pm**
Monday	Faculty Demo 1/ Demo 2	Faculty Demo 1/ Demo 2	Dr Junaid Altaf/ Demonstrator 2
Tuesday	NA	Faculty Demo 1/ Demo 2	Prof Dr Hina Zafar Raja/Demonstrator 1
Wednesday	Faculty Demo 1/ Demo 2	Faculty Demo 1/ Demo 2	Dr Fizza Tahir/ Demonstrator 2
Thursday	NA	Faculty Demo 1/ Demo 2	Dr Junaid Altaf/Demonstrator 1
Friday	Faculty Demo 1/ Demo 2	Faculty Demo 1/ Demo 2	Dr Fizza Tahir/ Demonstrator 2

PROSTHODONTIC LEARNING OUTCOME
STUDENT LEARNING OBJECTIVES
COMPLETE DENTURE PROSTHODONTICS

Topic	Course Content	Learning Outcome At the end of each module, student will be able to:	MIT	Assessment Tool
Introduction to Complete Denture and edentulous state	Complete Dentures and Prosthodontics Edentulous state Biomechanical support for dentate and complete denture patients.	**KNOWLEDGE** Define complete denture prosthodontics. Define Complete denture. Classify types of complete dentures. Enlist the indications and contraindications of complete denture. Enlist the problems of edentulism Describe the biomechanical support mechanism of edentulous patients. Differentiate between support mechanism of natural dentition and complete denture patients. **SKILLS** Identify the need for complete denture. **ATTITUDE:** Develop an empathetic approach to understanding patients' concerns, needs, and expectations regarding complete dentures. Educate patients about their complete denture options Exhibit professionalism	Interactive Lectures Case-based learning Small group discussion Clinical demonstration Clinical demonstration	MCQ/ SEQ/ VIVA OSCE OSCE

Patient Evaluation of edentulous state	History Clinical examination Mental classification Influence of patient's demographic data on treatment planning	**KNOWLEDGE** Describe the Protocol for comprehensive history taking. Describe the Protocol to evaluate general and oral health of patient. Describe the effects of medical diseases on oral health. Describe house mental classification. **SKILL** Analyse information on systemic conditions, previous dental treatments, and patient habits that could impact prosthetic care. Perform a thorough clinical examination of the oral cavity, including assessment of the soft tissues, hard tissues, and occlusion. Interpret diagnostic tools and techniques, such as radiographs, diagnostic casts, and periodontal assessments, to aid in the evaluation and treatment planning for prosthodontic cases. Assess the suitability of a patient for complete dentures, including evaluating factors like ridge resorption and soft tissue health. **ATTITUDE** Display good patient communication skills. Active listening Practice good time management. Documentation of patient records Respect and maintain patient confidentiality. Exhibit professionalism	Interactive Lectures Case-based learning Small group discussion Clinical demonstration Clinical demonstration	MCQ/ SEQ/ VIVA OSCE OSCE

Maxillary and mandibular substitutes for denture bearing area	Anatomy of Edentulous Mouth Denture Bearing areas Maxillary Anatomical Landmarks Mandibular anatomical Landmarks Intraoral Biometric Guides	**KNOWLEDGE:** Enumerate objectives of impression making Describe preliminary impressions with respect to tray selection, material choice and technique Describe secondary impressions with respect to tray selection, material choice and technique Describe intra-oral biometric guide. **INTERGRATED WITH ORAL BIOLOGY:** Name maxillary and mandibular stress- bearing areas Describe the supporting structures in maxilla and mandible Describe limiting structures in maxilla and mandible **SKILLS**: Identify Maxillary primary and secondary stress bearing areas, relief areas, supporting areas and limiting areas. Identify Mandibular primary and secondary stress bearing areas, relief areas, and supporting areas. Identify intra-oral biometric guide. Relate the use of biometric guide for complete denture fabrication. **ATTITUDE:** Exhibit professionalism	Interactive Lectures Case-based learning Small group discussion Practical lab illustration on cast Clinical demonstration	MCQ/ SEQ/ VIVA OSCE OSCE

Clinical application of dental materials for edentulous patients	Impression materials Denture base materials Teeth materials Denture adhesives Denture cleansers	Describe injection molding technique Explain significance of modified resin base materials Describe materials used in the fabrication of prosthetic teeth Enlist indications of porcelain and acrylic teeth. Enlist indications of tissue conditioners Describe various types of denture cleansers Describe adverse reactions to denture cleansers Enlist indications and contraindications for denture adhesives. **INTEGRATED WITH DENTAL MATERIALS:** Describe non- elastic and elastic impression materials Describe disinfection protocols for various impression materials Describe polymeric denture base materials. Describe cast metal alloys used as denture base materials Compare the properties of porcelain and resin teeth **SKILLS:** Identify various dental materials used in fabrication of dentures. **ATTITUDE:** Exhibit professionalism	Interactive Lectures Case-based learning Small group discussion Practical/ clinical demonstration	MCQ/ SEQ / VIVA OSCE

Systemic Health Aspects and Nutritional Considerations	Systemic lupous erythematosus Burning mouth syndrome Oral movement disorders Salivary dysfunction	**KNOWLEDGE:** Enumerate oral- systemic conditions that influence an adaptive prosthodontic experience Describe management of Systemic lupous erythematosus, burning mouth syndrome, oral movement disorders, salivary dysfunction. Enlist nutritional guidelines for patients undergoing removable prosthodontic treatment Enlist risk factors for malnutrition in patients with dentures. **SKILLS**: Perform patient counselling regarding influence of systemic diseases. **ATTITUDE:** Display good patient communication skills. Make referral to concerned physician. Active listening Documentation of patient records Respect and maintain patient confidentiality. Exhibit professionalism	Interactive Lectures Small group discussion Self-directed learning Clinical demonstration Clinical demonstration	MCQ/ SEQ / VIVA OSCE OSCE

Sequelae of wearing complete dentures	Direct and indirect sequelae caused by wearing removable prosthesis, Traumatic ulcers Denture irritation hyperplasia Denture stomatitis Kelly's syndrome Residual ridge reduction	**KNOWLEDGE**: Identify and describe common oral health issues associated with wearing complete dentures. Enlist direct and indirect sequelae caused by wearing removable prosthesis Describe management of: Traumatic ulcers Denture irritation hyperplasia Denture stomatitis Kelly's syndrome Residual ridge reduction Describe the process of residual ridge resorption over time and its implications for denture fit and function. **SKILLS:** Identify manifestation of various sequelae in the oral cavity. Counsel the patient about existing conditions and its prosthodontic implications. Develop strategies for managing and mitigating these complications, including proper denture care, regular adjustments, and timely professional intervention. **ATTITUDE:** Display good patient communication skills. Documentation of patient records Respect and maintain patient confidentiality. Exhibit professionalism	Interactive Lectures Small group discussion Self-directed learning Clinical demonstration Clinical demonstration	MCQ/SEQ/ VIVA OSCE OSCE

Management of Special Conditions	Management of special systemic conditions Conditioning of oral tissues Gag reflex management Xerostomia Management	**KNOWLEDGE**: Describe prosthodontic management of: Gag reflex Xerostomia **SKILLS:** Perform impression making in patients with gag reflex. Perform impression making and steps in fabrication of denture in patients with xerostomia **ATTITUDE:** Counsel the patient about xerostomia and its impact on prosthodontic outcome Refer the patient to concerned physician. Exhibit professionalism	Interactive Lectures Small group discussion Self- directed learning Clinical demonstration Clinical demonstration	MCQ/SEQ/ VIVA OSCE OSCE
Impression Making	Objectives of Impression Making.	**KNOWLEDGE:** Demonstrate the correct techniques for taking accurate preliminary and final impressions. Describe the techniques for making accurate impressions for complete dentures, including border molding, tray selection, and proper mixing and handling of impression materials. Classify different types of impression trays along with their application in complete denture impression making. INTEGRATED WITH DENTAL MATERIALS: Describe various impression materials used in complete denture procedures, such as alginate, polyether, and silicone.	Interactive Lectures Small group discussion Self- directed learning	MCQ/SEQ/ VIVA

		SKILLS: Select appropriate size of impression trays. Manipulation of impression material. Follow procedural steps including patient preparation, material handling, and impression removal to achieve high-quality results. Identify and troubleshoot common issues and errors in impression making. Handling and storing impressions to avoid distortion or damage before sending them to the dental laboratory. **ATTITUDE:** Display good patient communication skills. Follow infection control protocol. Develop a meticulous attitude toward ensuring the accuracy and precision of impressions to achieve optimal prosthetic outcomes. Exhibit professionalism. Emphasize the importance of taking responsibility for the quality of the impressions and understanding the impact of errors on treatment outcomes.	Clinical demonstration Clinical demonstration	OSCE OSCE
Pre-prosthetic patient management	Improving Denture-Bearing Areas	**KNOWLEDGE:** Describe management of abused oral tissues before fabrication of a new denture. Enlist objectives of pre-prosthetic surgical prescriptions Explain surgical correction of conditions that preclude optimal prosthetic function **INTEGRATED WITH OMFS:** Demonstrate knowledge of various pre-prosthetic procedures necessary for optimizing the success of	Lectures; Case-based learning/Chair -side learning	MCQ/SEQ/ VIVA

		prosthetic treatments Describe methods used for enlargement of denture bearing areas **SKILLS:** Evaluate the condition of abused tissue. Demonstrate the ability to perform a thorough clinical examination to identify pre-prosthetic needs. Develop proficiency in using diagnostic tools and techniques to assess pre-prosthetic conditions. Counsel the patient regarding existing conditions. **Attitude:** Display good patient communication skills. Counsel the patient about existing conditions. Promote a collaborative attitude towards working with other dental professionals and specialists in the pre-prosthetic phase. Make referral to concerned surgeon.	Clinical demonstration Clinical demonstration	OSCE OSCE
Jaw relation record	Occlusal rims Orientation relation Vertical relation Horizontal Jaw Relations Centric relation Centric Occlusion Maximum intercuspation Techniques to	**KNOWLEDGE:** Define jaw relation records. Identify the different types of jaw relations (e.g., centric occlusion, centric relation, and functional occlusion) and their clinical significance. Describe the anatomical and functional considerations that impact jaw relation records. Discuss the procedures for recording various jaw relations, including techniques for obtaining accurate records. Discuss the materials used for jaw relation records and their properties.	Interactive Lectures Small group discussion Self- directed learning	MCQ/SEQ/ VIVA

	record Centric Relation	**SKILLS:** Accurately perform jaw relation records using various techniques (e.g., wax rims, silicon materials) to capture centric occlusion and other relevant relationships. Assess the accuracy of jaw relation records through clinical checks and adjustments. Manage materials effectively to record jaw relations. Utilize articulators to transfer jaw relation records accurately to the dental laboratory. **ATTITUDE:** Display good patient communication skills. Follow infection control protocol. Develop a meticulous attitude toward ensuring the accuracy and precision of jaw relation record to achieve optimal prosthetic outcomes. Exhibit professionalism.	Clinical demonstration Clinical demonstration	OSCE OSCE
Articulators	Classification of articulators Selection of articulator	**KNOWLEDGE:** Define articulators Describe the significance of articulators in prosthodontics. Explain the different types of articulators (e.g., non-adjustable, semi-adjustable, and fully adjustable) and their specific applications. Describe the key components of an articulator and their functions, including the incisal guide, condylar guides, and centric locks. Enumerate advantage and disadvantages of semi-adjustable articulators Differentiate between ARCON and NON-ARCON articulators Describe programming of an	Interactive Lectures Small group discussion Self- directed learning	MCQ/SEQ/ VIVA

		articulator. Define facebow. Describe the procedure for recording orientation relation using a facebow. Enlist advantages and indications of facebow maxillary and mandibular occlusal rims. **SKILLS:** Identify the issues related to articulator settings. Adjust articulator settings based on clinical findings and feedback from the patient or the dental team. **ATTITUDE:** Demonstrate attention to detail when using and adjusting articulators to ensure high-quality outcomes for prosthetic devices.	Clinical demonstration Clinical demonstration	OSCE OSCE
Occlusion	Theories of occlusion Differences between natural and artificial occlusion Factors effecting complete denture occlusion Balanced occlusion, definition, norms, and clinical significance.	**KNOWLEDGE:** Define occlusion and its importance in dentistry. Classify different types of occlusions (e.g., normal occlusion, malocclusion) and their classifications (e.g., Angle's classification). Describe the concepts of centric occlusion (CO), centric relation (CR), and lateral excursions. Enlist various diagnostic tools and techniques used to assess occlusion, such as articulating paper, occlusal analysis devices, and digital scanning. **SKILLS:** Perform occlusal adjustments on restorations and prosthetic devices to achieve optimal function and comfort. Conduct comprehensive occlusal	Interactive Lectures Small group discussion Self- directed learning Clinical demonstration	MCQ/SEQ/ VIVA OSCE

		examinations, including static and dynamic occlusion assessments. Diagnose occlusal discrepancies **ATTITUDE:** Demonstrate precision and attention to detail when assessing and adjusting occlusion. Show empathy and sensitivity towards patients experiencing occlusal issues, addressing their concerns with care and understanding.	Clinical demonstration	OSCE
Selection and arrangement of artificial teeth	Dentogenic concept Utilization of biometric guides Anterior and posterior teeth arrangement	**KNOWLEDGE:** Classify different types of artificial teeth along with their characteristics. Enlist the factors influencing the selection of artificial teeth, including tooth shape, size, color, and material. Discuss the criteria for selecting artificial teeth based on individual patient needs. Classify artificial teeth according to material and occlusal morphology Enlist landmarks for complete denture teeth setup Describe anterior tooth setup for maxilla and mandible Describe posterior tooth setup for maxilla and mandible Explain various occlusal concepts for complete **SKILLS:** Perform complete upper and lower tooth setup for an edentulous patient. **ATTITUDE:** Exhibit meticulous attention to	Interactive Lectures Small group discussion Self-directed learning Clinical demonstration	MCQ/SEQ/ VIVA OSCE

		detail in the selection and fitting process to achieve the best possible esthetic and functional outcomes. Respect patient preferences and involve them in decision-making regarding the choice of artificial teeth to ensure they are fully informed and satisfied.	Clinical demonstration	OSCE
The Try-in Appointment	Steps Significance of try-in	**KNOWLEDGE:** Enlist the steps involved in denture try-in Define the purpose and objectives of the complete denture try-in appointment. Describe the components of a complete denture. **SKILLS:** Perform a detailed clinical evaluation of the complete denture during the try-in appointment, assessing fit, comfort, and esthetic alignment Perform precise adjustments to the denture, including modifying the occlusion, contour, and esthetics based on clinical findings and patient feedback. Communicate effectively with dental laboratory technicians to convey any necessary changes and ensure accurate modifications to the denture. **ATTITUDE:** Demonstrate meticulous attention to detail during the try-in process to ensure high-quality outcomes for the patient. Maintain a professional demeanor	Lecture; case-based learning/chair-side learning Clinical demonstration Clinical demonstration	MCQ/SEQ/ VIVA OSCE OSCE

Polished Surfaces	Neutral zone Significance of polished surface	**KNOWLEDGE:** Describe the method for fabrication of a record base Define neutral zone Explain significance of neutral zone in complete dentures Define jaw relations Describe various methods used to record vertical and horizontal jaw relations Define vertical dimension of rest, vertical dimension of occlusion and interocclusal distance Define centric relation Describe significance of centric relation in jaw relation record Enlist effects of increased and decreased vertical dimension of occlusion **SKILLS:** Perform necessary adjustments to dentures before polishing to ensure that the surface is even and comfortable for the wearer. Identify imperfections and rough spots. Identify occlusal errors. Record occlusal relation and make occlusal adjustments. **ATTITUDE:** Commitment to Quality	Learning/chair-side learning/clinical demonstration Clinical demonstration Clinical demonstration	MCQ/SAQ/ VIVA OSCE OSCE

Prosthesis Insertion and Follow-up appointments	Protocol for denture insertion Pressure-indicating paste Occlusal equilibration using BULL's law Protocol for follow-up appointment for a complete denture patient	**KNOWLEDGE:** Describe the protocol for denture insertion Enlist indications for use of pressure-indicating paste Describe various patterns observed while reading pressure- indicating paste Enlist post- insertion instructions provided to patient about denture care Describe occlusal equilibration using BULL rule Describe protocol for follow-up appointment for a complete denture patient **SKILL:** Perform insertion of a complete denture. Instruct a patient about post-insertion care and handling. Perform correction fit, alignment, and occlusion. Conduct a thorough clinical evaluation of the prosthesis after insertion, including checking for proper occlusion, stability, and comfort. Educate patients on how to use and care for their prosthesis effectively. **ATTITUDE**: Exhibit professionalism	Lecture; case-based learning/ chair- side learning/ Clinical demonstration Clinical demonstration	MCQ/SAQ/ VIVA OSCE OSCE
Overdentures	Partial overdenture Complete overdenture	**KNOWLEDGE** Enlist patients' signs and symptoms that frequently preclude an adaptive complete denture experience Define overdentures Enlist advantages and disadvantages of overdentures	Interactive Lectures Small group discussion Self- directed	MCQ/SAQ/ VIVA

		Enumerate indications and contraindications for overdentures. Describe the criteria for selection of teeth as overdenture abutments Describe preparation of overdenture abutments to enhance retention. Describe long- term complications associated with overdenture abutments. **SKILLS** Perform a thorough clinical examination to determine the suitability of overdentures for a patient. Take accurate impressions and record occlusal relationships for overdenture construction. Adjust and fit overdentures to ensure optimal comfort and function for the patient. Demonstrate proficiency in the use of attachments and retention systems for overdentures. **ATTITUDE:** Demonstrate a commitment to high standards of care and patient safety in the delivery of overdenture treatment. Exhibit a patient-centered approach, showing empathy and respect for patient concerns and preferences**.** Demonstrate an attitude of cooperation and willingness to seek advice or referrals when needed.	learning Clinical demonstration Clinical demonstration	OSCE OSCE

Immediate dentures	Interim immediate denture Conventional immediate denture	**Knowledge:** Define immediate dentures. Differentiate between various types of immediate dentures Enumerate advantages and disadvantages of immediate denture treatment Enlist indications and contraindications to immediate denture treatment Describe treatment planning protocol for providing an immediate denture Describe immediate and long-term post- operative care in an immediate denture case. **SKILLS:** Perform accurate diagnostic impressions and record patient occlusion for immediate dentures. Select and arrange teeth in immediate dentures to match the patient's anatomical and esthetic requirements. Fit and adjust immediate dentures in the patient's mouth to ensure proper occlusion, comfort, and function. **ATTITUDE:** Demonstrate a commitment to high-quality care and patient safety throughout the immediate denture process. Display empathy towards patients undergoing tooth extractions and immediate denture placement.	Interactive Lectures Small group discussion Self- directed learning Clinical demonstration Clinical demonstration	MCQ/SAQ/ VIVA OSCE OSCE
Single Dentures	Indications of single denture Complications	**KNOWLEDGE:** Define a single denture Describe treatment planning for single dentures Define single dentures	Interactive Lectures Small group discussion Self-	MCQ/SAQ/ VIVA

		Significance of single denture in prosthetic dentistry. Enlist the types of single dentures (e.g., complete upper or lower dentures) and the materials used in their construction (e.g., acrylic, denture teeth). Describe the clinical and functional considerations involved in the design and fabrication of single dentures, including factors affecting retention and stability. Enlist possible complications associated with single dentures and their management **SKILL**: Perform accurate initial impressions of the edentulous arch and use them to create accurate diagnostic casts. Take precise occlusal records and use them to establish the correct bite relationship for the denture. Conduct thorough try-in appointments to assess and adjust the denture for fit, function, and esthetics. **ATTITUDE:** Demonstrate a commitment to high standards of care and patient safety in the delivery of overdenture treatment. Exhibit a patient-centred approach, showing empathy and respect for patient concerns and preferences. Exhibit professionalism	directed learning Clinical demonstration Clinical demonstration	OSCE OSCE
Maintenance of complete denture	Relining of complete denture Repair of complete denture Copy denture	**KNOWLEDGE:** Differentiate between relining and rebasing Enlist indications for relining and rebasing Describe clinical procedures for	Lecture; case-based learning	MCQ/SAQ/ VIVA

		relining Describe the physical stages tissue conditioner goes through during setting Discuss materials available for relining and rebasing Describe various procedures involved in denture repair Define copy dentures Describe the steps involved in fabrication of copy dentures. **SKILL:** Identify the need for relining, rebasing and copy denture. Identify the problems in existing denture. Perform the clinical and lab steps for relining and rebasing. **ATTITUDE:** Demonstrate a commitment to high standards of care and patient safety in the delivery of overdenture treatment. Exhibit a patient-cantered approach, showing empathy and respect for patient concerns and preferences**.** Demonstrate an attitude of cooperation and willingness to seek advice or referrals when needed.	Clinical demonstration Clinical demonstration	OSCE OSCE
Speech considerations	Speech mechanism Speech problems	**KNOWLEDGE:** Describe speech mechanism. Describe various sounds that may be affected by teeth position. Describe role of denture components on speech sounds Describe prosthetic considerations in diagnosing and managing speech problems	Lecture; case-based learning	MCQ/SAQ/ VIVA

		SKILLS: Perform adjustments to dentures based on their potential impact on speech clarity and patient comfort. **ATTITUDE**: Exhibit professionalism. Develop a compassionate and patient-centred attitude, recognizing that speech changes can be distressing for patients	Clinical demonstration Clinical demonstration	OSCE OSCE

FIXED PROSTHODONTICS LEARNING OUTCOME

Topic	Course Content	Learning Outcome At the end of each module, student will be able to:	MIT	Assessment Tool
Introduction to fixed prosthesis	Comparison of FPD with RPD Components of FPD	**KNOWLEDGE** Define Fixed Prosthodontics Differentiate between fixed and removable prosthesis. Enlist different treatment options of Fixed Partial Dentures. Enlist different components of fixed partial denture. Enlist example of fixed partial denture and fixed restoration. **SKILLS** Identify the need for fixed partial denture. **ATTITUDE:** Develop a compassionate and empathetic approach to understand patients' concerns, needs, and expectations regarding fixed partial dentures. Educate patients about their FPDs options Cultivate a professional demeanor when interacting with patients	Interactive Lectures Case-based learning Small group discussion Clinical demonstration Clinical demonstration	MCQ/ SAQ OSCE OSCE

Evaluation and Treatment planning	History Clinical examination Influence of patient's demographic data on treatment planning Treatment planning of Single missing tooth Treatment planning of multiple missing tooth Mesially tilted molar (orthodontics, operative) Pier abutment Prosthodontic diagnostic index	**KNOWLEDGE** Elaborate treatment planning and sequence. Enlist different phases of fixed prosthodontic treatment Describe different consideration of fixed prosthesis Elaborate fixed treatment options for single missing tooth . Elaborate fixed treatment options for multiple missing tooth Describe Prosthodontic diagnostic index for partially edentulous or completely dentate patient Describe different treatment options of mesially tilted molars Describe different treatment options for pier abutment **Integrated with Orthodontics** Describe different orthodontic treatment options of mesial tilted molars. **Integrated with Operative dentistry** Describe different restorative treatment options for correction of mesially tilted molars. **SKILLS** Gather and analyze information on systemic conditions, previous dental treatments, and patient habits that could impact	Interactive Lectures Case-based learning Small group discussion Clinical demonstration	MCQ/ SAQ OSCE

		prosthetic care. Develop the ability to perform a thorough clinical examination of the oral cavity, including assessment of the adjacent teeth, opposing teeth, prosthetic space, residual ridge and occlusion. Learn to use diagnostic tools and techniques, such as radiographs, diagnostic casts, and periodontal assessments, to aid in the evaluation and treatment planning for prosthodontic cases. Assess the suitability of a patient for fixed partial dentures, including evaluating factors like health of adjacent abutment teeth, ridge resorption, centric and eccentric occlusion. Manage mesial tilted molar case Identify the problems associated with pier abutment and manage it **ATTITUDE** Display good patient communication skills. Active listening Practice good time management. Documentation of patient records Respect and maintain patient confidentiality. Exhibit professionalism	Clinical demonstration	OSCE

Principles of Tooth preparation	Biological considerations Mechanical consideration Aesthetic considerations Patient Positioning	**KNOWLEDGE:** Enlist different principals and guidelines for tooth preparation Elaborate biological principals Explain mechanical principals Elaborate all aesthetics principals of tooth preparations Discuss guidelines of tooth preparation **SKILLS**: Perform accurate tooth preparation for endodontically treated tooth Perform conservative tooth preparation for vital tooth. Select material for patient's FPD based on his/her biological, mechanical and aesthetic concerns Guage the accuracy of tooth preparation in terms of amount of preparation at each surface and inter occlusal clearance Position the patient and operator himself/herself for treatment of any given tooth **ATTITUDE:** Respect and maintain patient confidentiality Follow infection control protocols Cultivate a professional demeanor when interacting with patients	Interactive Lectures Case-based learning Small group discussion Practical illustration on patient Clinical demonstration	MCQ/ SAQ OSCE OSCE
Pontic	Biological considerations	Describe biological, mechanical and aesthetic	Interactive	MCQs/SAQs

designs	Mechanical consideration Aesthetic considerations Pre-treatment assessment Siebert classification	considerations of pontic design Define Pontic and its difference from connector and retainer Classify different pontic designs Differentiate between hygienic and mucosal contact pontic designs Classify and give managements of ridge defect Give different methods of residual ridge preservation **SKILLS:** Select the pontic according to pontic space and ridge area. Preserve residual ridge using different methods Select the pontic in aesthetic and non-aesthetic zone. Modify ridge area for ovate pontic design Manage mesiodistal or incisogingival pontic space discrepancy using visual illusion principles Communicate effectively with lab to get the desired pontic design **ATTITUDE:** Display good patient communication skills Active Listening of patient's concerns Documentation of patient records Exhibit Professionalism	Lectures Case-based learning Small group discussion Clinical demonstration Clinical demonstration	OSCE OSCE

		both with patient and lab.		
Crown Lengthening	Surgical crown lengthening Orthodontic crown lengthening	**KNOWLEDGE:** Describe the properties and location of different types mucosa lining the oral cavity Elaborate different methods of crown lengthening procedure Describe the factors to be consider before executing crown lengthening procedure **Integrated with Orthodontics and periodontology** Describe various methods use of orthodontic crown lengthening **SKILLS**: Identify the need for surgical crown lengthening procedure Execute surgical crown lengthening effectively Identify the need for orthodontic crown lengthening procedure Perform orthodontic crown lengthening using different techniques Evaluate the correctness of orthodontic extrusion and perform surgical crown lengthening accordingly **ATTITUDE:** Documentation of patient records Respect and maintain patient confidentiality. Educate the patient regarding procedure	Interactive Lectures Case-based learning Small group discussion Clinical demonstration Clinical demonstration	MCQ/ SAQ OSCE OSCE

		beforehand Instruct patient regarding post-op care and follow-up Cultivate a professional demeanor when interacting with patients		
Tooth Preparation for fixed prosthesis	All metal restoration All ceramic Metal ceramic Partial coverage restoration Margin designs	**KNOWLEDGE:** Enlist indications, contraindications, advantages and disadvantages of complete cast crown Elaborate preparation steps of different surfaces of tooth for all metal FPDs Enlist indications, contraindications, advantages and disadvantages of all ceramic restoration Elaborate preparation steps of different surfaces of tooth for all ceramic FPDs Enlist indications, contraindications, advantages and disadvantages of metal ceramic restoration Elaborate preparation steps of different surfaces of tooth for metal ceramic FPDs Enlist indications, contraindications, advantages and disadvantages of partial veneer crown Elaborate preparation steps of different surfaces of	Interactive Lectures Small group discussion Case based learning	MCQs/SAQs

		tooth for partial coverage restorations Enlist different methods to add retention in preparation design Enlist different margin designs Enlist indications, advantages and problems of each margin design Classify margin designs based on location and their indications Elaborate preparation steps of different margin designs for all types of FPDs **Integrated with Operative dentistry** Enlist indications, contraindications, advantages and disadvantages of partial coverage crown Elaborate preparation steps of different surfaces of tooth for partial coverage restorations Enlist indications, contraindications, advantages and disadvantages of Veneers Elaborate preparation steps of different surfaces of tooth for Veneers **SKILLS**: Prepare abutment tooth for all different types of full coverage and partial coverage restoration Evaluate correctness of tooth prep (amount of preparation, tapering of	Clinical demonstration Hands-on	OSCE

		walls margin design and margin location Assess occlusal clearance using different methods Manage any problem occur during prep by modification of design of tooth prep Modify prep b y adding different types of retentive features in preparation where indicated. **ATTITUDE:** Display good patient communication skills. Active listening Follow infection control protocols Documentation of patient records Respect and maintain patient confidentiality. Cultivate a professional demeanour when interacting with patients.	Clinical demonstration	OSCE
Tissue Management & Impression Method	Saliva control Gingival retraction Impression material Impression technique	**KNOWLEDGE**: Elaborate different methods salivary control for impression Describe different modes of gingival retraction Elaborate different impression technique **Integrated with Dental Materials** Classify and Give properties of different impression materials used for FPD. **SKILLS:**	Interactive Lectures Small group discussion Case based learning	MCQ/SAQ

		Manage salivary control for impression Retract gingiva for accurate impression recording of subgingival area Select appropriate size of impression trays Select appropriate impression material Manipulation of impression material Record impression accurately with different techniques Evaluate correctness of impression Correct any deficiency impression Handling and storing impressions to avoid distortion or damage before sending them to the dental laboratory. **ATTITUDE:** Display good patient communication skills. Follow cross infection control protocol Documentation of patient records Respect and maintain patient confidentiality. Cultivate a professional demeanour when interacting with patients	Clinical demonstration Hands-on Clinical Demonstration	OSCE OSCE

Temporization phase in FPDs fabrication	Requirements/ considerations Materials of interim FPD Procedure of temporization Material and procedure of luting of interim FPD	**KNOWLEDGE**: Enlist biological, mechanical and aesthetic considerations for interim Enlist different materials that can be used for temporary restoration Explain significance of interim restoration Enlist requirements of interim restoration Elaborate various types of interim restoration Explain different techniques of fabricating interim restorations Indications of temporization Enlist indications of cast metal interim restoration **SKILLS:** Fabricate index using different materials Fabricate temporary fixed prosthesis using different techniques Reline, adjust and lute temporary prosthesis **ATTITUDE:** Counsel the patient about requirement of temporary prosthesis and possible complications that can occur if temporary prosthesis is avoided Strictly follow the cross infection control protocols Refer the patient to concerned specialist if required. Cultivate a professional	Interactive Lectures Small group discussion Case based learning Clinical demonstration Hands-on Clinical demonstration	MCQ/SAQ OSCE OSCE

		demeanor when interacting with patients		
Luting Agents and Cementation Procedures	Interim cementation Definitive cementation Materials of cementation Cementation technique	**KNOWLEDGE:** Differentiate between interim and definitive cementation Describe technique for cementation of different types of restoration. **Integrated with Dental Materials** Describe various materials used for temporary or permanent cementation of veneers, crown or FPDs **SKILLS:** Select an appropriate material for cementation of any given fixed prosthesis Manipulation (proportionate, mixing and application) of luting cement. Follow procedural steps of luting method to achieve best results. Identify and troubleshoot common issues and errors in luting FPD. **ATTITUDE:** Display good patient communication skills. Follow infection control protocol. Develop a meticulous attitude toward ensuring	Interactive Lectures Small group discussion Self-directed learning Clinical demonstration Hands-on Clinical demonstration	MCQ/SAQ OSCE OSCE

		the optimal luting Cultivate a professional demeanor when interacting with patients Emphasize the importance of taking responsibility for the quality of the luting and understanding the impact of errors on treatment outcomes.		
Minimal Preparation FPDs	Types of minimal preparation bridges Tooth preparation for RBFPD Cementation of RBFPD	**KNOWLEDGE:** Describe different types of resin retained prosthesis Enlist indications, contraindications, advantages and disadvantages of Resin bonded FPDs Describe preparation steps and designing for anterior RPFPD Describe preparation steps and designing for posterior RPFPD Enlist steps of bonding of RBFPD Know when to refer to specialist. **SKILLS:** Select an appropriate RBFPD for any given scenario Prepare the anterior abutment tooth for retainer of RBFPD Design the anterior RBFPD Prepare the posterior abutment tooth for retainer of RBFPD Design the posterior RBFPD	Lectures; Case-based learning Chair-side learning Clinical demonstration	MCQ/SAQ OSCE

		Select an appropriate luting material for each type of RBFPD Follow the steps for optimal bonding of resin bonded FPD Identify and troubleshoot common issues of preparation and luting of RBFPD **Attitude:** Display good patient communication skills. Counsel the patient about existing conditions and possible options. Follow infection control protocol. Develop a meticulous attitude toward ensuring the accuracy and precision of tooth preparation and bonding of RBFPD Make referral to specialist when required.	Clinical demonstration	OSCE
Occlusion in FPD OMFS	Temporomandibular Joint. Mandibular movement. Occlusal determinants Bruxism Centric relation Optimum occlusion Pathogenic occlusion Occlusal	**KNOWLEDGE** Describe the anatomy of temporomandibular joint Describe the mandibular ligaments (origin, insertion and function) Briefly explain the muscles of mastication (origin, insertion and function) Explain Posselt's three dimensional representation of mandibular movement Enlist anterior and posterior occlusal determinants and their impact on restoration Enlist differences between functional and parafunction movements Elaborate different types of articulation and their clinical implications Enlist the features of	Interactive Lectures Self-directed learning Small group discussion	MCQ/ SAQ

	treatment	mutually protected articulation Describe the signs and symptoms of pathogenic occlusion Enlist the objectives of occlusal treatment Describe nonsurgical management options for TMJ disorders. **Integrated with OMFS** Describe the anatomy of temporomandibular joint Describe surgical management options for TMJ disorders. **SKILLS** Diagnose patient's occlusion to be optimal or pathogenic Identify the need for occlusal treatment Fabricate occlusal device using direct or indirect technique Appropriately adjust the occlusion of occlusal splint to achieve the maximum benefits **ATTITUDE:** Develop a compassionate and empathetic approach to understanding patients' concerns, needs, and expectations regarding occlusion. Educate patients about their occlusal problem and possible treatment options Cultivate a professional demeanor when interacting with patients Instruct patient regarding follow up visits and post op care	Clinical demonstration Clinical demonstration	OSCE OSCE

Shade selection and lab communication	Factors affecting tooth color Different methods of shade selection for FPD Protocol of shade selection Work authorization for,	**KNOWLEDGE** Explain different attributes of color. Describe variable factors affecting tooth color determination Explain translucency, fluorescence and opalescence Elaborate different shade matching protocols Describe limitations of shade matching. Devise the lab prescription form for better communication between clinician and lab personnel. **SKILL** Select appropriate shade for prosthesis using different shade guides. Make a customized shade distribution chart of any patient given Fabricate putty index of temporary restoration Display good communication skills with lab to achieve the desired shade and design of FPD. **ATTITUDE** Active listening Documentation of patient records Respect and maintain patient confidentiality. Exhibit professionalism	Interactive Lectures Case-based learning Small group discussion Clinical demonstration Clinical demonstration	MCQ/ SAQ OSCE OSCE

Management of endodontically treated teeth	Direct foundation restoration Indirect post and core restoration	**KNOWLEDGE:** Explain different materials available for foundation restoration (types, advantages, disadvantages, use and precautions) Elaborate step-by-step procedure for amalgam core restoration Elaborate step-by-step procedure for glass ionomeric core restoration Elaborate step-by-step procedure for composite resin core restoration Describe step-by-step procedure for luting of cast post and core restoration **Integrated with endodontics** Classify various options available for endo-post Elaborate step-by-step procedure of preparation for endo-post, selection and cementation of endo-post. **SKILL:** Identify the need for foundation restoration Restore endodontically treated tooth with different post and core materials Cement cast post and core restoration **ATTITUDE:** Documentation of patient records Respect and maintain patient confidentiality. Educate the patient regarding procedure	Interactive Lectures Case-based learning Small group discussion Clinical demonstration Clinical demonstration	MCQs/SAQs OSCE OSCE

		beforehand Instruct patient regarding post-op care and follow-up Cultivate a professional demeanor when interacting with patients		

IMPLANT PROSTHODONTICS LEARNING OUTCOME

Topic	Course Content	Learning Outcome	MIT	Assessment Tool
Introduction to Implants and Osseointegration	Introduction Osseointegration factors Osseointegration materials Components of implant	**KNOWLEDGE:** Define Osseointegration Describe osseointegration on a macroscopic and microscopic level. Explain thread geometry, materials and body design of endosseous implants Explain force distribution on endosseous implants Enumerate the types of implants Enumerate the use of implant components (Body , abutment) Explain abutment connection and surface treatment of implants Enlist various types of attachments use in implant fixed prosthesis and implant overdenture **SKILLS:** Select an appropriate implant considering macro and micro structure design and surface treatments Assess osseointegration factors related to patient to predict the prognosis of treatment	Interactive Lectures Case-based learning Small group discussion Clinical demonstration	MCQs/SAQs OSCE

		ATTITUDE: Documentation of patient records Respect and maintain patient confidentiality. Educate the patient regarding procedure beforehand Instruct patient regarding post-op care and follow-up Cultivate a professional demeanor when interacting with patients.	Clinical demonstration	OSCE
Implant Prosthesis	Implant supported prosthesis Types of prosthesis Implant overdentures	**KNOWLEDGE:** Classify implant prosthesis according to Misch classification Differentiate between fixed and removable implant prosthesis Enumerate the advantages and disadvantages of fixed and removable prosthesis Explain FP1, FP2 and FP3 prosthesis with their advantages, disadvantages and indications Enlist the indications of RP4 and RP5 prosthesis Describe the advantages and disadvantages of implant overdenture Enumerate the types of overdenture configurations OD1 to	Interactive Lectures Case-based learning Small group discussion	MCQs/SAQs

		OD5. **SKILLS:** Select an appropriate implant fixed prosthesis for implant restoration Select an appropriate implant overdenture option for implant restoration Manage implant surgery shortcomings by appropriate selection of prosthetic components Restore implant with any fixed or removable prosthesis **ATTITUDE:** Display good patient communication skills. Follow infection control protocol. Educate the patient regarding procedure beforehand Instruct patient regarding post-op care and follow-up Deal patient and lab professionally	Clinical demonstration Clinical demonstration	OSCE OSCE
Impression making in implant	Components for implant impression Direct impression Indirect impression	**KNOWLEDGE:** Enumerate the use of implant components such as impression coping, lab analog, permucosal abutment, open and closed tray impressions. Describe the direct and indirect methods of impression taking.	Interactive Lectures Case-based learning Small group discussion	MCQs/SAQs

		SKILLS: Select an appropriate material and technique for implant impression Perform direct impression of implant after placement of prosthetic abutment Perform indirect impression of implant using direct transfer coping / pickup coping Perform indirect impression of implant using indirect transfer coping Evaluate implant impression for correctness Attach lab analogue with impression copings accurately Guide the lab for implant fixed prosthesis **ATTITUDE:** Documentation of patient records Respect and maintain patient confidentiality. Display good patient communication skills. Follow infection control protocol Cultivate a professional demeanor when interacting with patients.	Clinical demonstration Clinical demonstration	OSCE OSCE

Single Tooth Restoration	Case Selection Advantages Disadvantages Procedure	**KNOWLEDGE:** Enumerate the advantages and disadvantages of single tooth replacements Explain the guidelines for ideal implant placement in single tooth restorations Enumerate the contraindications to single tooth replacement **SKILLS:** Select an appropriate abutment for single implant Record impression using different (direct , indirect) technique Evaluate impression for correctness Guide lab regarding design, shade and occlusion of prosthesis to achieve the optimal restoration Lute the cement retained implant crown Insert screw retained crown. **ATTITUDE:** Documentation of patient records Respect and maintain patient confidentiality. Display good patient communication skills. Educate the patient regarding procedure beforehand Instruct patient regarding post-op care	Interactive Lectures Case-based learning Small group discussion Clinical demonstration Clinical demonstration	MCQs/SAQs OSCE OSCE

		and follow-up Follow infection control protocol Cultivate a professional demeanor when interacting with patients.		

MAXILLOFACIAL PROSTHODONTIC LEARNING OUTCOMES

Topic	Course Content	Learning Outcome At the end of each module, student will be able to:	MIT	Assessment Tool
Introduction	Classification of maxillary defects Classification of mandibular defects Types of obturators Advantages	**KNOWLEDGE:** Classify maxillary defects (Armany's classification) Classify mandibular defects (Cantor and Curtis classification) Enlist different types obturators based on time of fabrication Enlist advantages for use of obturator **Integrate with OMFS** Classify maxillofacial defects Describe Armany's classification of maxillary defects Describe Cantor and Curtis classification of mandibular defects **SKILLS:** Identify the class of maxillary or mandibular defects and problems associated with that class. Identify the type of obturator based on timings/stage at which prosthesis is given **ATTITUDE:** Display good patient communication skills. Active listening Follow infection control protocols Documentation of patient records Respect and maintain patient confidentiality. Cultivate a professional	Interactive Lectures Small group discussion Case based learning Clinical demonstration Clinical demonstration	MCQs, SAQs OSCE OSCE

		demeanor when interacting with patients		
General Design Principles	Support Retention Stability Pre-Surgical Prosthodontist Suggestions	**KNOWLEDGE:** Describe different means of support for obturator Elaborate means to provide retention to obturator Elaborate means to aid stability of obturator Describe Prosthodontist suggestions to surgeon before surgery to get maximum prosthodontic advantage from surgery under given circumstances. **Integrate with OMFS:** Describe Prosthodontist suggestions to surgeon before surgery to get maximum prosthodontic advantage from surgery under given circumstances. **SKILL:** Design obturator prosthesis for adequate support, retention and stability. Evaluate and assess the need of surgical modifications of defect to improve prosthetic outcome Provide complete guide lines to oral surgeon regarding surgery to get maximum prosthodontic advantage from surgery **ATTITUDE:** Display good patient communication skills. Active listening Follow infection control protocols Documentation of patient records Respect and maintain patient confidentiality.	Interactive Lectures Small group discussion Case based learning Clinical demonstration Clinical demonstration	MCQs/SAQs OSCE OSCE

		Cultivate a professional demeanor when interacting with patients		
Mandibulectomy Prosthesis	Indications Support Retention Stability	**KNOWLEDGE:** Enlist the indications of Mandibulectomy prosthesis Describe means for support of mandibulectomy prosthesis Elaborate means to provide retention to mandibulectomy prosthesis Elaborate means to aid stability of mandibulectomy prosthesis Design mandibulectomy prosthesis for any given class **SKILL:** Design the mandibulectomy Prosthesis for any given class of defect Identify and troubleshoot common issues and errors of interim obturator **ATTITUDE:** Display good patient communication skills. Active listening Follow infection control protocols Documentation of patient records Respect and maintain patient confidentiality. Cultivate a professional demeanor when interacting with patients	Interactive Lectures Small group discussion Case based learning Clinical demonstration Clinical demonstration	MCQs/SAQs OSCE OSCE

REMOVABLE PROSTHODONTIC LEARNING OUTCOMES

Topic	Course Content	Learning Outcome At the end of each module, student will be able to:	MIT	Assessment Tool
Introduction to Removable Partial Denture.	Introduction Classification of partially edentulous arches Parts of partial dentures Treatment Planning in Prosthodontics	**KNOWLEDGE:** Differentiate between tooth-supported and tooth & tissue supported partial dentures Describe six phases of partial denture service Enlist reasons of failure of clasp-retained partial dentures Enumerate requirements of an acceptable classification method Describe Kennedy's classification Enlist Applegate's rules Describe advantages and drawbacks of Kennedy's classification **SKILLS**: Identify the need for removable partial denture **ATTITUDE:** Develop a compassionate and empathetic approach to understand patients' concerns, needs, and expectations regarding removable partial dentures. Educate patients about their RPD options Cultivate a professional demeanor when interacting with patients	Interactive Lectures Small group discussion Clinical demonstration Clinical demonstration	MCQ/ SAQ OSCE OSCE

Biomechanics of Removable Partial Denture	Biomechanical considerations Possible movement of RPD Design process of rpd Implant impact on RPD movement	**KNOWLEDGE**: Elaborate the design process for RPD Describe possible movements of a partial denture and various components that counter these movements Describe Implant impact on RPD movement? **SKILLS:** Identify the possible movements of RPD. Design the RPD which can tolerate all possible movements by incorporating different components at optimal location or with the addition of implant. Counsel the patient about possible limitations of RPD beforehand so as to avoid unrealistic expectations of patient. **ATTITUDE:** Display good patient communication skills. Documentation of patient records Respect and maintain patient confidentiality. Cultivate a professional demeanor when interacting with patients	Interactive Lectures Small group discussion Self- directed learning Clinical demonstration Clinical demonstration	MCQ/SAQ OSCE OSCE

Connectors	Role of major connectors in control of prosthesis movement Maxillary major connectors Mandibular major connectors Minor connectors	**KNOWLEDGE**: Enlist the guidelines for location and design of major connectors Describe the characteristics of major connectors contributing to health and wellbeing. Describe indications, contraindications and characteristics of various maxillary and mandibular major connectors Define minor connectors Describe function, form and location of minor connectors Define tissue stops and their functions **SKILLS:** Identify the role of major and minor connectors in prosthesis movement Design an RPD with least movements. Design an RPD considering health and wellbeing of oral tissues Counsel the patient about possible limitations of RPD beforehand so as to avoid unrealistic expectations of patient. **ATTITUDE:** Display good patient communication skills. Documentation of patient records Respect and maintain patient confidentiality. Cultivate a professional demeanor when interacting with patients Refer the patient to specialist where indicated.	Interactive Lectures Small group discussion Self- directed learning Clinical demonstration Clinical demonstration	MCQ/SAQ OSCE OSCE

Rest and rest seats	Role of rest in control of prosthesis movement Different forms of rest Implant as rest	**KNOWLEDGE:** Define rest and rest seat Classify rests Enlist advantages of rests Describe the outline form of an occlusal rest and rest seat Describe various forms of rests in detail. **SKILLS:** Select an appropriate rest for each primary abutment Design the rest to limit the movement of prosthesis . identify the limitations of case and educate patient beforehand. **ATTITUDE:** Display good patient communication skills. Develop a meticulous attitude toward ensuring the accuracy of designing the rest form to achieve the best results. Cultivate a professional demeanor when interacting with patients.	Interactive Lectures Small group discussion Self-directed learning Clinical demonstration Clinical demonstration	MCQ/SAQ OSCE OSCE

Retainers	Direct Retainer role in prosthesis movements Criteria for selection Types of direct retainers Types of clasp assemblies Amount of retention Indirect Retainers	**KNOWLEDGE:** Define retainers Classify direct retainers Describe the criteria for selecting clasp design Describe factors affecting amount of retention Describe basic principles of clasp design Enlist indications and contraindications for circumferential and bar clasps Describe RPI and RPA systems Describe internal attachments Define indirect retainers Describe factors that influence the effectiveness of indirect retainers Describe auxiliary functions of indirect retainers Describe various forms of indirect retainers. **SKILLS:** Select an appropriate retainer for each primary abutment Design the clasp to limit the movement of prosthesis along with avoiding excessive forces on abutment tooth. Identify the limitations of case and educate patient beforehand to avoid unrealistic expectations. Identify the need for indirect retainer Design the Indirect retainer to limit the movement of prosthesis along with avoiding excessive forces on abutment tooth **ATTITUDE:** Display good patient communication skills. Develop a meticulous attitude toward designing direct and indirect retainers to achieve the optimal prosthetic outcomes. Cultivate a professional demeanor when interacting with patients	Interactive Lectures Small group discussion Self-directed learning Clinical demonstration Clinical demonstration	MCQ/SAQ OSCE OSCE

Denture Base Considerations and Relining	Role of denture base in prosthesis movements Ideal denture base material Methods of attaching artificial teeth Stress breakers	**KNOWLEDGE:** Describe functions of tooth-supported and tooth & tissue supported denture bases Describe methods of attaching artificial teeth Enlist different relining materials Enlist indications of relining Describe step by step procedure of relining of denture Describe stress-breakers **Integrated with dental materials** Compare advantages and disadvantages of metal and resin denture bases **SKILLS**. Identify the role of denture base in prosthesis movements and design denture base for tooth supported and tooth and tissue supported RPD to limit movement of prosthesis Select the appropriate material of denture base considering local and systemic factors Attach different artificial teeth materials to different denture base material Use stress breakers where indicated **ATTITUDE:** Display good patient communication skills. Documentation of patient records. Cultivate a professional demeanor when interacting with patients Refer the patient to specialist where indicated.	Interactive Lectures Small group discussion Case based learning Clinical demonstration Clinical demonstration	MCQ/SAQ OSCE OSCE

Surveying	Types of surveyor Surveying the diagnostic cast Surveying the master cast Tripoding	**KNOWLEDGE:** Define surveying Differentiate between various types of surveyors Enlist objectives of surveying Describe factors which determine the path of placement and removal Describe tripoding and its types **SKILLS:** Perform surveying of diagnostic cast to decide the path of insertion and removal of RPD Perform surveying of diagnostic cast to decide the location of components of RPD Perform surveying of diagnostic cast to plan the mouth preparation accordingly Use surveyor on master cast for evaluation of path of insertion selected and trimming the parallel blockouts Perform tripoding of cast with the help of surveyor **ATTITUDE:** Exhibit meticulous attention to detail in selecting the path of insertion and mouth prep to achieve the best prosthetic outcomes. Documentation of patient records. Cultivate a professional demeanor when interacting with patients.	Interactive Lectures Small group discussion Self- directed learning Lab demonstration Clinical demonstration	MCQ/SAQ OSCE OSCE

Designing of Removable Partial Denture	Difference in prosthesis support Tooth supported RPD Tooth and tissue supported RPD Essentials of RPD design Implant considerations in design	**KNOWLEDGE:** Describe the difference in prosthesis support and influence on design Differentiate between two main types of removable partial denture. Describe the systematic approach of designing RPD Describe differential support concept in tooth and tissue supported RPD Describe various components of RPD and their best use to limit the prosthesis movement **SKILLS:** Identify the roles of different components of RPD in prosthesis movements. Demonstrate differential support for distal extention base RPDs Design the RPD by selecting and appropriately positioning the components on desired areas of abutment or tissues to achieve the best possible prosthetic outcomes Identify the need of implant in improving the prognosis of RPD **ATTITUDE:** Demonstrate precision and attention to detail when designing different components of RPD. Show empathy and sensitivity towards patients and avoid his/her unrealistic expectations by communicating the limitations of case beforehand. Cultivate a professional demeanor when interacting with patients Refer the patient to specialist where indicated.	Interactive Lectures Small group discussion Self- directed learning Clinical demonstration Clinical demonstration	MCQ/SAQ OSCE OSCE

Impressions for RPD	Impression materials Impression Techniques Altered Cast Techniques	**KNOWLEDGE:** Explain factors affecting support of distal extension base Describe different impression techniques use for distal extension base impression Elaborate altered cast technique (its indication, method, advantages) **Integrated with Dental material** Classify and give properties of different impression materials use for RPD **SKILLS:** Select appropriate size of impression trays Select appropriate impression material Select appropriate impression technique for distal extension base Manipulation of impression material Record impression accurately with different techniques Evaluate correctness of impression Correct any deficiency impression Perform handling and storing impressions to avoid distortion or damage before sending them to the dental laboratory. **ATTITUDE:** Display good patient communication skills. Follow cross infection control protocol Documentation of patient records Respect and maintain patient confidentiality. Cultivate a professional demeanor	Interactive Lectures Small group discussion Case based learning Clinical demonstration Clinical demonstration	MCQ/SAQ OSCE OSCE

		when interacting with patients		
Mouth Preparations for RPD	Diagnosis and Treatment Planning Preparation of Mouth for Removable Partial Dentures Abutment preparation for RPD	**KNOWLEDGE** Enumerate objectives of prosthodontic treatment Enlist indications for removable partial dentures Enlist steps involved in diagnosis of a patient Enlist available prosthodontic treatment options Describe factors that affect prosthesis selection Describe conditioning of abused and irritated oral tissues. **Integrated with Oral Surgery** Describe oral surgical preparation for removable partial denture patient **Integrated with Operative Dentistry** Describe abutment preparations for RPD **SKILLS:** Identify the need of mouth and abutment preparations to improve the prognosis of RPD. Execute mouth preparation to enhance the longevity of RPD Prepare abutment tooth for guide planes, rest seats and retentive undercuts to improve the	Interactive Lectures Small group discussion Case based learning Clinical demonstration	MCQ/SAQ OSCE

		prosthodontic outcome. Evaluate the effectiveness of mouth and abutment preparation **ATTITUDE:** Display good patient communication skills. Active listening Follow infection control protocols Documentation of patient records Respect and maintain patient confidentiality. Cultivate a professional demeanor when interacting with patients	Clinical demonstration	OSCE
Jaw relation record	Occlusal rims Orientation relation Vertical relation Horizontal Jaw Relations Centric relation Centric Occlusion Maximum intercuspation Techniques to record Centric Relation	**KNOWLEDGE:** Define jaw relation records. Identify the different types of jaw relations (e.g., centric occlusion, centric relation, and functional occlusion) and their clinical significance. Describe the anatomical and functional considerations that impact jaw relation records. Discuss the materials used for jaw relation records and their properties. Describe the procedures for recording various jaw relations, including techniques for obtaining accurate records. **SKILLS:** Evaluate patients existing occlusion both static and functional Accurately perform jaw relation records using various techniques (e.g.wax, ZnO eugenol, wax rims & silicon materials) to capture centric occlusion and other relevant relationships. Assess the accuracy of jaw relation records through clinical checks and	Interactive Lectures Small group discussion Self- directed learning Clinical demonstration	MCQ/SEQ/ VIVA OSCE

		adjustments. Manage materials effectively to record jaw relations. Utilize articulators to transfer jaw relation records accurately to the dental laboratory. **ATTITUDE:** Display good patient communication skills. Follow infection control protocol. Develop a meticulous attitude toward ensuring the accuracy and precision of jaw relation record to achieve optimal prosthetic outcomes. Exhibit professionalism.	Clinical demonstration	OSCE
Try In and insertion of RPD	Protocol for partial denture trial and insertion Pressure-indicating paste. Occlusal equilibration using BULL rule	**KNOWLEDGE:** Describe the protocol for try in visit of partial denture Describe the protocol for denture insertion Enlist indications for use of pressure-indicating paste Describe various patterns observed while reading pressure- indicating paste Enlist post- insertion instructions provided to patient about denture care Describe occlusal equilibration in RPD **SKILL:** Perform try in and insertion of a complete denture with all protocols Instruct a patient about post-insertion care and handling. Perform correction fit, alignment, and occlusion. **ATTITUDE**: Display good patient communication skills.	Lecture; case-based learning/ chair- side learning/ Clinical demonstration	MCQ/SAQ/ VIVA OSCE

		Follow cross infection control protocol Documentation of patient records Respect and maintain patient confidentiality. Cultivate a professional demeanor when interacting with patients	Clinical demonstration	OSCE
Maintenance of RPD	• protocol for follow-up appointment for removable partial denture patient • Reline • Rebase • Repair	**KNOWLEDGE** Describe protocol for follow-up appointment for a partial denture patient Enlist different relining materials Enlist indications of relining Describe step by step procedure of relining of denture Differentiate between relining and rebasing Enlist indications of rebasing Elaborate different reasons of denture fracture Describe protocol of repair a fractured denture. **SKILL** Conduct a thorough clinical evaluation of the prosthesis after insertion, including checking for proper occlusion, stability, and comfort. Educate patients on how to use and care for their prosthesis effectively. Evaluate an old denture and identify the need of denture reline or rebase Perform relining of denture using different techniques and materials Repair a fractured denture following all protocols **ATTITUDE**: Display good patient communication skills. Follow cross infection control protocol Documentation of patient records Respect and maintain patient	Lecture; case-based learning/ chair- side learning/ Clinical demonstration Clinical demonstration	MCQs/SAQs OSCE OSCE

		confidentiality. Cultivate a professional demeanor when interacting with patients		
Miscelleno use dentures	Spoon Denture	**Knowledge:** Enlist the clinical indications and contraindications for the use of spoon dentures in various patient scenarios. Enlist the materials commonly used in the fabrication of spoon dentures. **Skill:** Perform steps for fabrication of a spoon denture, demonstrating proficiency in both the clinical and laboratory techniques required. Perform fitting and adjustment procedures on a spoon denture, ensuring optimal comfort and function for the patient. **Attitude:** Exhibit professionalism		
	Every denture	**Knowledge:** Enlist the clinical indications and contraindications for the use of every denture in various patient scenarios. Enlist the materials commonly used in the fabrication of every denture. **Skill:** Perform steps for fabrication of a every denture, demonstrating proficiency in both the clinical and laboratory techniques required. Perform fitting and adjustment procedures on a every denture, ensuring optimal comfort and function for the patient. **Attitude:** Exhibit professionalism		

DEPARTMENTAL INVOLVEMMENT IN INTEGRATED TEACHINGS

CORE SUBJECT: PROSTHODONTICS

	1ST YEAR	2ND YEAR	3RD YEAR	4th YEAR
Subject		**DENTAL MATERIALS**		
Topic		**Impression materials**		
SLOs		Demonstrate selection of appropriate impression material for various clinical situations, such as single-tooth restorations, full arch impressions. Demonstrate correct proportioning and mixing of impression materials to achieve the desired consistency and avoid issues like air bubbles or improper setting Demonstrate accurate handling and pouring of impressions		
Topic		**Denture base materials**		
SLOs		Describe various methods of polymerization of denture base materials. Describe the clinical application, manipulation, processing, and methods of attachment of metallic framework and teeth to denture bases. Describe the various procedures involved in the fabrication of denture base materials.		

Topic		**Gypsum products**		
SLOs		Demonstrate pouring of accurate and detailed models or casts from dental impressions, including techniques for trimming and finishing		
Topic		**Waxes**		
SLOs		Demonstrate appropriate selection and use the appropriate type of dental wax for various clinical situations Demonstrate appropriate manipulation of dental waxes, including carving, shaping and create accurate wax patterns		
Topic		**Ceramics**		
SLOs		Describe the clinical application and indications for metal ceramic and all ceramic restorations Demonstrate appropriate selection of ceramics based on factors like esthetics, strength requirements, and patient-specific considerations. Explain the steps involved in the fabrication of ceramic and metal ceramic restorations		
Topic		**Separating media**		
SLOs		Demonstrate correct application of separating media to ensure effective separation, including techniques for even application. Demonstrate appropriate selection of separating		

		media for various clinical situations, such as separating wax patterns from investment materials or separating acrylic resin from casts		
Topic		**Denture lining and base materials**		
SLOs		Describe the criteria for case selection for relining and rebasing procedures, their clinical application and appropriate selection of materials		
Topic		**Tissue conditioners**		
SLOs		Describe the steps of clinical manipulation of tissue conditioners. Describe the criteria for case selection for tissue conditioners, their clinical indication and contraindication		
Topic		**Metals used in dentistry (Ni-Cr, Co-Cr)**		
SLOs		Describe clinical applications for different metal alloys, such as in crowns, bridges, dentures, and other restorations. Explain the laboratory steps involved in the processing of dental alloys (Ni-Cr, Co-Cr) Explain the selection of material for soldering and welding and their laboratory procedures.		
Topic		**Casting procedures**		
SLOs		Describe the steps and methods involved in casting procedures. Demonstrate appropriate		

		selection of investment materials for different dental applications, such as casting for crowns, bridges, and partial dentures.		
Subject				**OMFS**
Topic				Pre-prosthetic surgery
SLOs				Be able to formulate a plan for prosthetic rehabilitation of oral cavity, including diagnostic evaluation and pre-surgical assessment for establishing need of pre-prosthetic surgery.
Subject				**Orthodontics**
Topic				Management of Cleft Lip and Palate patient.
SLOs				Describe prosthetic and rehabilitative interventions that can assist with functional and esthetic outcomes for cleft patients.
Subject				**Operative**
Topic				Fixed Prosthodontics
SLOs				Mentioned in FPD Table

LEARNING RESOURCES

Recommended books:

For Complete Dentures:

1. Prosthodontic Treatment for Edentulous Patients by Zarb 13th Ed
2. Essentials of Complete Denture Prosthodontics by Sheldon and Winkler 3rd Ed

For Removable Partial Dentures:

1. Removable Partial Prosthodontics by Mc Crackens 13th Ed
2. Removable Partial Prosthodontics by Grasso and Miller 2nd Ed

For Crown and Bridge

1. Contemporary Fixed Prosthodontics by Stephen F. Rosenstiel 5th Ed

Maxillofacial Prosthetics:

1. CLINICAL MAXILLOFACIAL PROSTHETICS by Thomas D. Taylor.

Dental Implants:

1. DENTAL IMPLANT PROSTHETICS by Carl E. Mish

Reference books:

1. Watt and Mcgregor, Designing Complete Dentures (1st ed.). W. B. Saunders.
2. Management of TEMPOROMANDIBULAR DISORDERS and OCCLUSION by Okeson
3. Stewart's CLINICAL REMOVABLE PARTIAL PROSTHODONTICS.

OPERATIVE DENTISTRY

WELCOME NOTE BY HEAD OF DEPARTMENT

Welcome to your final year in the Department of Operative Dentistry! This is a crucial time as you transition from students to skilled dental professionals. Our department is dedicated to providing you with the knowledge, hands-on experience, and mentorship needed to excel. Take full advantage of our state-of-the-art facilities, expert faculty, and clinical opportunities. This year will refine your technical skills and deepen your understanding of patient care. Approach each case with curiosity, dedication, and empathy. We are here to support you in every step of this journey, and I am confident you will succeed with professionalism and excellence.

RATIONALE FOR THE COURSE/ DEPARTMENT

In Pakistan, dental issues like caries, periodontal disease, and endodontic infections are widespread, largely due to poor oral hygiene, sugary diets, and limited access to care, especially in rural areas. Dental caries is the most common, leading to a high demand for restorative treatments. Root canal infections often result from untreated cavities, while non-carious cervical lesions are increasing due to improper brushing and stress. Cosmetic dentistry is gaining popularity in urban areas. However, public awareness about preventive care remains low, and access to quality treatment is limited, underscoring the need for better education and healthcare resources.

Operative dentistry is a crucial part of dental education, providing students with the skills to diagnose, prevent, and treat common dental issues like caries, trauma, and endodontic infections. The scope includes restorative procedures like fillings, crowns, veneers, and root canal treatments, along with preventive care to maintain oral health. This field also covers aesthetic dentistry, focusing on improving the appearance of teeth. Overall, Operative dentistry equips students with essential skills to provide comprehensive functional and aesthetic dental care.

Innovative teaching methods in Operative Dentistry include **Problem-Based Learning (PBL)**, where students work in groups to solve clinical scenarios, fostering critical thinking and collaboration. The **flipped classroom** allows students to review materials at home and engage in hands-on activities in class, enhancing comprehension. **Simulation-based learning** offers a safe environment for skill development, while **peer teaching** reinforces understanding and communication. **Case-based learning** applies theoretical knowledge to real cases, and **competency-based education** ensures mastery of essential skills. **Inter-professional education** promotes teamwork, **service-learning** integrates community service, **digital platforms** enhance flexibility, and **reflective practice** encourages self-awareness and improvement in clinical skills.

Support options for students in Operative Dentistry include well-equipped **clinic**, **simulation labs**, and **research facilities** to enhance hands-on learning and innovation. **Faculty support** through mentorship, dedicated office hours for tutoring, and interdisciplinary collaboration fosters personalized learning. **Clinical experience opportunities**, such as hands-on training and community service, provide practical exposure. **Peer support networks**, including study groups and organizations, promote teamwork, while **academic resources** like libraries and workshops enrich learning. **Continuous feedback** and **wellness services** ensure students' progress and well-being throughout their education.

DEPARTMENTAL DETAILS

Head of department	Prof. Dr. Muhammad Nasir Saleem
Study Guide developed by	Prof. Dr. Muhammad Nasir Saleem Dr. Hira Anjum
Total Lectures	97
Clinical Demonstrations	6 for every 7 weeks clinical rotation
SGDs	6 for every 7 weeks clinical rotation

COURSE CORDINATORS

COURSE DIRECTOR:

Prof. Dr. Muhammad Nasir Saleem	BDS, FCPS, MSc, ICMT, FDS RCPSG, PhD(Scholar)	Principal & Head of Department

CONTRIBUTORS:

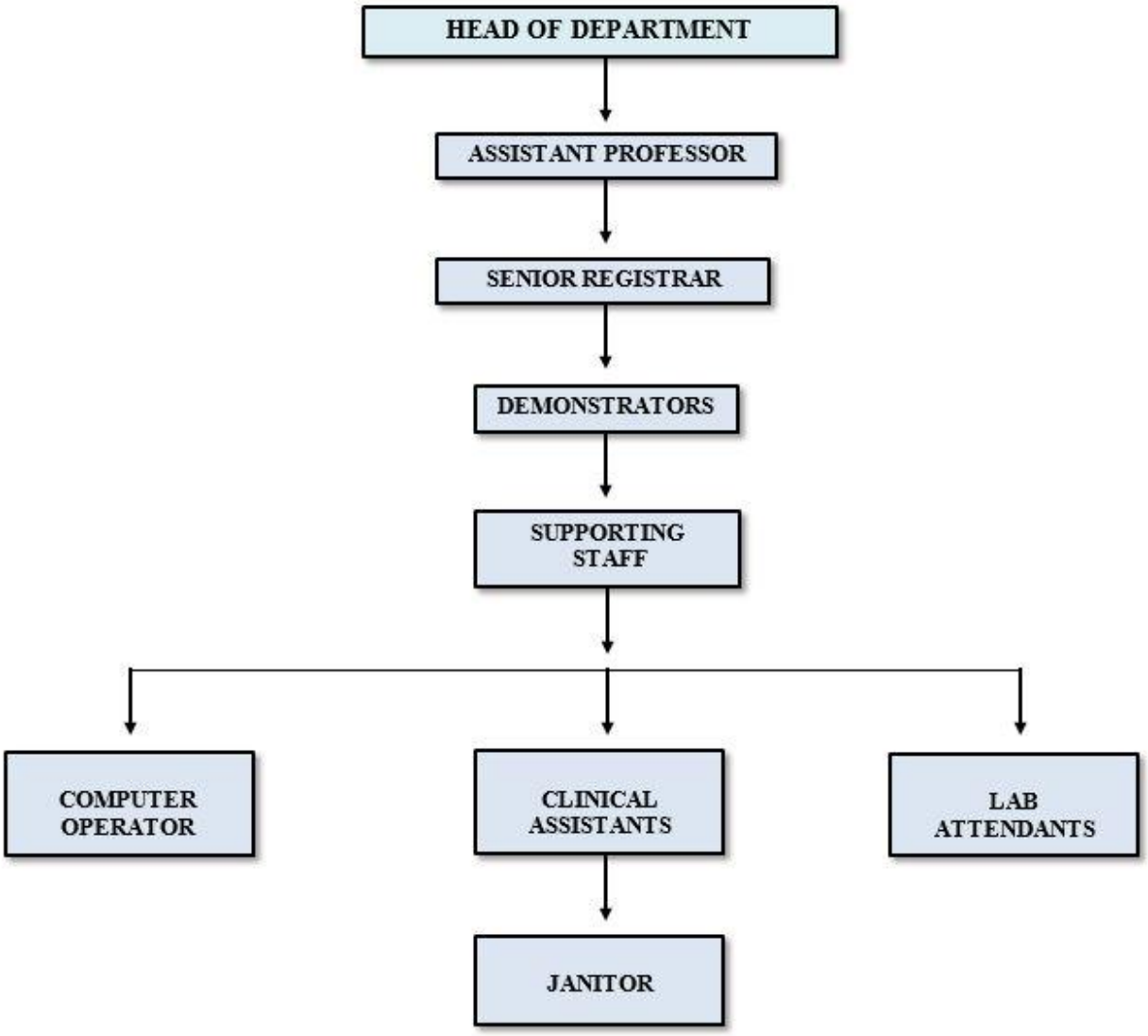
Dr. Hira Anjum	BDS,FCPS	Assistant Professor
Dr. Hira Imtiaz	BDS,FCPS	Senior Registrar

CO-CONTRIBUTORS:

Dr. Huda Mahmood	BDS	Demonstrator
Dr. Saadia Ahmad Chattha	BDS	Demonstrator

DEPARTMENT OF OPERATIVE DENTISTRY

DEPARTMENTAL ORGANOGRAM



COURSE INSTRUCTORS

Sr no.	Name	Designation
1.	Prof. Dr. Muhammad Nasir Saleem	Professor
2.	Dr. Hira Anjum	Assistant Professor
3.	Dr. Hira Imtiaz	Senior Registrar

CLINICAL ROTATION PLAN

LIST OF PROCEDURES
Caries Risk Assessment & Formulation of Treatment Plan
Diagnosis & Treatment Planning
Rubber Dam Application
Class I Amalgam Restorations
Class II Amalgam Restorations
Composite Restorations
Class V GIC/RMGIC Restorations
Endodontic Therapy (RCT)
Onlay Preparation on Phantom Head Teeth
Veneer Preparations on Phantom Head Teeth
Prescription Writing

DISCUSSION TOPICS

1. Caries Risk Assessment & Formulation of Treatment Plan
2. Diagnosis & Treatment Planning
3. Bonding to Enamel and Dentin
4. Irrigants & Intra canal Medicaments
5. Restoration of Endodontically Treated Teeth
6. Additional Aesthetic procedures bleaching / macro and micro abrasion

DAY 1	**ORIENTATION DAY**			
WEEK	**Day**	**Time**	**Topics**	**Instructor**
WEEK 1	Monday	2:00pm-3:00pm	**SGD-** Caries Risk Assessment and formulation of Treatment Plan	Prof. Dr. Nasir Saleem
WEEK 2	Monday	2:00pm-3:00pm	**SGD-** Diagnosis & Treatment Planning	Dr. Hira Anjum
WEEK 3	Monday	2:00pm-3:00pm	**SGD-** Bonding to Enamel and Dentin	Dr. Hira Imtiaz
WEEK 4	Monday	2:00pm-3:00pm	**SGD-** Irrigants & Intra canal Medicaments	Prof. Dr. Nasir Saleem
WEEK 5	Monday	2:00pm-3:00pm	**SGD-** Restoration of Endodontically Treated Teeth	Dr. Hira Anjum
WEEK 6	Monday	2:00pm-3:00pm	**SGD-** Additional Aesthetic procedures bleaching / macro and micro abrasion	Dr. Hira Imtiaz
WEEK 7	**CLINICAL TEST**			

CLINICAL DEMONSTRATION SCHEDULE

DEMONSTRATION TOPICS:

1. Non-Surgical Endodontic Therapy
2. Restoration of Endodontically Treated Teeth
3. Posterior Composite Buildup
4. Onlay Preparation
5. Veneer Preparation

DAY 1	**ORIENTATION DAY**			
WEEK	**Day**	**Time**	**Topics**	**Instructor**
WEEK 1	Tuesday	2:00pm-3:00pm	**Demonstration** – Non Surgical Endodontic Therapy (Access Opening and Canal Preparation)	Dr. Hira Anjum
WEEK 2	Tuesday	2:00pm-3:00pm	**Demonstration** – Non Surgical Endodontic Therapy (Obturation)	Dr. Hira Anjum
WEEK 3	Tuesday	2:00pm-3:00pm	**Demonstration-** Restoration of Endodontically Treated Teeth	Dr. Hira Imtiaz
WEEK 4	Tuesday	2:00pm-3:00pm	**Demonstration –** Posterior Composite Buildup	Dr. Hira Imtiaz
WEEK 5	Tuesday	2:00pm-3:00pm	**Demonstration -** Onlay Preparation	Prof. Dr. Nasir Saleem
WEEK 6	Tuesday	2:00pm-3:00pm	**Demonstration –** Veneer Preparation	Prof. Dr. Nasir Saleem
WEEK 7	**CLINICAL TEST**			

FACULTY DUTY ROSTER

DAY	LECTURE 8:00am-9:00am (Mon) 9:00am-10:00am (Wed,Thurs)	CLINIC 10:15am-2:00pm	SGD/DEMO 2:00pm-3:00pm
Monday	Dr. Nasir, Dr.Hira Anjum, Dr.Hira Imtiaz	Dr. Hira Anjum Demo 1, Demo 2	Dr. Nasir, Dr.Hira Anjum, Dr.Hira Imtiaz
Tuesday		Dr. Hira Imtiaz Demo 3, Demo 4	Dr. Nasir, Dr.Hira Anjum, Dr.Hira Imtiaz
Wednesday	Dr. Nasir, Dr.Hira Anjum, Dr.Hira Imtiaz	Dr. Hira Anjum Demo 1, Demo 2	
Thursday		Dr. Hira Imtiaz Demo 3, Demo 4	
Friday	Dr. Nasir, Dr.Hira Anjum, Dr.Hira Imtiaz	Prof. Dr. Nasir Demo 1, Demo 2	

LEARNING OUTCOMES FINAL YEAR BDS

TOPIC	MIT	LEARNING OUTCOMES	MODE OF ASSESSMENT
RESTORATIVE DENTISTRY			
Introduction to Operative Dentistry	Interactive Lecture	**KNOWLEDGE** Learn the basic principles, philosophy & techniques of Operative Dentistry.	Viva, MCQs
Sterilization and Infection control	Interactive Lecture, Practical	**KNOWLEDGE** Identify different methods of contamination. Discuss cross infection protocol. State the recommended CDC guidelines for infection control	MCQs, SEQs, viva
		SKILL Demonstrate personal barrier and aseptic techniques. Demonstrate cross infection protocol. Implement sterilization procedures and handle amalgam waste disposal.	OSCE
		ATTITUDE Develop a sense of personal and professional responsibility towards maintaining a sterile and infection-free environment. Demonstrate proactive behavior by adhering to infection control practices.	
Radiology	Interactive Lecture, SGD	**KNOWLEDGE** Discuss basic principles and interpretations of dental radiography Discuss the use and implications of various radiographs : periapical, bitewing, occlusal, OPG, CBCT	MCQs, SEQs, ,VIVA
		SKILL Develop the ability to accurately interpret radiological images and identify normal	OSCE

		vs. abnormal findings	
		ATTITUDE Show a strong commitment to maintaining patient safety by adhering to radiation safety protocols, minimizing exposure, and ensuring accurate imaging.	OSCE
Caries: Etiology and prevention	Interactive Lectures	**KNOWLEDGE** Discuss the mechanism of caries initiation and progression. Identify the etiology and preventive aspects of caries. Develop an understanding of caries management by risk assessment.	MCQs, SEQs, ,VIVA
		SKILL Identify clinical characteristics of dental caries.	OSCE
		ATTITUDE Show empathy and responsibility by educating patients about caries risk factors, prevention strategies, and the importance of oral hygiene.	OSCE
Caries: Classification Assessment and detection Investigations	Interactive Lectures, Small Group Discussion(SGD)	**KNOWLEDGE** Identify and diagnose carious lesions. Enlist various investigations required for the diagnosis of caries. Enumerate the methods of caries control by medical model	MCQs, SEQs, VIVA
		SKILL Identify clinical characteristics of dental caries.	OSCE
		ATTITUDE Embrace a preventive approach by prioritizing regular check-ups and early intervention to prevent the progression of caries.	

Fundamentals of tooth Preparations	Interactive Lecture, Practical	**KNOWLEDGE** Identify the essential principles of cavity preparation, including outline form, resistance form, retention form, and convenience form. Discuss the role of these principles in ensuring the longevity and effectiveness of restorative treatments.	Viva, MCQs, SEQs
		SKILL Perform cavity preparations using appropriate hand instruments and rotary instruments while adhering to the principles of cavity design.	OSCE
		ATTITUDE Recognize the ethical responsibility involved in cavity preparation, including the importance of conserving healthy tooth structure and preventing unnecessary damage.	
Adhesion to Enamel and Dentin	Interactive Lectures, Small Group Discussion (SGD)	**KNOWLEDGE** Describe adhesion to enamel and dentin in direct and indirect restorations Review composite resins material science; classify and discuss composites, polymerization properties, general considerations for composite restorations Explain the clinical techniques. Know the rationale of finishing and polishing of composite restorations, the use of burs, disks, interproximal strips and polishing paste. Outline the steps of Class I, II, III, IV & V composite restorations, pit and fissure sealants, preventive resins and conservative composite restorations. Identify & enlist the reasons of failure of composite restorations Indications/contraindications, replacement options.	Viva, MCQs, SEQs

		SKILL Perform clinical techniques for Class I, II, III, IV & V direct composite restoration.	OSCE
		ATTITUDE Embrace a patient-first approach by considering patient preferences, comfort, and long-term satisfaction when performing composite restorations.	OSCE
Introduction to Composites Light curing of restorative materials	Interactive Lecture/ Practical	**KNOWLEDGE** Comprehend polymerization properties and general considerations for composite restorations. Exhibit understanding of clinical technique. **INTEGRATION WITH DENTAL MATERIALS** Classify Composite. Explain the properties of Composite. Describe the composition of Composite.	Viva, MCQs, SEQs
Class I cavity preparation for amalgam	Interactive Lecture/ Practical	**KNOWLEDGE** Outline the principles and steps of class I amalgam cavity design.	Viva, MCQs, SEQs
		SKILL Demonstrate the ability to perform accurate Class I cavity preparations using hand instruments and rotary tools, while maintaining the principles of cavity design.	OSCE
		ATTITUDE Demonstrate a patient-centered approach by effectively communicating the procedure, addressing patient concerns, and ensuring patient comfort throughout the cavity preparation and restoration process.	

Amalgam Restoration in class I	Interactive Lecture/ Practical	**KNOWLEDGE** Learn the principles and technique of amalgam restoration. **INTEGRATION WITH DENTAL MATERIALS** Classify Amalgam. Explain the properties of Amalgam. Describe the compositin of Amalgam.	MCQs, SEQs, Viva
		SKILL Manipulate amalgam, including trituration, condensation, carving, and polishing, to achieve optimal anatomical form and function.	OSCE
		ATTITUDE Communicate effectively with patients about the procedure, post-operative care, and any concerns	
Class II Cavity Preparation	Interactive Lecture/ Practical	**KNOWLEDGE** Outline the principles and steps of class Il amalgam cavity design.	Viva, MCQs, SEQs
		SKILL Demonstrate the ability to perform accurate Class Il cavity preparation while maintaining the principles of cavity design.	OSCE
Matrix band and retainer systems	Interactive Lecture/ Practical	**KNOWLEDGE** Identify different types of matrix band systems (e.g., Tofflemire, sectional matrices) and their respective components, including matrix bands, retainers, and wedges. Enlist the indications for using various matrix systems in different types of restorations, such as class II amalgam or	MCQs, SEQs

		composite restorations.	
		SKILL Assemble and place a matrix band and retainer system on a tooth in preparation for a class II restoration Insert wedges to seal the gingival margin and stabilize the matrix band, ensuring a smooth and accurate restoration	OSCE
Class II Amalgam filling with matrix band	Interactive Lecture/ Practical	**KNOWLEDGE** Learn the principles and technique of amalgam restoration.	MCQs, SEQs, Viva
		SKILL Apply Matrix band for class II Cavity and Restoration Manipulate amalgam, including trituration, condensation, carving, and polishing, to achieve optimal anatomical form and function.	OSCE
Class I and Class II Composite restorations Amalgam Vs Composite	Interactive Lecture, SGD	**KNOWLEDGE** Review of differences in both the materials.	Viva, MCQs,SEQs
Class III, IV and V Cavity Design, Clinical Technique for Direct Composite Resin	Interactive Lecture, Practical	**KNOWLEDGE** Outline the steps of class III, IV and V composite restorations.	Viva, MCQs, SEQs
		SKILL Perform the steps of class III, IV and V composite restorations, clinical techniques	OSCE

Complex Amalgam Restorations	Interactive Lecture	**KNOWLEDGE** Define pin-retained restoration Enlist indications /contraindications of pin retained restorations Discuss techniques of pin placement, factors affecting retention of pins and clinical considerations for pin placement.	Viva, MCQs, SEQs
Occlusion	Interactive Lecture	**KNOWLEDGE** Define occlusion. Define ideal occlusion. State its significance. Define the terms CR, maximum intercuspation, CO **INTEGRATION WITH PROSTHODONTICS** Explain concepts of unilateral and bilateral balanced occlusion. Explain mutually protected occlusion. State its features. Explain occlusal interferences.	Viva, MCQs, SEQs
Non carious cervical lesions	Interactive Lecture, Practical	**KNOWLEDGE** Classify NCCLs based on etiology. Exhibit understanding of different features of NCCLs : abrasion, erosion, abfraction, attrition Diagnose NCCLs	Viva, MCQs, SEQs
		SKILL Demonstrate management of NCCLs/tooth wear.	OSCE

Tooth discoloration and additional aesthetic procedures	Interactive Lecture/SGD	**KNOWLEDGE** Identify different types of discoloration of teeth Describe different techniques used to treat discolored teeth Explain Micro abrasion Explain Macro abrasion Explain different types of bleaching techniques : vital/ non-vital bleaching techniques	Viva, MCQs, SEQs
ENDODONTICS			
Biology of Dental pulp	Interactive Lecture	**KNOWLEDGE** Discuss and highlight pulpal reaction to dental caries, restorative material and treatment. Know the internal and external anatomy of teeth, including pulp chamber location, root canal morphology, and variations among different tooth types. **INTEGRATION WITH ORAL BIOLOGY** Explain the structure and function of pulp.	Viva, MCQs, SEQs
Diagnosis and treatment planning	Interactive Lecture, Practical	**KNOWLEDGE** Evaluate a patient when taking history and clinical examination Discuss the use of various diagnostic aids	Viva, MCQs, SEQs
		SKILL Employ the use of various diagnostic aids. Demonstrate how to diagnose pulpal and periapical diagnosis by combining clinical and radiographic examination. Plan and formulate a treatment in a sequential manner according to the problem list	OSCE

		ATTITUDE Show empathy and responsibility while devising treatment plan.	OSCE
Clinical classification and pathobiology of pulpal and periradicular tissues	Interactive Lecture, Practical	**KNOWLEDGE** Classify pulpal and periradicular diseases	Viva, MCQs, SEQs
		SKILL Diagnose and manage pulpal conditions: normal pulp, reversible pulpitis, irreversible pulpitis and pulpal necrosis Diagnose and manage periapical conditions : normal periapex, symptomatic apical periodontitis, asymptomatic apical periodontitis, acute apical abscess, chronic apical abscess and condensing osteitis	OSCE
		ATTITUDE Conduct detailed and meticulous examinations, using all available diagnostic tools (e.g., clinical assessments, radiographs) to ensure accurate identification of periapical diseases.	OSCE
History Taking, Examination	Interactive Lecture, Practical	**KNOWLEDGE** **INTEGRATION WITH ORAL MEDICINE** Conduct a detailed general and dental history. Correlate the significance of history during treatment planning.	Viva, MCQs, SEQs

		SKILL Perform a comprehensive clinical examination of a patient with an endodontic-related problem. Reach a diagnosis and possible differential diagnosis.	OSCE
		ATTITUDE Show a commitment to treating patients with empathy, respect, and sensitivity during history taking and examination, recognizing the importance of building trust and rapport. Communicate management plan to the patient	OSCE
Cross Infection Control	Interactive Lecture, Practical	**KNOWLEDGE** Identify different methods of contamination and discuss cross infection protocol. State the recommended CDC guidelines for infection control	Viva, MCQs, SEQs
		SKILL Demonstrate personal barrier and aseptic techniques. Demonstrate cross infection protocol. Perform rubber dam isolation for endodontic purposes.	OSCE
		ATTITUDE Develop a sense of personal and professional responsibility towards maintaining a sterile and infection-free environment. Demonstrate proactive behavior by adhering to infection control practices.	
Anesthesia	Interactive Lecture, Practical	**KNOWLEDGE** Explain the mode of action of local anesthesia.	Viva, MCQs, SEQs

		INTEGRATION WITH OMFS Describe different techniques for administration of local anesthesia.	
		SKILL Perform topical, local, infiltration and regional anesthesia Manage pulp and periradicular pain.	
		ATTITUDE Be empathetic towards patient during administration of LA. Be vigilant for adverse reactions.	
Access Cavity	Interactive Lecture, Practical	**KNOWLEDGE** Know the objectives of access opening, including gaining straight-line access to the root canal system, preserving tooth structure, and minimizing complications. Describe the appropriate use of instruments and materials for access opening, including burs, hand pieces, and magnification tools.	Viva, MCQs, SEQs
		SKILL Accurately determine the correct working length using appropriate techniques such as electronic apex locators and radiographs. Negotiate uncomplicated root canals.	OSCE
		ATTITUDE Show a commitment to patient comfort and safety, including effective pain management, clear communication, and minimizing trauma during the procedure.	
Canal Preparation	Interactive Lecture, Practical	**KNOWLEDGE** Know the various techniques for canal preparation, including manual and rotary instrumentation, and the principles behind each method. Explain the role and proper use of	Viva, MCQs, SEQs

		irrigation solutions in canal preparation, including their antimicrobial properties and the importance of maintaining canal patency.	
		SKILL Prepare root canals without procedural error in uncomplicated anterior and posterior teeth. Judicially use irrigating agents for root canal irrigation and elimination of microorganisms, organic and inorganic materials. Apply root canal medicaments for the control of microbial infection.	OSCE
		ATTITUDE Show a strong commitment to patient safety by carefully monitoring for signs of complications, such as file separation or extrusion of irrigants, and taking preventive measures to avoid them.	
Obturation	Interactive Lecture, Practical	**KNOWLEDGE** Enlist the goals of obturation, including the complete sealing of the root canal system to prevent reinfection. Know the different obturation materials (e.g., gutta-percha, sealers) and techniques (e.g., lateral condensation, thermoplasticized methods), along with their indications, advantages, and limitations. Explain the importance of achieving a hermetic seal at both the apical and coronal ends of the canal to ensure the long-term success of the root canal treatment.	Viva, MCQs, SEQs

		SKILL Obturate the root canals of uncomplicated anterior and posterior teeth, densely and with length control. Provide appropriate postoperative instructions on mouth care and the management of postoperative pain and swelling	OSCE
		ATTITUDE Show a commitment to patient safety by carefully monitoring the obturation process to avoid procedural errors, such as overfilling or underfilling, and by managing any complications that may arise.	
Restoration of endodontically treated teeth	Interactive Lecture	**Knowledge** **Enlist different types of posts.** Explain the principles of tooth preparation for post: • Conservation of tooth structure • Retention form including preparation geometry, post length, post diameter, post surface texture and luting agents. • Resistance form Identify their properties and suitability for various clinical situations. Outline the procedure for post cementation.	MCQs, SEQs, VIVA
		Skill **Accurately prepare and place the post** within the root canal, ensuring proper adaptation, alignment, and adhesion to maximize retention and functionality.	OSCE
		Attitude **Adopt a meticulous and patient-centered approach** to post and core procedures, recognizing the importance of precision and patient comfort throughout	

		the treatment.	
Endodontic surgery	Interactive Lecture	**KNOWLEDGE** Recognize situations in which surgery is the treatment of choice. Define the terms incision for drainage, periapical surgery, corrective surgery, root amputation, hemisection & bicuspidization. List the more common root-end filling materials. Review the outcome of apical microsurgery. Describe the step-by-step procedures involved in peri-apical surgery, including those for incision and reflection, access to the apex, apical curettage, root-end resection, root-end preparation and filling, flap replacement, and suturing. **INTEGRATION WITH OMFS** Develop an understanding of incision and reflection and access to the apex. State the different flap designs along with the indications, advantages, and disadvantages of each.	Viva, MCQs, SEQs
OTHER PATHOSIS AFFECTING PULP TISSUES AND MIMICKING PULPAL DISEASES ENDO-PERIO	Interactive Lecture	**KNOWLEDGE** Differentiate between internal and external resorption based on clinical signs, use of diagnostic aids. Discuss treatment of internal and external	

LESIONS RESORPTION CALCIFIC METAMORPHOSIS NON ODONTOGENIC TOOTHACHE		resorption. Enlist the different non-odontogenic diseases mimicking pulpal and periapical diseases. Enlist the differentiating features that help in diagnosis non- odontogenic diseases **INTEGRATION WITH PERIODONTOLOGY** Explain the endodontic and periodontal interrelationship. Name pathways of communication between the dental pulp and periodontium Describe effects of pulpal diseases and endodontic procedures on periodontium. Describe effects of periodontal diseases on the pulp. Demonstrate how to diagnose endodontic-periodontal lesions, give its classification and differential diagnosis of endodontic-periodontics lesions.	
Dento Alveolar Trauma	Interactive Lecture, Practical	**KNOWLEDGE** Identify and classify dental trauma. Know the protocols for emergency management of dentoalveolar trauma, including immediate care, stabilization, and referral guidelines. Apply principles and practices of managing dento-alveolar trauma, including crown fractures, crown–root fractures, root fractures, luxation injuries, avulsions Classify and enlist management options for teeth that have undergone dentoalveolar trauma. **INTEGRATION WITH ORTHODONTICS** Describe specific adjunctive procedures, such as those used to complement primary orthodontic treatment. Explain techniques and strategies for up	Viva, MCQs, SEQs

		righting posterior teeth to correct alignment and improve occlusion Describe the techniques and goals of extruding teeth to address alignment and occlusal issues Explain strategies for aligning anterior teeth to improve esthetics and function	
INDIRECT RESTORATIONS			
Veneers	Interactive Lecture, Practical	**KNOWLEDGE** Discuss assessment of teeth for veneer restorations. Highlight significance and procedure of intraoral mockup. Identify the armamentarium required for preparation of veneers. Describe different veneer designs including window preparation, incisal overlap and incisal overlap with proximal reduction. Outline the steps of veneer preparation. Explain temporization for the prepared teeth. Review the steps of bonding for an indirect veneer.	Viva, MCQs, SEQs
		SKILL Perform different veneer preparations on typodonts. Demonstrate temporization for the prepared typodonts. Perform steps of bonding.	OSCE

Inlays and Onlays	Interactive Lectures	**Knowledge** Differentiate between full and partial coverage restorations. Define • Inlay • Onlay • Overlay • Veneerlay Enumerate their indications and contraindications. Enlist their advantages and disadvantages. Identify armamentarium for their preparation. Describe their temporization and steps of bonding.	Viva, MCQs, SEQs

FIXED PROSTHODONTICS LEARNING OUTCOME

Topic	Course Content	Learning Outcome At the end of each module, student will be able to:	MIT	Assessment Tool
Introduction to fixed prosthesis	Comparison of FPD with RPD Components of FPD	**KNOWLEDGE** Define Fixed Prosthodontics Differentiate between fixed and removable prosthesis. Enlist different treatment options of Fixed Partial Dentures. Name different components of fixed partial denture. Enlist example of fixed partial denture and fixed restoration. **SKILLS** Identify the need for fixed partial denture. **ATTITUDE:** Develop a compassionate and empathetic approach to understand patients' concerns, needs, and expectations regarding fixed partial dentures. Educate patients about their FPDs options Cultivate a professional demeanor when interacting with patients	Interactive Lectures Case-based learning Small group discussion Clinical demonstration Clinical demonstration	MCQ/ SAQ OSCE OSCE
Evaluation and Treatment planning	History Clinical examination Influence of patient's demographic data on treatment planning Treatment planning of Single missing tooth Treatment planning of multiple missing tooth Mesially tilted	**KNOWLEDGE** Elaborate treatment planning and sequence. Enlist different phases of fixed prosthodontic treatment Describe different consideration of fixed prosthesis Elaborate fixed treatment options for single missing tooth . Elaborate fixed treatment options for multiple missing tooth Describe Prosthodontic diagnostic index for partially edentulous or completely dentate patient Describe different treatment options of mesially tilted molars Describe different treatment options for pier abutment **Integrated with Orthodontics** Describe different orthodontic treatment options of mesial tilted molars.	Interactive Lectures Case-based learning Small group discussion	MCQ/ SAQ

	molar (orthodontics, operative) Pier abutment Prosthodontic diagnostic index	**Integrated with Operative dentistry** Describe different restorative treatment options for correction of mesially tilted molars. **SKILLS** Gather and analyze information on systemic conditions, previous dental treatments, and patient habits that could impact prosthetic care. Develop the ability to perform a thorough clinical examination of the oral cavity, including assessment of the adjacent teeth, opposing teeth, prosthetic space, residual ridge and occlusion. Learn to use diagnostic tools and techniques, such as radiographs, diagnostic casts, and periodontal assessments, to aid in the evaluation and treatment planning for prosthodontic cases. Assess the suitability of a patient for fixed partial dentures, including evaluating factors like health of adjacent abutment teeth, ridge resorption, centric and eccentric occlusion. Manage mesially tilted molar Identify the problems associated with pier abutment and manage it **ATTITUDE** Display good patient communication skills. Active listening Practice good time management. Documentation of patient records Respect and maintain patient confidentiality. Exhibit professionalism	Clinical demonstration Clinical demonstration	OSCE OSCE

Principles of Tooth preparation	Biological considerations Mechanical consideration Aesthetic considerations Patient Positioning	**KNOWLEDGE:** Enlist different principals and guidelines for tooth preparation Elaborate biological principals Explain mechanical principals Elaborate all aesthetics principals of tooth preparations Discuss guidelines of tooth preparation **SKILLS**: Perform accurate tooth preparation for endodontically treated tooth Perform conservative tooth preparation for vital tooth. Select material for patient's FPD based on his/her biological, mechanical and aesthetic concerns Guage the accuracy of tooth preparation in terms of amount of preparation at each surface and inter occlusal clearance Position the patient and operator himself/herself for treatment of any given tooth **ATTITUDE:** Respect and maintain patient confidentiality Follow infection control protocols Cultivate a professional demeanor when interacting with patients	Interactive Lectures Case-based learning Small group discussion Practical illustration on patient Clinical demonstration	MCQ/ SAQ OSCE OSCE
Pontic designs	Biological considerations Mechanical consideration Aesthetic considerations Pre-treatment assesment Siebert classification	Describe biological , mechanical and aesthetic considerations of pontic design Define Pontic and its difference from connector and retainer Classify different pontic designs Differentiate between hygienic and mucosal contact ponticdesigns Classify and give managements of ridge defect Give different methods of residual ridge preservation **SKILLS**: Decide the pontic according to pontic space and ridge area. Preserve residual ridge using different methods Decide the pontic in aesthetic and non aesthetic zone. Modify ridge area for ovate pontic design Use visual illusion principles to	Interactive Lectures Case-based learning Small group discussion Clinical demonstration	MCQs/SA Qs OSCE

		manage mesiodistal or incisogingival pontic space discrepency Communicate effectively with lab to get the desired pontic design **ATTITUDE**: Display good patient communication skills Active Listening of patient's concerns Documentation of patient records Exhibit Professionalism both with patient and lab.	Clinical demonstration	OSCE
Tooth Preparation for fixed prosthesis	All metal restoration All ceramic Metal ceramic Partial coverage restoration Margin designs	**KNOWLEDGE**: Give indications, contraindications , advantages and disadvantages of complete cast crown Elaborate preparation steps of different surfaces of tooth for all metal FPDs Give indications, contraindications, advantages and disadvantages of all ceramic restoration Elaborate preparation steps of different surfaces of tooth for all ceramic FPDs Give indications, contraindications, advantages and disadvantages of metal ceramic restoration Elaborate preparation steps of different surfaces of tooth for metal ceramic FPDs Give indications, contraindications, advantages and disadvantages of partial veneer crown Elaborate preparation steps of different surfaces of tooth for partial coverage restorations Name different methods to add retention in preparation design Name different margin designs Give indications, advantages and problems of each margin design Classify margin designs based on location and their indications Elaborate preparation steps of different margin designs for all types of FPDs Integrated with Operative dentistry	Interactive Lectures Small group discussion Case based learning	MCQs/SAQs

		Give indications, contraindications, advantages and disadvantages of partial coverage crown crown Elaborate preparation steps of different surfaces of tooth for partial coverage restorations Give indications, contraindications, advantages and disadvantages of Veneers Elaborate preparation steps of different surfaces of tooth for Veneers **SKILLS**: Prepare abutment tooth for all different types of full coverage and partial coverage restoration Evaluate correctness of tooth prep (amount of preparation, tapering of walls margin design and margin location Assess occlusal clearance using different methods Manage any problem occur during prep by modification of design of tooth prep Add different types of retentive features in preparation where indicated. **ATTITUDE:** Display good patient communication skills. Active listening Follow infection control protocols Documentation of patient records Respect and maintain patient confidentiality. Cultivate a professional demeanor when interacting with patients	Clinical demonstration Hands-on Clinical demonstration	OSCE OSCE
Tissue Management & Impression Method	Saliva control Gingival retraction Impression material Impression technique	**KNOWLEDGE**: Elaborate different methods salivary control for impression Give modes of gingival retraction Elaborate different impression technique **Integrated with Dental Materials** Classify and Give properties of different impression materials used for FPD. **SKILLS:**	Interactive Lectures Small group discussion Case based learning	MCQ/SAQ

		Manage salivary control for impression Retract gingiva for accurate impression recording of subgingival area Select appropriate size of impression trays Select appropriate impression material Manipulation of impression material Record impression accurately with different techniques Evaluate correctness of impression Correct any deficiency impression Handling and storing impressions to avoid distortion or damage before sending them to the dental laboratory. **ATTITUDE:** Display good patient communication skills. Follow cross infection control protocol Documentation of patient records Respect and maintain patient confidentiality. Cultivate a professional demeanor when interacting with patients	Clinical demonstration Hands-on Clinical Demonstration	OSCE OSCE
Temporization phase in FPDs fabrication	Requirements/ considerations Materials of interim FPD Procedure of temporization Material and procedure of luting of interim FPD	**KNOWLEDGE**: Enlist biological, mechanical and aesthetic considerations for interim Enlist different materials that can be used for temporary restoration Explain significance of interim restoration Give requirements of interim restoration Elaborate various types of interim restoration Explain different techniques of fabricating interim restorations Indications of temporization Give indications of cast metal interim restoration **SKILLS:** Fabricate index using different materials Fabricate temporary fixed prosthesis using different techniques Reline, adjust and lute temporary	Interactive Lectures Small group discussion Case based learning Clinical demonstration Hands-on	MCQ/SAQ OSCE

		prosthesis **ATTITUDE:** Counsel the patient about requirement of temporary prosthesis and possible complications that can occur if temporary prosthesis is avoided Strictly follow the cross infection control protocols Refer the patient to concerned specialist if required. Cultivate a professional demeanor when interacting with patients	Clinical demonstration	OSCE
Luting Agents and Cementation Procedures	Interim cementation Definitive cementation Materials of cementation Cementation technique	**KNOWLEDGE:** Differentiate between interim and definitive cementation Describe technique for cementation of different types of restoration. **Integrated with Dental Materials** Describe various materials used for temporary or permanent cementation of veneers, crown or FPDs **SKILLS:** Select an appropriate material for cementation of any given fixed prosthesis Manipulation (proportionate, mixing and application) of luting cement. Follow procedural steps of luting method to achieve best results. Identify and troubleshoot common issues and errors in luting FPD. **ATTITUDE:** Display good patient communication skills. Follow infection control protocol. Develop a meticulous attitude toward ensuring the optimal luting Cultivate a professional demeanor when interacting with patients Emphasize the importance of taking responsibility for the quality of the luting and understanding the impact of errors on treatment outcomes.	Interactive Lectures Small group discussion Self-directed learning Clinical demonstration Hands-on Clinical demonstration	MCQ/SAQ OSCE OSCE

Minimal Preparation FPDs	Types of minimal preparation bridges Tooth preparation for RBFPD Cementation of RBFPD	**KNOWLEDGE:** Describe different types of resin retained prosthesis Enlist indications, contraindications, advantages and disadvantages of Resin bonded FPDs Describe preparation steps and designing for anterior RPFPD Describe preparation steps and designing for posterior RPFPD Enlist steps of bonding of RBFPD Know when to refer to specialist. **SKILLS:** Select an appropriate RBFPD for any given scenario Prepare the anterior abutment tooth for retainer of RBFPD Design the anterior RBFPD Prepare the posterior abutment tooth for retainer of RBFPD Design the posterior RBFPD Select an appropriate luting material for each type of RBFPD Follow the steps for optimal bonding of resin bonded FPD Identify and troubleshoot common issues of preparation and luting of RBFPD **ATTITUDE:** Display good patient communication skills. Counsel the patient about existing conditions and possible options. Follow infection control protocol. Develop a meticulous attitude toward ensuring the accuracy and precision of tooth preparation and bonding of RBFPD Make referral to specialist when required.	Lectures; Case-based learning Chair-side learning Clinical demonstration Clinical demonstration	MCQ/SAQ OSCE OSCE
Occlusion in FPD OMFS	Temporoman dibular Joint. Mandibular movement. Occlusal determinants Bruxism Centric relation Optimum occlusion	**KNOWLEDGE** Describe the anatomy of temporomandibular joint Describe the mandibular ligaments (origin, insertion and function) Briefly explain the muscles of mastication (origin, insertion and function) Explain Posselt's three dimensional representation of mandibular movement	Interactive Lectures Self-directed learning Small group discussion	MCQ/ SAQ

	Pathogenic occlusion Occlusal treatment	Enlist anterior and posterior occlusal determinants and their impact on restoration Enlist differences between functional and parafunction movements Elaborate different types of articulation and their clinical implications Enlist the features of mutually protected articulation Describe the signs and symptoms of pathogenic occlusion Enlist the objectives of occlusal treatment Describe nonsurgical management options for TMJ disorders. **Integrated with OMFS** Describe the anatomy of temporomandibular joint Describe surgical management options for TMJ disorders. **SKILLS**		
		Diagnose patient's occlusion to be optimal or pathogenic Identify the need for occlusal treatment Fabricate occlusal device using direct or indirect technique Appropriately adjust the occlusion of occlusal splint to achieve the maximum benefits **ATTITUDE:**	Clinical demonstration	OSCE
		Develop a compassionate and empathetic approach to understanding patients' concerns, needs, and expectations regarding occlusion. Educate patients about their occlusal problem and possible treatment options Cultivate a professional demeanor when interacting with patients Instruct patient regarding follow up visits and post op care	Clinical demonstration	OSCE

Shade selection and lab communication	Factors affecting tooth color Different methods of shade selection for FPD Protocol of shade selection Work authorization for,	**KNOWLEDGE** Explain different attributes of color. Give variable factors affecting tooth color determination Explain translucency, fluorescence and opalescence Elaborate different shade matching protocols Give limitations of shade matching. Devise the lab prescription form for better communication between clinician and lab personnel. **SKILL** Select appropriate shade for prosthesis using different shade guides. Make a customized shade distribution chart of any patient given Fabricate putty index of temporary restoration Display good communication skills with lab to achieve the desired shade and design of FPD. **ATTITUDE** Active listening Documentation of patient records Respect and maintain patient confidentiality. Exhibit professionalism	Interactive Lectures Case-based learning Small group discussion Clinical demonstration Clinical demonstration	MCQ/ SAQ OSCE OSCE

DEPARTMENTAL INVOLVEMMENT IN INTEGRATED TEACHINGS
CORE SUBJECT: OPERATIVE DENTISTRY

	1ST YEAR	2ND YEAR	3RD YEAR	4th YEAR
Subject	**Oral Biology**	**Prosthodontics**	**Oral Pathology**	**OMFS**
Topic	Enamel & Dentin	Fixed Prosthodontic	Pulpitis	Peri-Radicular Surgery
SLOs	Highlight the zones of caries Correlate histology of Enamel with cavity preparation & Acid Etching		Classify pulpitis. Diagnose and manage acute and chronic pulpitis.	Recall anatomy of the tooth root, surrounding tissues, and the pathophysiology of peri-radicular disease. Discuss root end cavity preparation and identify materials used for resected root end management.
Topic	Pulp			Maxillofacial Trauma
SLOs	Identify the pulpal reaction to dental caries & restorative procedures Highlight tertiary dentine formation (direct & Indirect pulp capping)			Classify dental trauma. Enlist management options for teeth that have undergone dentoalveolar trauma.
Subject		**Dental materials**	**Periodontology**	**Prosthodontics**
Topic		Amalgam	Endo-perio lesions	Fixed Prosthodontics
SLOs		Describe clinical application, indications/contrain dications and steps involved in preparing and mixing dental amalgam. Describe the techniques for placing and finishing amalgam	Explain the endodontic and periodontal interrelationship. Describe effects of pulpal diseases and endodontic procedures on periodontium.	

		restorations, including cavity preparation, amalgam condensation, and carving Describe and manage complications related to amalgam restorations		
Topic		Dental cements		
SLOs		Describe the clinical applications of different dental cements. Describe specific clinical indications for each type of cement, including their use in permanent restorations, temporary restorations, liners, and bases. Demonstrate the proper techniques for mixing, handling, and applying each type of cement, including any special considerations for different clinical scenarios		
Topic		Composites		
SLOs		Demonstrate clinical manipulation of restorative composites Enlist indications to use dental composites for		

		various restorations, such as in anterior and posterior teeth, and understanding the limitations. Describe the clinical applications for composite restorative materials.		
Topic		Adhesion and bonding		
SLOs		Describe clinical concepts of etching, dentin bonding and significance of hybrid layer		
Topic		Endodontic Materials		
SLOs		Enlist steps involved in performing endodontic procedures. Explain how to prepare and apply endodontic materials, including techniques for using gutta-percha, sealers, medicaments and irrigants effectively Describe the role of mineral trioxide aggregate (MTA) and other retrograde filling materials		

LEARNING RESOURCES

Sr #	Title of Book	Edition
1.	Sturdevant's Art and Science of Operative Dentistry	2nd South Asian Edition
2.	Endodontics: Principles and Practice by Torabinjad. Richard E Walton, MahmoudTorabinjad.	6th edition
3.	Summitt's Fundamentals of Operative Dentistry- A Contemporary Approach	4th Edition
4.	Contemporary fixed prosthodontics by Stephan R. Rosentiel	5th Edition
5.	Paediatric Dentistry by Richard R. Welbury	5th Edition

PAEDIATRIC DENTISTRY

WELCOME NOTE BY HEAD OF DEPARTMENT

Dear Students,

Welcome to the Department of Paediatric Dentistry! It is with great excitement that we greet you as you embark on this transformative journey into the world of dental care for children. Our mission is to equip you with the knowledge, skills, and compassion necessary to excel as dental professionals.

In this program, you will receive comprehensive education, hands on experience, mentorship, inter disciplinary collaboration and research and various opportunities to engage in clinical practice under the guidance of experienced faculty, allowing you to equip with clinical skills that you will require in dental health care.

Our dedicated faculty members are here to support you, offering guidance and insights as you navigate your studies and prepare for your future careers. You will collaborate with peers from various healthcare fields, fostering a holistic approach to pediatric care that emphasizes teamwork and communication. We encourage you to explore the latest advancements in pediatric dentistry through research initiatives, helping you contribute to the field and expand your knowledge.

As you transition from students to skilled dental professionals, remember that this journey is about more than just acquiring technical skills. It's about developing empathy, compassion, understanding the unique needs of children, and advocating for their oral health.

Embrace the challenges ahead, seek knowledge relentlessly, and always remember the impact you can have on the lives of your young patients.

Together, let's make a difference in the field of Paediatric Dentistry!

Prof. Dr Omer Yousaf
Head of Department
Paediatric Dentistry

RATIONALE FOR THE COURSE/ DEPARTMENT

Paediatric Dentistry plays a vital role in developing specialized knowledge and skills in caring for children's dental health. Given that children's dental needs differ significantly from those of adults, this program equips future dentists with the tools to address unique challenges, such as managing anxiety and understanding developmental considerations. By focusing on preventive care and early intervention, the course emphasizes the importance of establishing good oral hygiene habits from a young age, reducing the likelihood of complex dental issues later in life. Additionally, it provides training in behavioral management techniques to ensure positive experiences for young patients. This specialized education fosters a comprehensive understanding of the interplay between oral health and overall well-being in children, ultimately leading to healthier communities and improved dental outcomes as children grow into adulthood. Overall, a dedicated pediatric dentistry department enhances the quality of care provided to young patients and prepares practitioners to make a lasting impact on their oral health journey.

DEPATMENTAL DETAILS

Head of department	Prof. Dr. Omer Yousuf
Study guide developed by	Dr. Zehra Abbas
Total lectures	20
Clinical demonstration	80

COURSE CORDINATORS

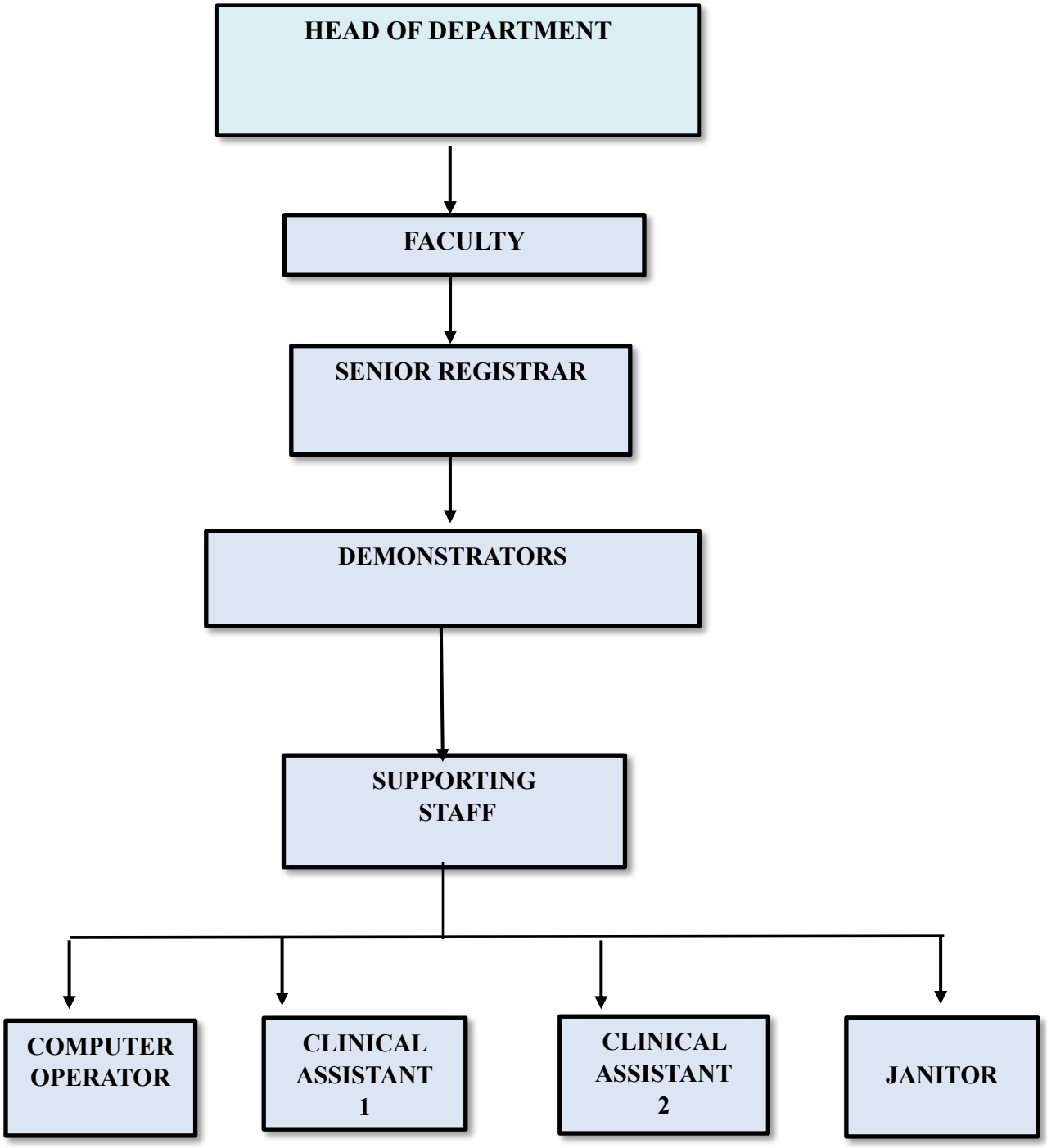
COURSE DIRECTOR:

Prof. Dr. Omer Yousaf	BDS, FCPS	Head of Department

CONTRIBUTORS:

Dr. Zehra Abbas	BDS, FCPS	Senior Registrar
Dr. Mashal Fatima	BDS	Demonstrator
Dr. Jaanita Dilawaiz	BDS	Demonstrator

DEPARTMENTAL ORGANOGRAM



COURSE INSTRUCTORS

	Name	Designation
1	Prof Dr Omer Yousuf	Professor
2	Dr Zehra	Senior Registrar
3	Dr. Mashal Fatima	Demonstrator
4	Dr. Janita Dilawaiz	Demonstrator

CLINICAL ROTATION PLAN

List of Observation / Exercises/ Procedures

1. History taking
2. Caries risk assessment and preventive counseling
3. Clinical and radiographic examination and treatment planning
4. Restoration of primary teeth
5. Restoration of permanent teeth
6. Pulpotomy exercise
7. Pulpectomy exercise
8. Fluoride Varnish Application
9. Pits and fissure sealant restoration
10. Stainless Steel Crown
11. Mixed Dentition Analysis
12. Extraction of primary teeth

CLINICAL DEMONSTRATION SCHEDULE

FINAL YEAR BDS
PROPOSED YEAR 2028

	Topics	Facilitator	Demonstrator
DAY	**ORIENTATION DAY**		
WEEK 1	• History taking • Caries risk assessment and preventive counselling	Prof. Dr. Omer Yousaf	Dr. Mashal Fatima
WEEK 2	• Clinical and radiographic examination and treatment planning	Dr. Zehra Abbas	Dr. Janita Dilawaiz
WEEK 3	• Restoration of primary and permanent teeth	Prof. Dr. Omer Yousaf	Dr. Mashal Fatima
WEEK 4	• Pulpotomy	Dr. Zehra Abbas	Dr. Janita Dilawaiz
WEEK 5	• Pulpectomy	Prof. Dr. Omer Yousaf	Dr. Mashal Fatima
WEEK 6	• Fluoride varnish • Pits and fissure sealants	Dr. Zehra Abbas	Dr. Janita Dilawaiz
WEEK 7	• Stainless steel crowns	Prof. Dr. Omer Yousaf	Dr. Mashal Fatima
WEEK 8	• Extraction of primary teeth	Dr. Zehra Abbas	Dr. Janita Dilawaiz
	CLINICAL TEST		

SMALL GROUP DISCUSSION SCHEDULE FOR CLINICAL BATCH

FINAL YEAR BDS
PROPOSED YEAR 2028

		TOPICS	Instructor
DAY 1	**ORIENTATION DAY**		
WEEK 1	Tuesday (10:00-11:00 AM)	• History taking	Prof. Dr. Omer Yousaf Dr. Mashal Fatima
WEEK 2	Tuesday (10:00-11:00 AM	• Behaviour Management	Dr. Zehra Abbas Dr. Janita Dilawaiz
WEEK 3	Tuesday (10:00-11:00 AM	• Fluoride Application	Prof. Dr. Omer Yousaf Dr. Mashal Fatima
WEEK 4	Tuesday (10:00-11:00 AM	• Sealants restoration	Dr. Zehra Abbas Dr. Janita Dilawaiz
WEEK 5	Tuesday (10:00-11:00 AM	• GIC mixing	Prof. Dr. Omer Yousaf Dr. Mashal Fatima
WEEK 6	Tuesday (10:00-11:00 AM	• Rubber dam application	Dr. Zehra Abbas Dr. Janita Dilawaiz
WEEK 7	**CLINICAL TEST**		

RAHBAR COLLEGE OF DENTISTRY
DEPARTMENT OF PAEDIATRIC DENTISTRY

Topics for Small Group Discussions (SGDs)

FINAL YEAR BDS
PROPOSED YEAR 2028

Sr#	Topic	Facilitator
1.	History Taking	Prof. Dr. Omer Yousaf, Dr. Mashal Fatima
2.	Behavior Management	Dr. Zehra Abbas, Dr. Janita Dilawaiz
3.	Fluoride Application	Prof. Dr. Omer Yousaf, Dr. Mashal Fatima
4.	Sealants Restoration	Dr. Zehra Abbas, Dr. Janita Dilawaiz
5.	GIC mixing	Prof. Dr. Omer Yousaf, Dr. Mashal Fatima
6.	Rubber dam application	Dr. Zehra Abbas, Dr. Janita Dilawaiz

Prof. Dr Omer Yousaf
Head of Department
Paediatric Dentistry Department

FACULTY DUTY ROSTER

FINAL YEAR BDS
PROPOSED YEAR 2028

DAY	LECTURE 9:00 am – 10:00 am (Friday)	CLINIC 10:15am – 12:15pm BREAK 15 mins 12:30 – 3:00 pm	SGD 10:00 – 11:00 am
Monday		Dr. Omer Yousaf Dr. Mashal Dr. Janita	
Tuesday		Dr. Zehra Abbas Dr. Mashal Dr. Janita	Dr. Omer Yousaf Dr. Zehra Abbas Dr. Janita
Wednesday		Dr. Omer Yousaf Dr. Mashal Dr. Janita	
Thursday		Dr. Zehra Abbas Dr. Mashal Dr. Janita	
Friday	Dr. Omer Yousaf Dr. Zehra Abbas	Dr. Omer Yousaf Dr. Mashal Dr. Janita	

*Friday prayer break from 1:00pm-2:00pm.

* Paediatric Dentistry Department senior faculty would be available in Consultant Clinics in between 9:00 am - 2:00 pm

SUBJECT SPECIFIC AND INTEGRATED LEARNING OUTCOMES

TOPIC	LEARNING OUTCOME	MIT	MODE OF ASSESSMENT
Introduction to Paediatric Dentistry Patient assessment, radiographic interpretation, diagnosis and treatment planning	KNOWLEDGE Explain the concept of paediatric dental care Explain and apply the components of a comprehensive history Appraise childs overall health and development Explain caries risk assessment indicators Interpret mixed dentition radiographs Formulate caries management protocol according to the disease risk organize and apply the principles of treatment planning in paediatric patients SKILL Evaluate patient Assess caries risk Write an integrated treatment plan ATTITUDE Time management Communication skills Attendance Active listening Problem solving Leadership	Small group discussion and demonstration	MCQS SEQS
Dental caries	KNOWLEDGE Determine the etiology of dental caries Classify dental caries Recognize the radiographic appearance of dental caries SKILL Identify clinical characteristics of dental caries ATTITUDE Time management Communication skills Attendance Active listening Problem solving Leadership	SGD/Interactive/demonstration	SEQS/MCQS
Early childhood caries Restorative dentistry for paediatric patients	KNOWLEDGE Define and differentiate ECC and rampant caries Explain the etiology of ECC Discuss the clinical features and pattern of caries in children Discuss oral health education with	Interactive lecture and SGD	SEQS/MCQS

	emphasis on strategies for caries prevention Discuss the importance of first dental visit Discuss age specific home based oral hygiene instructions and diet counselling for caries prevention Discuss the role of fluoride in caries management and prevention Discuss different restorative and non restorative options for ECC SKILL Perform caries excavation and restoration on extracted teeth ATTITUDE Time management Communication skills Attendance Active listening Problem solving leadership		
Modification of cavity preparation	KNOWLEDGE Define the principles and technique of cavity preparation SKILL Manipulate restorative material to achieve optimal anatomical form and function ATTITUDE Time management Communication skills Attendance Active listening Problem solving Leadership	SGDs/interactive	SEQS/MCQS
Restorative materials in pediatrics	KNOWLEDGE Enlist the different restorative materials used in Pediatric Dentistry Discuss the properties and mixing ratios of different restorative materials SKILL Perform mixing of different restorative materials in proper ratio ATTITUDE Time management Communication skills Attendance Active listening Problem solving	SGD/ interactive	SEQS/MCQS

	Leadership		
Fluorides	KNOWLEDGE Integrated with community department Discuss the role of florides In caries management Enlist mechanism of action of floride Enlist different topical formulations (both professional and home use) Discuss the clinical application of fluoride varnish and APF gel Enlist the specific recommendation for use of fluoride toothpaste in children Explain the mechanism of action of silver diamine fluoride Discuss the use of SDF in children with emphasis on case selection criteria State the clinical application of SDF Explain the management of accidental fluoride over dosage SKILL Application of fluoride varnish in high caries risk patient ATTITUDE Time management Communication skills Attendance Active listening Problem solving Leadership	Interactive lecture and demonstration	SEQS/MCQS
Pits and fissure caries	KNOWLEDGE Enlist the indications and contraindications Discuss the technique SKILL Perform fissure sealing in primary and permanent teeth ATTITUDE Time management Communication skills Attendance Active listening Problem solving leadership	SGD And demonstration	SEQS/MCQS
Endodontic management of immature root apex	KNOWLEDGE State the cause behind immature root apex discuss and manage patients with immature root apex SKILL Diagnose patients in clinics	interactive	SEQS/MCQS

	ATTITUDE Time management Communication skills Attendance Active listening Problem solving Leadership		
Vital pulp therapy	KNOWLEDGE Discuss pulpal response to caries progression and the assessment of pulpal health Explain the management of deep caries lesion State the indications and contraindications of different pulp treatment techniques relating to clinical and radiographic signs and symptoms Explain the rationale of indirect pulp treatment Define and explain the use of interim therapeutic restoration Discuss different medicaments used for VPT State the indications and contraindications for pulpotomy Describe the clinical procedure for pulpotmy Compare various pulpotomy agents Define and differentiate cvek and complete coronal pulpotomy in permanent teeth SKILL Perform pulpotomy on typodont/extracted teeth ATTITUDE Time management Communication skills Attendance Active listening Problem solving leadership	Interactive lecture and demonstration	SEQS/MCQS
Non vital pulp therapy	KNOWLEDGE Discuss the management of non-vital and abscessed primary molars State the indications and contraindications of pulpectomy Discuss the clinical procedure for pulpectomy Explain the ideal requirements of obturation materials of primary teeth State different material for obturation of primary teeth	Interactive lecture and demonstration	MCQS/SEQS

	SKILL Perform pulpectomy on typodont /extracted teeth ATTITUDE Time management Communication skills Attendance Active listening Problem solving leadership		
Full coverage restoration in primary teeth	KNOWLEDGE Discuss and compare various full coverage restorations for posterior teeth Discuss advantages, disadvantages, indications and contraindications for stainless steel crowns Enlist the commonly used crown pliers Discuss the preparation of teeth for SSC Discuss contouring and crimping of SSC Enlist the clinical steps for placement of SSC Discuss the use of Hall technique for SSC Discuss various full coverge anterior restorations Discuss the clinical technique for strip crown SKILL Demonstrate the placement of SSC in phantom lab ATTITUDE Time management Communication skills Attendance Active listening Problem solving Leadership	Interactive lecture,SGD and demonstration	SEQS/MCQS
Prenatal counselling. Behaviour management Management of pain and axniety	KNOWLEDGE Discuss the importance of prenatal counselling Classify child behaviors at first visit (wright and Frenkel classification) Discuss the factors affecting child behavior in dental operatory Enlist different non pharmacological techniques and their application Define and differentiate minimal ,moderate and deep sedation Discuss the protocol for monitoring	Interactive lecture	SEQS/MCQS

	and management of paediatric patient before, during and IV sedation (oral, inhalational and transmucossal) State ASA physical status classification Compare different routes of conscious sedation (oral,IV,inhalation,transmucosal) Discuss different pharmacological drugs used for sedation with emphasis on their dosage and duration of sedation Discuss the management of unexpected loss of consciousness during sedation Develop informed consent from the patient Discuss the clinical procedure for inducing conscious sedation Discuss the use of nitrous oxide inhalation sedation in paediatric patients Indications,contraindications,equipment and technique of nitrous oxide sedation Discuss the adverse effects related to conscious sedations Discuss the role of general anesthesia in paediatric patient SKILL Demonstrate with role play ATTITUDE Time management Communication skills Attendance Active listening Problem solving Leadership		
Local anesthesia technique for pediatric patient Management of pain	KNOWLEDGE Enlist the available topical anesthetic solution Discuss new techniques for achieving topical anesthesia Enlist various techniques for local anesthesia administration Discuss pain free anesthesia technique Discuss possible complications of local anesthesia SKILL Perform painless local anesthesia technique on pediatric patient undergoing restoration treatment ATTITUDE	Demonstration	SEQS/MCQS

	Time management Communication skills Attendance Active listening Problem solving Leadership		
Dental trauma	KNOWLEDDGE Integrated with operative department State the special considerations for management of dental trauma in paediatric patient Classify dental traumatic injuries Discuss the international association of Dental Traumatology guidelines for management of trauma in primary and permanent teeth Discuss the impact of dental traumatic injuries in primary and permanent dentition SKILL Perform thorough patient evaluation and treatment planning for trauma patients ATTITUDE Time management Communication skills Attendance Active listening Problem solving Leadership	Interactive lecture	SEQS/MCQS
Inherited anomalies of enamel and dentin	KNOWLEDGE Discuss various inherited enamel and dentine defects Discuss clinical problems associated and treatment objectives when managing enamel and dentine defects Discuss the etiology,prevention, clinical features and management of: Amelogenesis imperfecta Dentinogenesis imperfecta Molar incisor hypoplasia SKILL Examine and diagnose patients in clinics ATTITUDE Time management Communication skills Attendance Active listening Problem solving Leadership	Interactive	SEQS/MCQS
Periodontal diseases	KNOWLEDGE	Interactive	SEQS/MCQS

in paediatric patient	Integrated with periodontology department Classify periodontal diseases in children Discuss the etiology,clinical features and management of active gingival conditions Primary herpetic gingivostomatitis Necrotizing ulcerative gingivitis Discuss the etiology,clinical features and management of chronic gingivitis and periodontitis Discuss the etiology,clinical features and management of induced gingival enlargement Discuss periodontal diseases as a manifestation of various syndromes and systemic diseases SKILL Diagnose patients in clinics ATTITUDE Time management Communication skills Attendance Active listening Problem solving Leadership		
Peado ortho interface	KNOWLEDGE Integrated with Orthodontic Department Discuss the importance of screening patients for orthodontic referral at the correct time Formulate a referral letter to an orthodontist when required Define interceptive orthodontics Discuss the rationale and sequence of serial extractions Discuss various space maintainers used in mixed dentition Discuss various habit breaking appliances in paediatric patients SKILL Identify space maintainers and habit breaking appliances ATTITUDE: Time management Communication skills Attendance Active listening Problem solving Leadership	SGD,Interactive	SEQS/MCQS
Oral surgery and	KNOWLEDGE	Interactive	SEQS/MCQS

pathology in paediatric patients	Integration with oral pathology Discuss the lesions affecting oral soft tissues in children Infections Ulcers Vesiculobullous White lesions Cysts Tumours Discuss lesions affecting the jaws in children Cysts Developmental SKILL Diagnose patients in clinics ATTITUDE Time management Communication skills Attendance Active listening Problem solving Leadership		
Medical conditions affecting children	KNOWLEDGE Enlist medical conditions affecting children State dental problems associated with their medical condition Interpret the medical condition Identification of dental problems Management of dental problems SKILL Diagnose patients in clinics ATTITUDE Time management Communication skills Attendance Active listening Problem solving Leadership	SGD/ nteractive	SEQS/MCQS
Long term dental care in children	KNOWLEDGE Discuss the importance for long term dental care in children SKILL Schedule a follow up of patients in clinics ATTITUDE Time management Communication skills Attendance Active listening Problem solving Leadership	interactive	SEQS/MCQS
Management of complications	KNOWLEDGE Discuss the importance of early	interactive	SEQS/MCQS

	identification of problem Describe the management of complications in paediatric patients SKILL Examine patients in clinics ATTITUDE Time management Communication skills Attendance Active listening Problem solving Leadership		

TOPIC	LEARNING OUTCOMES	MIT	MODE OF ASSESSMENT
Introduction to Pediatric Dentistry Patient assessment , radiographic interpretation, diagnosis and treatment planning	**KNOWLEDGE** • Understand the concept of pediatric dental care • Understand and apply the components of a comprehensive history • Appraise child's overall health and development • Explain caries risk assessment indicators • Interpret mixed dentition radiographs • Develop caries management protocol according to the disease risk • Understand and apply the principles of treatment planning in pediatric patients **SKILL** • Evaluate patient • Assess caries risk • Make and integrated treatment plan **ATTITUDE** • Time management • Communication skills • Attendance • Active listening • Problem solving • Leadership	Small group discussion and demonstration	MCQS SEQS

Dental caries	**KNOWLEDGE** • Learn the etiology of dental caries • Classify dental caries • Recognize the radiographic appearance of dental caries **SKILL** • Identify clinical characteristics of dental caries **ATTITUDE** • Time management • Communication skills • Attendance • Active listening • Problem solving • Leadership	SGD/Interactive/demonstration	SEQS/MCQS
Early childhood caries Restorative dentistry for pediatric patients	**KNOWLEDGE** • Define and differentiate ECC and rampant caries • Explain the etiology of ECC • Describe the clinical features and pattern of caries in children • Discuss oral health education with emphasis on strategies for caries prevention • Discuss the importance of first dental visit • Discuss age specific home-based oral hygiene instructions and diet counselling for caries prevention • Describe the role of fluoride in caries management and prevention • Discuss different restorative and non-restorative options for ECC **SKILL** Perform caries excavation and restoration on extracted teeth **ATTITUDE** • Time management • Communication skills • Attendance • Active listening • Problem solving • leadership	Interactive lecture and SGD	SEQS/MCQS
Modification of cavity	**KNOWLEDGE** • Learn the principles and technique of	SGDs/interactive	SEQS/MCQS

preparation	cavity preparation **SKILL** • Manipulate restorative material to achieve optimal anatomical form and function **ATTITUDE** • Time management • Communication skills • Attendance • Active listening • Problem solving • Leadership		
Restorative materials in pediatrics	**KNOWLEDGE** • Learn the different restorative materials used in Pediatric Dentistry • Learn the properties and mixing ratios of different restorative materials **SKILL** • Mixing of different restorative materials in proper ratio **ATTITUDE** • Time management • Communication skills • Attendance • Active listening • Problem solving • Leadership	SGD/ interactive	SEQS/MCQS
Fluorides	**KNOWLEDGE** **INTEGRATED WITH COMMUNITY DEPARTMENT** • Discuss the role of fluorides In caries management • Enlist mechanism of action of fluoride • Enlist different topical formulations (both professional and home use) • Describe the clinical application of fluoride varnish and APF gel • Enlist the specific recommendation for use of fluoride toothpaste in children • Explain the mechanism of action of silver diamine fluoride • Discuss the use of SDF in children with emphasis on case selection criteria	Interactive lecture and demonstration	SEQS/MCQS

	• Describe the clinical application of SDF • Explain the management of accidental fluoride overdosage **SKILL** • Discuss the protocol and apply fluoride varnish in high caries risk patient **ATTITUDE** • Time management • Communication skills • Attendance • Active listening • Problem solving • Leadership		
Pits and fissure caries	**KNOWLEDGE** • enlist the indications and contraindications • describe the technique **SKILL** • Perform fissure sealing in primary and permanent teeth **ATTITUDE** • Time management • Communication skills • Attendance • Active listening • Problem solving • leadership	SGD And demonstration	SEQS/MCQS
Endodontic management of immature root apex	**KNOWLEDGE** • Understand the cause behind immature root apex • Diagnose and manage patients with immature root apex **SKILL** • Diagnose patients in clinics **ATTITUDE** • Time management • Communication skills • Attendance • Active listening • Problem solving • Leadership	interactive	SEQS/MCQS
Vital pulp therapy	**KNOWLEDGE** • Discuss pulpal response to caries progression and the assessment of	Interactive lecture and demonstration	SEQS/MCQS

	pulpal health • Explain the management of deep caries lesion • State the indications and contraindications of different pulp treatment techniques relating to clinical and radiographic signs and symptoms • Explain the rationale of indirect pulp treatment • Define and explain the use of interim therapeutic restoration • Discuss different medicaments used for VPT • State the indications and contraindications for pulpotomy • Describe the clinical procedure for pulpotomy • Compare various pulpotomy agents • Define and differentiate cvek and complete coronal pulpotomy in permanent teeth **SKILL** • Perform pulpotomy on typodont/extracted teeth **ATTITUDE** • Time management • Communication skills • Attendance • Active listening • Problem solving • leadership		
Non vital pulp therapy	**KNOWLEDGE** • Discuss the management of non-vital and abscessed primary molars • State the indications and contraindications of pulpectomy • Discuss the clinical procedure for pulpectomy • Explain the ideal requirements of obturation materials of primary teeth • Compare different material for obturation of primary teeth **SKILL** • Perform pulpectomy on typodont /extracted teeth **ATTITUDE** • Time management	Interactive lecture and demonstration	MCQS/SEQS

	• Communication skills • Attendance • Active listening • Problem solving • leadership		
Full coverage restoration in primary teeth	**KNOWLEDGE** • Discuss and compare various full coverage restorations for posterior teeth • Discuss advantages, disadvantages, indications and contraindications for stainless steel crowns • Identify the commonly used crown pliers • Discuss the preparation of teeth for SSC • Discuss contouring and crimping of SSC • Enlist the clinical steps for placement of SSC • Discuss the use of Hall technique for SSC • Discuss various full coverage anterior restorations • Discuss the clinical technique for strip crown **SKILL** Selection and placement of SSC in phantom lab **ATTITUDE** • Time management • Communication skills • Attendance • Active listening • Problem solving • Leadership	Interactive lectures and demonstration	SEQS/MCQS
Prenatal counselling. Behavior management Management of pain and anxiety	**KNOWLEDGE** • Understand the importance of prenatal counselling • Classify child behaviors at first visit (wright and Frenkel classification) • Discuss the factors affecting child behavior in dental operatory • Enlist different non pharmacological techniques and their application • Define and differentiate minimal ,moderate and deep sedation • Discuss the protocol for monitoring	Interactive lecture	SEQS/MCQS

	and management of pediatric patient before, during and IV sedation (oral, inhalational and transmucosal) • State ASA physical status classification • Compare different routes of conscious sedation (oral, IV, inhalation, transmucosal) • Discuss different pharmacological drugs used for sedation with emphasis on their dosage and duration of sedation • Discuss the management of unexpected loss of consciousness during sedation • Obtain informed consent from the patient • Discuss the clinical procedure for inducing conscious sedation • Discuss the use of nitrous oxide inhalation sedation in pediatric patients • Indications, contraindications, equipment and technique of nitrous oxide sedation • Discuss the adverse effects related to conscious sedations • Discuss the role of general anesthesia in pediatric patient **SKILL** Role play **ATTITUDE** • Time management • Communication skills • Attendance • Active listening • Problem solving • Leadership		
Local anesthesia technique for pediatric patient Management of pain	**KNOWLEDGE** • Describe available topical anesthetic solution • Describe new techniques for achieving topical anesthesia • List various techniques for local anesthesia administration • Describe pain free anesthesia technique • Discuss possible complications of local anesthesia	Demonstration	SEQS/MCQS

	SKILL • Perform painless local anesthesia technique on pediatric patient undergoing restoration treatment **ATTITUDE** • Time management • Communication skills • Attendance • Active listening • Problem solving • Leadership		
Dental trauma	**KNOWLEDDGE** **INTEGRATED WITH OPERATIVE DEPARTMENT** • Understand the special considerations for management of dental trauma in pediatric patient • Classify dental traumatic injuries • Discuss the international association of Dental Traumatology guidelines for management of trauma in primary and permanent teeth • Discuss the impact of dental traumatic injuries in primary and permanent dentition **SKILL** • Thorough patient evaluation and treatment planning for trauma patients **ATTITUDE** • Time management • Communication skills • Attendance • Active listening • Problem solving Leadership	Interactive lecture	SEQS/MCQS
Inherited anomalies of enamel and dentin	**KNOWLEDGE** • Discuss various inherited enamel and dentine defects • Discuss clinical problems associated and treatment objectives when managing enamel and dentine defects • Discuss the etiology, prevention, clinical features and management of: 1. Amelogenesis imperfecta 2. Dentinogenesis imperfecta 3. Molar incisor hypoplasia	Interactive	SEQS/MCQS

	SKILL • Take thorough history and diagnose patients in clinics **ATTITUDE** • Time management • Communication skills • Attendance • Active listening • Problem solving • Leadership		
Periodontal diseases in pediatric patient	**KNOWLEDGE** **INTEGRATED WITH PERIODONTOLOGY DEPARTMENT** • Classify periodontal diseases in children • Discuss the etiology, clinical features and management of active gingival conditions 1. Primary herpetic gingivostomatitis 2. Necrotizing ulcerative gingivitis • Discuss the etiology, clinical features and management of chronic gingivitis and periodontitis • Discuss the etiology, clinical features and management of induced gingival enlargement • Discuss periodontal diseases as a manifestation of various syndromes and systemic diseases **SKILL** • Diagnose patients in clinics **ATTITUDE** • Time management • Communication skills • Attendance • Active listening • Problem solving Leadership	Interactive	SEQS/MCQS
Peado ortho interface	**KNOWLEDGE** **INTEGRATED WITH ORTHODONTIC DEPARTMENT** • Discuss the importance of screening patients for orthodontic referral at the correct time	SGD, Interactive	SEQS/MCQS

	• Formulate a referral letter to an orthodontist when required • Define interceptive orthodontics • Discuss the rationale and sequence of serial extractions • Discuss various space maintainers used in mixed dentition • Discuss various habit breaking appliances in pediatric patients **SKILL** Identify space maintainers and habit breaking appliances ATTITUDE: • Time management • Communication skills • Attendance • Active listening • Problem solving • Leadership		
Oral surgery and pathology in pediatric patients	**KNOWLEDGE** **INTEGRATION WITH ORAL PATHOLOGY** • Discuss the lesions affecting oral soft tissues in children 1. Infections 2. Ulcers 3. Vesiculobullous 4. White lesions 5. Cysts 6. Tumors • Discuss lesions affecting the jaws in children 1. Cysts 2. Developmental **SKILL** • Diagnose patients in clinics **ATTITUDE** • Time management • Communication skills • Attendance • Active listening • Problem solving Leadership	Interactive	SEQS/MCQS
Medical conditions	**KNOWLEDGE** • Understand medical conditions	SGD/ interactive	SEQS/MCQS

affecting children	affecting children • Dental problems associated with their medical condition • Diagnosis of the medical condition • Identification of dental problems • Management of dental problems **SKILL** • Diagnose patients in clinics **ATTITUDE** • Time management • Communication skills • Attendance • Active listening • Problem solving • Leadership		
Long term dental care in children	**KNOWLEDGE** • Understand the importance for long term dental care in children • Diagnose and manage patients with immature root apex **SKILL** • Follow up of patients in clinics **ATTITUDE** • Time management • Communication skills • Attendance • Active listening • Problem solving • Leadership	interactive	SEQS/MCQS
Management of complications	**KNOWLEDGE** • Understand the importance of early identification of problem • Understand the management of complications in pediatric patients **SKILL** • Observe patients in clinics **ATTITUDE** • Time management • Communication skills • Attendance • Active listening • Problem solving • Leadership	interactive	SEQS/MCQS

LEARNING RESOURCE:

Pediatric Dentistry by Richard Welbury 5th edition

Paediatric Dentistry by Pinkham 6th edition

Handbook of Paediatric Dentistry by Cameron 6th Edition

ORTHODONTICS

DEPARTMENT OF ORTHODONTICS
RCoD
WELCOME NOTE
HOD ORTHODONTICS

On behalf of the entire orthodontic department, I would like to extend a warm welcome, as you begin your journey in our specialty. We are excited to have you join our community of scholars and clinicians and are committed to providing you with an exceptional education and training experience.

As you begin this new chapter, please know that our department is devoted to creating a supportive and inclusive environment that fosters academic excellence, creativity, and personal growth.

Once again, we welcome you to our orthodontic family! We are eager to have you on board and anticipate the incredible accomplishments you will achieve. In shaa Allah

Best regards,
Prof Dr Farhat Amin
Head of Orthodontic Department

RATIONALE OF COURSE

Orthodontic dental problems in Pakistan, such as malocclusion, dental crowding, and jaw discrepancies, are increasingly prevalent and impact health and quality of life. Contributing factors include genetic predisposition, cultural practices, dietary habits, and a lack of awareness about orthodontic care. Access to specialized services is limited, particularly in rural areas, and high treatment costs deter families. There is also a need for improved training for dental professionals. To address these issues, clinical departments should focus on awareness campaigns, enhance access through mobile dental units, and conduct research to better understand the prevalence of orthodontic problems across the country.

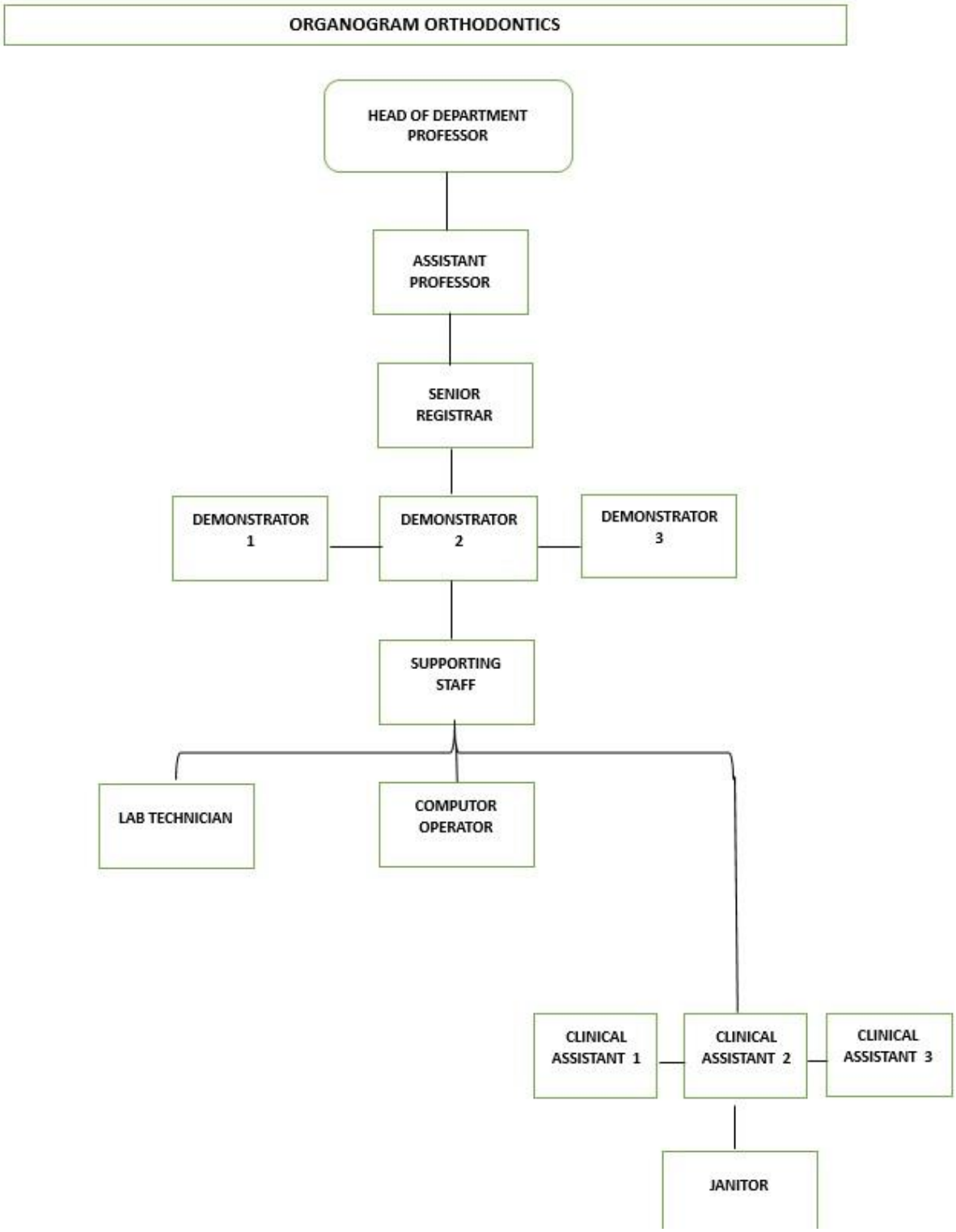
Orthodontic education is crucial in dental training, enhancing knowledge of dental alignment and aesthetics. It improves patient outcomes, fosters interdisciplinary collaboration, and addresses rising public health needs. The curriculum includes hands-on clinical experience, research opportunities, and emerging technologies, while community outreach allows students to engage with underserved populations effectively.

Information transfer methods will include classroom teaching, hands-on exercises, video demonstrations, small group discussions, case-based learning, and role-plays. Educational approaches encompass interactive lectures, collaborative learning, self-study, and tutorials. Cognitive objectives focus on engaging discussions and demonstrations, while psychomotor objectives emphasize clinical skills and patient handling, enhancing affective learning through peer interactions. There are various support options available for students including Dental Clinics, Labs, available Faculty, Simulation tools, and resources like libraries.

DEPARTMENTAL DETAILS

Head of department	Prof. Dr. Farhat Amin
Study Guide developed by	Prof. Dr. Farhat Amin Dr. Maira Mubashar
Total Lectures	81
SGDs	3 for every 7 weeks batch rotation.

DEPARTMENTAL ORGANOGRAM



COURSE INSTRUCTORS

Sr no.	Name	Designation
1	Prof. Dr. Farhat Amin	Head of Department/Professor
2	Dr. Maira Mubashar	Assistant Professor

CLINICAL ROTATION PLAN/ LIST OF PRACTICALS

LIST OF PRACTICALS
Patient Assessment **History Taking & Clinical Examination**
Removable appliances 4 cases
Cast analysis 4 cases
Bolton analysis 2 cases
Adult space analysis 2 cases
Mixed dentition space analysis 4 cases
Nolla Stages 2 cases
CVMS Analysis 2 cases
Hand & Wrist Analysis 1 case
Cephalometric Analysis 4 cases

CLINICAL ROTATIONAL SCHEDULE OF ORTHO FACULTY				
Days	**Orthodontic lectures**	**Ortho Department Clinic**	**Ortho Lab (10.15 am to 3pm)**	**Ortho Consultant Clinic**
Monday		Dr. Maira(AP) Dr Eesha (SR) Dr Laila, Dr Sarah	Prof. Dr Farhat Amin Dr Anas Mushtaq	Prof Dr. Farhat(HOD) Dr Sarah
Tuesday	09-00 am to 10:00 am (Dr.Maira/Dr. Eesha)	Prof Dr. Farhat Dr. Maira Dr. Eesha (SR) Dr Sarah, Dr Anas	Dr Eesha Dr Laila Atiq	Dr Eesha Dr Laila
Wednesday		Prof Dr. Farhat Dr Eesha (SR) Dr Laila, Dr Anas	Dr Maira Mubashar Dr Sarah Saleem	Dr. Maira Dr Anas
Thursday	08:00 am to 09:00 am (Dr. Farhat Amin)	Dr. Maira Dr Eesha (SR) Dr Laila, Dr Sarah	Prof.Dr Farhat Amin Dr Anas Mushtaq	Prof Dr. Farhat Dr Laila
Friday		Prof Dr. Farhat Dr Eesha (SR) Dr Anas, Dr Laila	Dr Maira Mubashar Dr Sarah Saleem	Dr. Maira Dr. Sarah

SMALL GROUP DISCUSSIONS

- The SGD session will take place every other week (Fortnightly)
- This schedule will be followed for each clinical batch of 7 weeks duration.
- Three SGD sessions per batch.

	LECTURE TIMES (8-10)	**ORTHODONTIC CLINIC (10:15-03:00)**	
MONDAY		Clinic	
TUESDAY	Ortho Lecture (9am- 10am)	Clinic	
WEDNESDAY		Clinic	(01:00 – 02:00) **Small group Discussions (Fortnightly)-** Demonstrators and Faculty **SGD Room 4**
THURSDAY	Ortho lecture (8am to 9am)	Clinic	
FRIDAY		Clinic	

STUDENT LEARNING OBJECTIVES

Topics	Learning Objectives	MIT	Mode Of Assessment
INTRODUCTION TO ORTHODONTICS	**KNOWLEDGE** Identify the Evolution of Orthodontic Treatment Goals Analyze Contemporary Treatment Goals Explore Orthodontic Issues and Malocclusion Determine Candidates for Orthodontic Treatment Develop an understanding of the Impact of Oral Function and Associated Risks Identify Evidence-Based Treatment Approaches Develop an Understanding of the Demand for Orthodontic Treatment	Interactive Lectures, Small group Discussions Problem Based Learning	MCQs
ETIOLOGY AND SYNDROMES	**KNOWLEDGE** Identify Specific Causes of Malocclusion Study the Disturbances of Dental Development: Study the effect of Genetic Influences on Malocclusion: Analyze Environmental Influences on Malocclusion: Develop an Understanding of Equilibrium Considerations Identify the Role of Masticatory Function: Identify the Impact of Sucking and Other Habits Review the Effects of Tongue Thrusting Identify the Impact of Respiratory Patterns **INTEGRATION WITH ORAL PATHOLOGY** Analyze Disturbances in Embryologic Development (Syndromes) Determine Growth Disturbances in the Fetal and Perinatal Period	Interactive Lectures, Small group Discussions Problem Based Learning	MCQ, SAQs,

	SKILL Evaluate progressive deformities through clinical assessment and case studies. Diagnose the disturbances arising during adolescence using appropriate clinical methods	Practical/ hands on	OSCE
	ATTITUDE Show sensitivity to the unique challenges faced by patients during these developmental stages. Appreciate the role of genetics in malocclusion and integrate this understanding into OSCE clinical practice.	PRACTICAL/ HANDS ON	OSCE
GROWTH AND DEVELOPMENT	**KNOWLEDGE** Determine Growth Patterns, Variability, and Timing Analyze Measurement Approaches in Growth Studies Evaluate Experimental Approaches to Growth Research Determine Genetic Influences on Growth Determine the Nature of Skeletal Growth Identify Sites and Types of Growth in the Craniofacial Complex Develop an Understanding of Growth in the Cranial Vault Analyze Growth in the Cranial Base Analyze Growth in the Maxilla (Nasomaxillary Complex) Analyze Growth of Facial Soft Tissues Review Theories of Growth Control Differentiate Between Sites	Interactive Lectures, Small group Discussions Problem Based Learning	MCQ, SAQ

GROWTH AND DEVELOPMENT **GROWTH AND DEVELOPMENT**	and Centers of Growth Control Identify Cartilage as a Determinant of Craniofacial Growth Familiarize with the Functional Matrix Theory of Growth Explore Social and Behavioral Development Recognize the Development of Behavior Recognize the Stages of Emotional and Cognitive Development Explore Late Fetal Development and Birth Study Infancy and Early Childhood: The Primary Dentition Years Analyze Physical Development in the Preschool Years Identify Influences on Physical Development Develop an Understanding of the Maturation of Oral Function Determine the Eruption of Primary Teeth Explore Late Childhood: The Mixed Dentition Years Assess Physical Development in Late Childhood Determine the Eruption of Permanent Teeth Analyze Eruption Sequence and Timing: Dental Age Examine Space Relationships in Replacement of Incisors Summarize Space Relationships in Replacement of Canines and Primary Molars Summarize Adolescence: The Early Permanent Dentition Years Analyze the Initiation of Adolescence Determine the Timing of		

GROWTH AND DEVELOPMENT **GROWTH AND DEVELOPMENT**	Puberty Identify Dimensional Changes During Growth Identify Rotation of Jaws During Growth Identify Maturational and Aging Changes Analyze Facial Growth in Adults Examine Changes in Facial Soft Tissues Describe Changes in Alignment and Occlusion **INTEGRATION WITH ORAL BIOLOGY** Explore Growth in the Mandible Identify the role and fate of Meckel's Cartilage Determine the initial site of osteogenesis of mandible Determine the Role of secondary cartilages		
	SKILL Explore Methods for Studying Physical Growth Recognize Growth Patterns in the Dentofacial Complex Recognize the Assessment of Skeletal and Other Developmental Ages	Practical / Hands-on	OSCE
GROWTH AND DEVELOPMENT	**ATTITUDE** Demonstrate a proactive and empathetic approach in recognizing and addressing the impact of aging on oral health	Practical / Hands-on	OSCE
CLASS II MALOCCLUSION	**KNOWLEDGE:** Know the principles and concepts behind Class II growth modification. Recall the historical development and advancements in Class II growth modification treatments. Identify and understand various strategies used for Class II growth modification.	Interactive Lectures, Small group Discussions Problem Based Learning	MCQ, SAQs,
	SKILL:	Hands on/	OSCE

CLASS II MALOCCLUSION	Integrate the key elements and mechanisms involved in Class II growth modification. Compare different perspectives to gain a comprehensive understanding of growth modification.	Practical	
	ATTITUDE : Demonstrate the ability to apply knowledge to assess the effectiveness of Class II growth modification treatments. Maintain a critical yet open-minded approach to evaluating different strategies and be willing to adapt based on new evidence and insights. Foster an attitude of inclusiveness and respect for diverse opinions and approaches in the field of growth modification.	Hands on/ Practical	OSCE
FUNCTIONAL APPLIANCES	**KNOWLEDGE** Compare Functional Appliances Versus Headgear Identify Fixed Class II Correctors Discuss Clinical Management of Functional Appliances	Interactive Lecture, Small group Discussions Problem Based Learning	MCQ, SAQs,
FUNCTIONAL APPLIANCES	**SKILL** Identify Components of Removable and Fixed Class II Functional Appliances.	Hands on/ Practical	OSCE
	ATTITUDE: Value the importance of thorough knowledge of appliance components in ensuring effective and precise orthodontic treatment.	Hands on/ Practical	OSCE

DEVELOPMENT OF OCCLUSION **DEVELOPMENT OF OCCLUSION** **ANDREW'S KEYS TO OCCLUSION**	**KNOWLEDGE** Define Infancy and Early Childhood: The Primary Dentition Years Analyze Physical Development in the Preschool Years Identify Influences on Physical Development Develop an Understanding of the Maturation of Oral Function Enlist the sequence of Eruption of Primary Teeth Explore Late Childhood: The Mixed Dentition Years Assess Physical Development in Late Childhood Identify the Eruption of Permanent Teeth Analyze Eruption Sequence and Timing: Dental Age Examine Space Relationships in Replacement of Incisors	Interactive Lecture, Small group Discussions Problem Based Learning	MCQ, SAQs,
	SKILL Recognize the Assessment of Skeletal and Other Developmental Ages.	Hands on/ Practical	OSCE
	ATTITUDE Display a respectful approach to evaluating developmental stages	Hands on/ Practical	
	KNOWLEDGE : Identify the importance of Andrew's six keys of Occlusion	Interactive Lecture, Small group Discussions Problem Based Learning	OSCE

	SKILL : Apply Andrew's six keys to evaluate and diagnose occlusal relationships effectively, incorporating them into clinical practice.	HANDS ON	MCQs, SAQs
	ATTITUDE Develop a thorough appreciation for the role of Andrew's six keys in achieving optimal occlusal outcomes,	HANDS ON	

SPACE MANAGEMENT **SPACE MANAGEMENT**	**KNOWLEDGE** Enlist Principles of Space Analysis Estimate the Size of Unerupted Permanent Teeth Explore Treatment of Space Problems Address Localized Space Loss (3 mm or Less): Space Regaining Address Mild-to-Moderate Crowding of Incisors With Adequate Space Address Generalized Moderate Crowding Identify and categorize various space-related problems and their impact on orthodontic treatment. Categorize how to manage and address excess space in the dental arch and its implications for treatment. Summarize the relationship between maxillary dental protrusion and spacing issues and outline appropriate treatment strategies. State the methods for managing space and treatment options when dealing with missing permanent teeth. Identify effective treatment approaches for localized moderate-to-severe crowding in the dental arch. Outline the treatment strategies for managing generalized moderate and severe crowding across the dental arch. Identify the rationale, benefits, and potential complications of early (serial) extraction in orthodontic care. Assess and determine appropriate treatment options for cases of borderline crowding in the dental arch	Interactive Lecture, Small group Discussions Problem Based Learning Interactive Lecture, Small group Discussions Problem Based Learning	MCQ, SAQs, OSCE

SPACE MANAGEMENT **SPACE MANAGEMENT**	**INTEGRATION WITH PAEDODONTICS** Identify the use of space maintainers		MCQ, SAQs

	SKILL Assess Space Analysis: Quantification of Space Problems Manage Space Deficiency Due to Allowance for Molar Shift: Space Management Demonstrate the management of Premature Tooth Loss With Adequate Space: Space Maintenance **ATTITUDE** Adopt a thoughtful and patient-centered approach to treatment decisions Value precise estimation of unerupted teeth sizes to ensure effective and predictive orthodontic planning.	Hands On Hands On	OSCE OSCE

ORTHOGNATHIC SURGERY	**KNOWLEDGE:** Compare treatment options for borderline cases, evaluating the choice between camouflage and orthognathic surgery. Assess how the severity of malocclusion determines the need for orthognathic surgery. Discuss how the extraction of teeth influences the decision between camouflage treatment and orthognathic surgery. Outline the objectives and techniques of orthodontic treatment before orthognathic surgery (Pre surgical orthodontics) **INTEGRATION WITH OMFS** Describe current techniques and innovations in orthognathic surgery. Enlist the principles and procedures involved in mandibular surgery. Outline the techniques and considerations specific to maxillary surgery. Discuss additional aesthetic facial procedures that may complement or enhance orthognathic surgery outcomes. Assess factors that contribute to postsurgical stability and the clinical success of orthognathic surgery. Assess factors that contribute to postsurgical stability and the clinical success of orthognathic surgery. Describe strategies for addressing combined vertical and anteroposterior discrepancies in orthodontic and surgical treatment.	Interactive Lecture, Small group Discussions Problem Based Learning	MCQ, SAQs

ORTHOGNATHIC SURGERY	**SKILL** Apply the technique and applications of distraction osteogenesis in orthopedic and orthognathic procedures Show the selection and use of orthodontic appliances in preparation for and following orthognathic surgery.	Practical Hands On	OSCE
ORTHOGNATHIC SURGERY	**ATTITUDE** Cultivate a balanced and patient-centered perspective in treatment planning, demonstrating empathy and a commitment to providing informed and considerate recommendations that align with the patient's overall well-being and treatment goals.	PracticalHands On	OSCE

RETENTION AND RELAPSE **RETENTION AND RELAPSE**	**KNOWLEDGE:** Identify the critical role of retention in orthodontic treatment and its impact on maintaining the results. Recognize the processes of periodontal and gingival tissue reorganization following orthodontic treatment and its implications for retention. Identify how continued growth can affect occlusion and the implications for retention strategies. Summarize the optimal timing for initiating and maintaining retention to ensure long-term stability. Discuss the types, benefits, and proper use of removable retainers in orthodontic retention. Learn about the design, function, and benefits of Hawley retainers in orthodontic retention. Describe the features and uses of wraparound (clip) retainers in orthodontic retention. Identify the benefits and applications of clear (vacuum-formed) retainers for post-treatment retention. Explain the role of positioners in retention and their function in aligning and stabilizing teeth. Identify different types of fixed retainers and their benefits for maintaining orthodontic results over the long term. Identify techniques for maintaining the position of lower incisors during the late stages of growth. Identify strategies for closing diastemas and preventing relapse.	Interactive Lecture, Small group Discussions Problem Based Learning	MCQ, SAQs

RETENTION AND RELAPSE	Identify potential issues and solutions related to inadvertent tooth movement with fixed lingual retainers. Identify techniques for maintaining spaces in the dental arch to prevent issues in orthodontic retention. Describe the use of active retainers to manage minor orthodontic adjustments and maintain treatment results. Learn strategies for realigning irregular incisors during retention and post-treatment. Identify the methods for addressing occlusal discrepancies that occur after orthodontic treatment.		
	SKILL Apply principles of retention to develop and implement effective strategies for maintaining orthodontic outcomes. Select and fit removable retainers according to individual patient needs. Implement techniques to address and correct irregular incisors effectively.	PRACTICAL./HANDS ON	OSCE

RETENTION AND RELAPSE	**ATTITUDE :** Develop a proactive attitude towards long-term patient care Foster a holistic view of orthodontic treatment, acknowledging the importance of adapting to changes in soft tissues to ensure effective retention. Embrace a dynamic approach to orthodontic care that includes anticipating and adapting to growth changes for optimal retention. Promote patient adherence to retention protocols with a supportive and informative approach Value the aesthetic and practical benefits of clear retainers.	PRACTICAL./HANDS ON	OSCE

CROSSBITE **CROSSBITE**	**KNOWLEDGE:** Define cross bite and describe how to identify different types of cross bite in clinical assessments. Explain the causes and classifications of cross bite, including skeletal, dental, and functional types. Discuss the effects of cross bite on oral health, including potential issues with occlusion, tooth wear, and function. Outline the steps involved in developing a treatment plan for cross bite correction during the early mixed dentition and late mixed dentition. Outline the steps involved in developing a treatment plan for cross bite correction during permanent dentition. Describe orthodontic techniques and appliances used to correct cross bite, including the use of slow and rapid expanders. Explain when surgical intervention is necessary for cross bite correction and outline common surgical procedures used. Discuss the importance of retention and strategies for maintaining cross bite correction after treatment.	Interactive Lecture, Small group Discussions Problem Based Learning	MCQ, SAQs

	SKILL Accurately identify and classify different types of cross bite during clinical assessments through examination and diagnostic tools. Articulate and differentiate between the various causes and classifications of cross bite in clinical discussions and documentation. Select appropriate orthodontic appliances and techniques based on clinical needs and treatment goals.	PRACTICAL./HANDS ON	OSCE
	ATTITUDE Value the complexity of treatment planning of cross bite in the permanent dentition Emphasize the importance of retention of cross bite in achieving and preserving treatment results.	Practical./Hands On	OSCE
CLASS III	**KNOWLEDGE** Explain the principles and methods for modifying Class III growth patterns to improve dental and skeletal relationships. Describe the key concepts and strategies used in the treatment of Class III malocclusion, including both orthodontic and orthopedic approaches. Identify the characteristics of anteroposterior and vertical maxillary deficiencies and	Interactive Lecture, Small group Discussions Problem Based Learning	MCQ, SAQs

CLASS III	discuss treatment options to address these issues. Explain the effects of mandibular excess on occlusion and facial aesthetics, and describe treatment strategies to manage and correct this condition.		
	SKILL Accurately apply various treatment strategies for Class III malocclusion, incorporating both orthodontic (e.g., braces, appliances) and orthopedic (e.g., functional appliances, growth modification) approaches.	Practical./Hands On	OSCE
	ATTITUDE Value the integration of both orthodontic and orthopedic approaches to create comprehensive and effective treatment plans for Class III malocclusion.	Practical./Hands On	OSCE
ADULT ORTHODONTICS (ADJUNCTIVE AND COMPREHENSIVE)	**KNOWLEDGE:** Compare adjunctive and comprehensive orthodontic treatments, highlighting their distinct goals and applications. Describe the core principles and indications for adjunctive orthodontic treatment within a broader dental care plan. Enlist the primary goals of both adjunctive and comprehensive orthodontic treatments. Describe specific adjunctive	Interactive Lecture, Small group Discussions Problem Based Learning	MCQ, SAQs

ADULT ORTHODONTICS (ADJUNCTIVE AND COMPREHENSIVE)	procedures, such as those used to complement primary orthodontic treatment. Explain techniques and strategies for up righting posterior teeth to correct alignment and improve occlusion. Discuss methods and appliances used for the effective correction of cross bites. Describe the techniques and goals of extruding teeth to address alignment and occlusal issues. Explain strategies for aligning anterior teeth to improve esthetics and function. Discuss considerations and strategies for implementing comprehensive orthodontic treatment in adult patients. Identify and address the psychological factors that can influence orthodontic treatment and patient outcomes. Explain how temporomandibular dysfunction (TMD) can be a factor in orthodontic treatment planning and management. Describe the impact of orthodontic treatment on periodontal health and the considerations needed to ensure periodontal stability. Discuss how orthodontic treatment interacts with prosthodontic and implant procedures, including planning and integration.		

ADULT ORTHODONTICS (ADJUNCTIVE AND COMPREHENSIVE)	**SKILL:** Analyze and compare cases to determine whether adjunctive or comprehensive orthodontic treatment is more appropriate. Skillfully incorporate adjunctive procedures into the orthodontic treatment plan as needed. Apply extrusion techniques effectively, Utilize effective strategies and techniques to align anterior teeth	Practical./Hands On	OSCE
	ATTITUDE: Demonstrate a proactive approach in identifying when adjunctive treatments are necessary and beneficial. Maintain a patient-centered approach, focusing on achieving the goals Embrace ongoing learning and adaptation to biomechanical advancements Show a commitment to addressing cross bites with effective and evidence-based treatments.	Practical./Hands On	OSCE

CLEFT LIP AND PALATE **CLEFT LIP AND PALATE**	Define cleft lip and cleft palate, including their types, causes, and genetic factors. Explain the methods for diagnosing cleft lip and palate and the classification systems used to categorize their severity. Discuss the effects of cleft lip and palate on oral function, dental development, and overall health. Describe the roles of various healthcare professionals (e.g., surgeons, orthodontists, speech therapists) in the multidisciplinary management of cleft lip and palate. Explain the orthodontic considerations and treatment options for patients with cleft lip and palate, including timing and technique. **INTEGRATION WITH PROSTHODONTICS AND OMFS** Describe prosthetic and rehabilitative interventions that can assist with functional and esthetic outcomes for cleft patients. Outline the Orthognathic surgical Procedures.	Interactive Lecture, Small group Discussions Problem Based Learning	MCQ, SAQs
	SKILL : Develop orthodontic treatment plans tailored to the specific needs of cleft lip and palate patients Accurately identify and describe the different types of cleft lip and cleft palate in clinical and educational settings. Use diagnostic tools and classification systems to assess and document the severity of cleft lip and palate Develop and implement orthodontic treatment plans	Practical./Hands On	OSCE

	tailored to the specific needs of cleft lip and palate patients		
	ATTITUDE: Show a holistic understanding of how cleft conditions impact patients' quality of life and overall well-being. Foster a collaborative and team-oriented attitude Approach orthodontic treatment with flexibility and creativity acknowledging the unique challenges presented by cleft conditions	Practical./Hands On	OSCE
CLASSIFICATION OF MALOCCLUSION	Use classification systems to categorize malocclusions. Develop an understanding of how classification systems are developed. Explain Additions to the Five-Characteristics Classification System Classification by the Characteristics of Malocclusion Create a problem list to guide orthodontic treatment.	Interactive Lecture, Small group Discussions Problem Based Learning	MCQ, SAQs
	SKILL: Accurately apply classification systems to categorize malocclusions in clinical practice Apply the Five-Characteristics Classification System, incorporating recent additions Utalize characteristic-based classification methods to accurately diagnose the patient's malocclusion. Develop a comprehensive	Practical./Hands On	OSCE

	problem list based on clinical evaluation		
	ATTITUDE: Demonstrate attention to detail and precision when classifying malocclusions Embrace changes and updates to classification systems with a positive attitude Exhibit a methodical and patient-centered approach when creating problem lists	Practical./Hands On	OSCE
BIOMECHANICS	**KNOWLEDGE:** Enlist the different types of tooth movement (e.g., translation, rotation, tipping) and how force distribution affects these movements. Enlist potential adverse effects of orthodontic forces, such as root resorption, periodontal damage, and discomfort Outline the principles of anchorage and its importance in orthodontic treatment, including types of anchorage Identify indications for using fixed appliances in orthodontic treatment Compare and contrast removable and fixed appliances, including their indications, benefits, and limitations Categorize fundamental biomechanics concepts, including force, moment, and torque, and their definitions as they relate to orthodontics Generalize the primary theories of orthodontic tooth movement, Identify the impact of applied forces on periodontal ligament Identify certain drugs that	Interactive Lecture, Small group Discussions Problem Based Learning	MCQ, SAQs

BIOMECHANICS	can influence orthodontic tooth movement **INTEGRATION WITH DENTAL MATERIALS** Define fundamental properties of elastic materials, including elasticity and stress-strain relationships. Identify various materials used for orthodontic arch wires		
	SKILL: Analyze clinical scenarios to apply appropriate force distribution strategies for desired tooth movements. Identify and mitigate potential deleterious effects through careful treatment planning and monitoring. Apply appropriate anchorage strategies to maintain stability Select and apply appropriate arch wire materials based on their properties and treatment needs.	Practical./Hands On	OSCE
	ATTITUDE: Value the role of effective anchorage in achieving optimal treatment results Maintain an open-minded approach to selecting between removable and fixed appliances Embrace continuous learning and adaptation to new advancements in fixed appliance technology to enhance treatment effectiveness. Value the theoretical foundations of orthodontic tooth movement	Practical./Hands On	OSCE

DEEP BITE	Define deep bite and its key characteristics. Identify common causes and factors contributing to a deep bite. Explain how a deep bite affects oral function and esthetics. Describe methods for diagnosing a deep bite. Outline treatment-planning strategies for correcting a deep bite. Identify appliances used to correct a deep bite. Discuss when surgery is needed for severe deep bites. Explain the importance of retention and long-term management after treatment.	Interactive Lecture, Small group Discussions Problem Based Learning	MCQ, SAQs
	SKILL: Accurately identify and describe the characteristics of a deep bite during clinical examination. Evaluate the functional and esthetic implications of a deep bite in individual patients Select and utilize appropriate appliances based on the patient's specific deep bite characteristics and treatment goals.	Practical./Hands On	OSCE
	ATTITUDE: Show an analytical approach to understanding the multifactorial origins of deep bite Demonstrate thoroughness and precision in diagnostic procedures to ensure accurate assessment	Practical./Hands On	OSCE

OPEN BITE	Define open bite and its key characteristics. Identify common causes and factors contributing to an open bite. Explain how an open bite affects oral function and esthetics. Describe methods for diagnosing an open bite. Outline treatment-planning strategies for correcting an open bite. Identify appliances used to correct an open bite. Discuss when surgery is needed for severe open bites. Explain the importance of retention and long-term management after treatment.	Interactive Lecture, Small group Discussions Problem Based Learning	MCQ, SAQs
	SKILL: Accurately identify and describe the characteristics of an open bite during clinical examination. Evaluate the functional and esthetic implications of an open bite in individual patient Select and utilize appropriate appliances based on the patient's specific open bite characteristics and treatment goals.	Practical./Hands On	OSCE
	ATTITUDE: Show an analytical approach to understanding the multifactorial origins of open bite Demonstrate thoroughness and precision in diagnostic procedures to ensure accurate assessment	Practical./Hands On	OSCE
BANDING AND BONDING	**KNOWLEDGE:** Indications for Banding and Bonding Evaluate the Clinical Procedures Analyze the Advantages and Disadvantages	Interactive Lecture, Small group Discussions Problem Based Learning	MCQ, SAQs

	SKILL: Use clinical criteria to decide between banding and bonding Effectively perform the banding and bonding procedures, including the application of bonding agents, placement of bands, and ensuring proper alignment and adhesion. Analyze the trade-offs between banding and bonding	Practical./Hands On	OSCE
	ATTITUDE: Appreciate the importance of choosing the correct method to ensure effective treatment outcomes and patient satisfaction Approach clinical procedures with meticulous attention Communicate effectively with patients about the pros and cons of each method	Practical./Hands On	OSCE
DIAGNOSIS	**KNOWLEDGE:** Use questionnaires and interviews to gather patient information. Identify the patient's main concern for treatment planning. Collect and review the patient's medical and dental history. Assess physical growth to guide orthodontic treatment. Evaluate social and behavioral factors affecting treatment. Conduct a clinical exam to diagnose and plan treatment. Assess oral health, Evaluate jaw function Review facial and dental appearance for orthodontic issues. Identify necessary diagnostic records for assessment.	Interactive Lecture, Small group Discussions Problem Based Learning	MCQ, SAQs

	SKILL: Effectively administer questionnaires and conduct interviews to gather relevant patient information Effectively identify and prioritize the patient's main concerns by analyzing gathered information Accurately collect and review the patient's medical and dental history Assess and track physical growth Conduct a comprehensive clinical examination Accurately collect and utilize diagnostic records	Practical./Hands On	OSCE
	ATTITUDE: Foster open communication to build trust with patient. Value the patient's perspective Maintain a patient-centered approach, considering how each aspect of the assessment affects the patient's overall treatment and well-being.	Practical./Hands On	OSCE
EXTRACTION/ NON EXTRACTION TREATMENT	**KNOWLEDGE:** Identify the Indications for Extraction Evaluate Non-Extraction Treatment Options Compare and Contrast Treatment Outcomes Explore the Impact on Facial Aesthetics and Function	Interactive Lecture, Small group Discussions Problem Based Learning	MCQ, SAQs
	SKILL: Evaluate and determine the necessity for extraction	Practical./Hands On	OSCE
	ATTITUDE: Exhibit ethical considerations in making extraction decisions	Practical./Hands On	OSCE

CROWDING/ SPACING	**KNOWLEDGE:** Classify Types of Crowding and Spacing Identify the Etiology of Crowding and Spacing Assess Diagnostic Methods and Tools Analyze the Impact of Crowding and Spacing on Dental Health Evaluate Treatment Options for Crowding Review Treatment Strategies for Spacing	Interactive Lecture, Small group Discussions Problem Based Learning	MCQ, SAQs
	SKILL: Effectively apply diagnostic methods and tools to accurately assess and measure crowding and spacing. Plan and implement treatment strategies to address spacing effectively	Practical./Hands On	OSCE
	ATTITUDE: Educate patients about the causes , issues and treatment of their crowding or spacing	Practical./Hands On	OSCE
MIDLINE DIASTEMA/ SUPERNUMERARIES	**KNOWLEDGE:** Define Midline Diastema and Supernumerary Teeth Identify the Etiology Assess Diagnostic Methods Treatment Options for Midline Diastema and supernumerary teeth Review Long-Term Stability and Prognosis	Interactive Lecture, Small group Discussions Problem Based Learning	MCQ, SAQs

	SKILL: Effectively utilize diagnostic tools to assess the extent and implications of midline diastema and supernumerary teeth. Effectively implement the chosen treatment options and monitor their progress.	Practical./Hands On	OSCE
	ATTITUDE: Educate patients about the causes of their conditions to help them understand the need for specific treatments. Ensure patients are well informed about their treatment options, including the benefits, risks, and expected outcomes.	Practical./Hands On	OSCE

DEPARTMENTAL INVOLVEMENT IN INTEGRATED TEACHINGS
CORE SUBJECT: ORTHODONTICS

	1ST YEAR	2ND YEAR	3RD YEAR	4th YEAR
Subject	**ORAL BIOLOGY**			**ORAL AND MAXILLOFACIAL SURGERY**
Topic	Occlusion			Orthognathic Surgery
SLOs	Discuss the development of occlusion •Explain the three classes of occlusion •Discuss the general occlusal curvatures •Define overjet, overbite, primate spaces, leeway spaces •Define canine-guided and group function occlusion •Discuss centric occlusion & centric relation			Compare treatment options for borderline cases, evaluating the choice between camouflage and orthognathic surgery. Assess how the severity of malocclusion determines the need for orthognathic surgery Discuss how the extraction of teeth influences the decision between camouflage treatment and orthognathic surgery. Outline the objectives and techniques of orthodontic treatment before orthognathic surgery (Pre surgical orthodontics)
Topic				CLAP
SLOs				Explain the orthodontic considerations and treatment options for patients with cleft lip and palate, including timing and technique during the primary, mixed and permanent dentition.
Subject				**OPERATIVE DENTISTRY**
Topic				Adjunctive Orthodontics
SLOs				Describe specific adjunctive procedures, such as those used to complement primary orthodontic treatment. Explain techniques and strategies for up righting

				posterior teeth to correct alignment and improve occlusion Describe the techniques and goals of extruding teeth to address alignment and occlusal issues. Explain strategies for aligning anterior teeth to improve esthetics and function.

LEARNING RESOURCES

1. **CONTEMPORARY ORTHODONTICS, 6TH EDITION**
   By William R. Profit, DDS, PhD, Henry W. Fields, Jr., DDS, MS, MSD and David M. Sarver, DMD, MS
2. **AN INTRODUCTION TO ORTHODONTICS 5TH EDITION, LAURA MITCHELL.**
3. **HANDBOOK OF ORTHODONTICS 4th Edition Authors: Robert. E. Moyers**

ORAL AND MAXILLOFACIAL SURGERY

WELCOME NOTE BY HEAD OF DEPARTMENT

Welcome to the Department of Maxillofacial Surgery, where science and skill converge to shape futures. As you step into this rigorous and rewarding field, prepare to challenge yourself like never before. From intricate facial reconstructions to life-changing trauma surgeries, you'll be learning techniques that require both precision and creativity. Our faculty, a group of experts with vast clinical experience and a passion for teaching, will push you to think critically, act decisively, and always strive for excellence. This is more than a department—it’s a community where you’ll grow not just as a surgeon, but as a person ready to make an impact.

RATIONALE FOR THE COURSE

Dental problems in Pakistan significantly impact oral and maxillofacial health. Patients from regions in the periphery suffer from limited dental resources and a lack of trained professionals, contributing to untreated conditions. By the time has significantly upstaged and progressed. To improve the current situation, it is crucial to enhance public awareness of importance of oral hygiene, screening for oral cancer to facilitate early detection and timely referral and public awareness for road safety. Addressing these challenges is essential for better oral health outcomes and reducing the burden of surgical issues.

Maxillofacial Surgeons play a crucial role in managing trauma from accidents or inter-personal violence, pathology including cysts and oral cancer, surgical extractions of impacted 3rd molars, extractions due to non-restorable dental caries and periodontal disease, cleft lip and palate related procedures, orthognathic surgery for managing severe malocclusion and maxillofacial deformity.

With rising awareness and demand for surgical services, the field is expanding, supported by advancements in technology and techniques. However, there is a need for more specialized training programs to enhance health care professionals' skills. Overall, maxillofacial surgery significantly contributes to public health thereby improving patients' quality of life.

In order to enhance students' grasp over the subject, the Oral & Maxillofacial Surgery department promotes innovative teaching methodologies like case and problem based learning, flipped classroom, peer teaching and reflective learning.

Various support options for improving students' comfort and performance are available. These include faculty mentorship program, hands-on supervised training, research facilities, community service programs, peer supported study groups, library access, conferences, workshops, continuous feedback mechanism, learning management system and mental health support.

DEPARTMENTAL DETAILS

Course Director

Prof Dr Ashfaq Ur Rahim	BDS, FCPS, CMT, FAOCMF (UK)	Head of Department Professor

Contributors

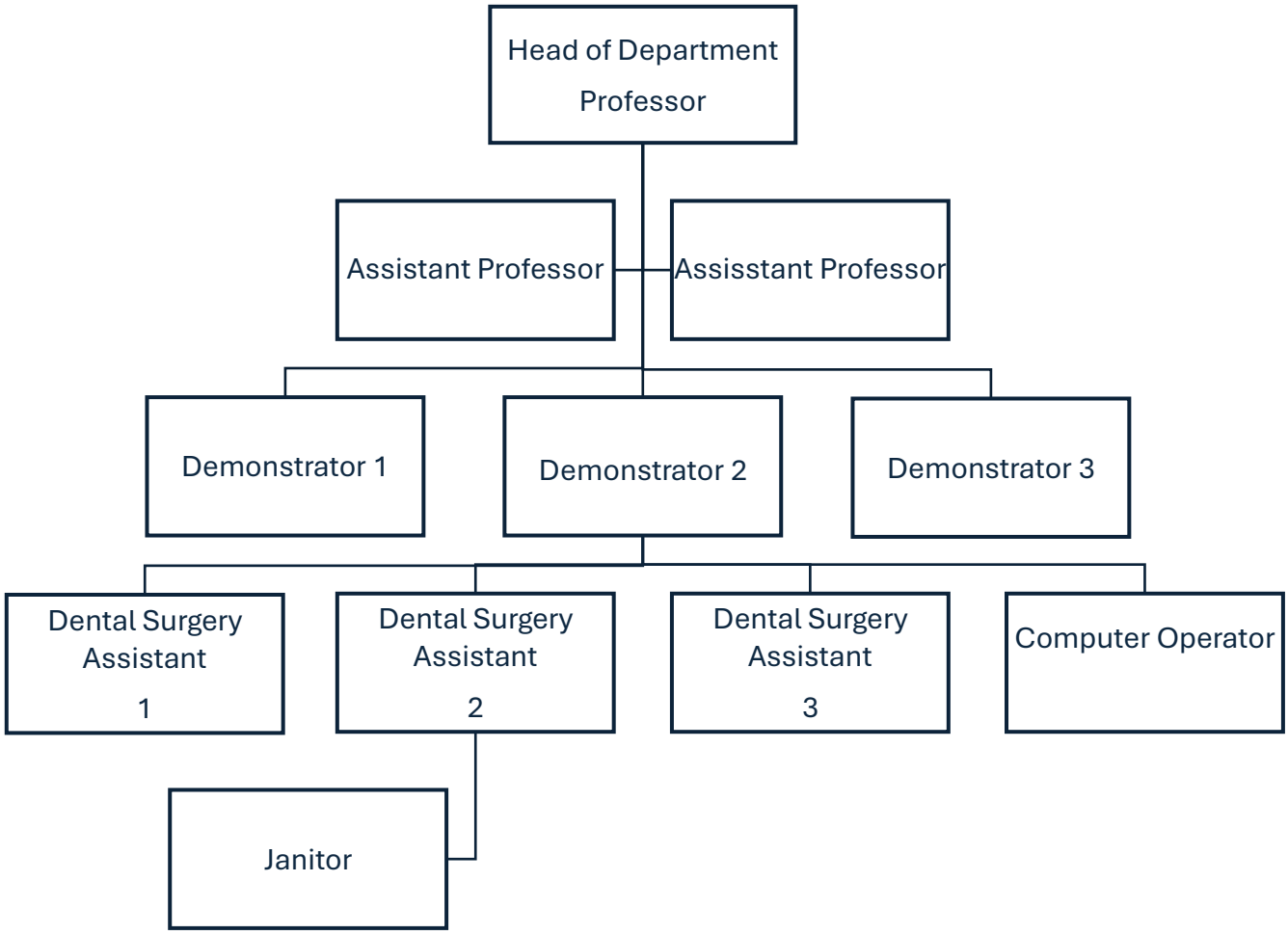
Brig. (R) Dr Babar Pasha	BDS, MCPS, FCPS, CHPE	Assistant Professor
Dr Bushra Mazhar	BDS, MFD RCSI, FCPS	Assistant Professor

Co-Contributors:

Dr Vaffa Shahid Khan	BDS	Demonstrator
Dr Bareerah Idrees	BDS	Demonstrator
Dr Fatima Wasif	BDS	Demonstrator

Total Lectures	**81**
Small Group Discussion Sessions (7 weeks)	**3**
Clinical Demonstrations (7 weeks)	**4**

DEPARTMENTAL ORGANOGRAM
ORAL AND MAXILLOFACIAL SURGERY



COURSE INSTRUCTORS

Sr no.	Name	Designation
1.	Prof Ashfaq Ur Rahim	Professor
2.	Brig (R) Dr Babar Pasha	Assistant Professor
3.	Dr Bushra Mazhar	Assistant Professor

CLINICAL ROTATION PLAN

CLINICAL DEMONSTRATION

Venue: Skills Laboratory

DEMONSTRATION TOPICS:

1. Maxillomandibular fixation on models
2. Armamentarium for minor oral surgery
3. Armamentarium for major surgery OMFS
4. Introduction to emergency equipment in dental office

DAY 1	**ORIENTATION DAY**			
WEEK	**Day**	**Time**	**Demonstration Topic**	**Instructor**
WEEK 1	Tuesday	01:00 pm - 02:00 pm	Maxillomandibular fixation on models	Prof Ashfaq Ur Rahim
WEEK 2	Tuesday	01:00 pm - 02:00 pm	Armamentarium for minor oral surgery	Dr Bushra Mazhar
WEEK 3	Tuesday	01:00 pm - 02:00 pm	Armamentarium for major surgery OMFS	Dr Babar Pasha
WEEK 4	Tuesday	01:00 pm - 02:00 pm	Introduction to emergency equipment in dental office	Prof Ashfaq Ur Rahim
WEEK 7	**CLINICAL TEST**			

SMALL GROUP DISCUSSION SCHEDULE
ORAL AND MAXILLOFACIAL SURGERY

DAY 1	**ORIENTATION DAY**			
WEEK	**Day**	**Time**	**Topics**	**Instructor**
WEEK 1	Monday	01:00 pm - 02:00 pm	**SGD:** Management of medically compromised patients	Prof Ashfaq Ur Rahim
WEEK 2	Monday	01:00 pm - 02:00 pm	**SGD:** Pain management of exodontia patients	Dr Bushra Mazhar
WEEK 3	Monday	01:00 pm - 02:00 pm	**SGD:** Management of impacted teeth	Dr Babar Pasha
WEEK 7	**CLINICAL TEST**			

FACULTY DUTY ROSTER FOR CLINICAL ROTATION

ORAL AND MAXILLOFACIAL SURGERY

DAY	**FINAL YR BDS** **CLINICAL SUPERVISION** **10:15am-2:00pm**
Mon	Prof Ashfaq Ur Rahim Brig (R) Babar Pasha Dr Bushra Mazhar Dr Fatima Wasif
Tues	Prof Ashfaq Ur Rahim Brig(R) Babar Pasha Dr Bareerah Idrees Dr Vaffa Shahid
Wed	Prof Ashfaq Ur Rahim / Brig (R) Babar Pasha Dr Vaffa Shahid Dr Bushra Mazhar
Thurs	Prof Ashfaq Ur Rahim Brig(R) Babar Pasha Dr Bushra Mazhar Dr Bareerah Idrees
Fri	Prof Ashfaq Ur Rahim Dr Bushra Mazhar Dr Vaffa Shahid Dr Fatima Wasif

DUTY ROSTER FOR COMPREHENSIVE CARE DENTISTRY
ORAL & MAXILLOFACIAL SURGERY DEPARTMENT

Day	Demonstrator on Duty	Student On Duty	Faculty Member On Call
Monday	Dr Vaffa Shahid	Student 1, Student 2	Brig (R) Babar Pasha
Tuesday	Dr Fatima Wasif	Student 3, Student 4	Prof Ashfaq Ur Rahim
Wednesday	Dr Bareerah Idrees	Student 5, Student 6	Dr Bushra Mazhar
Thursday	Dr Fatima Wasif	Student 7, Student 8	Brig (R) Babar Pasha
Friday	Dr Bareerah Idrees	Student 9, Student 10	Dr Bushra Mazhar

COURSE LEARNING OBJECTIVES

The Oral and Maxillofacial Surgery (OMFS) curriculum comprises of 9 courses, namely:

1. Principles of surgery
2. Local anesthesia
3. Exodontia & impactions
4. Pre-prosthetic surgery and implantology
5. Orofacial infections
6. Oral and maxillofacial pathology
7. Oral and maxillofacial trauma
8. Craniofacial deformity
9. Temporomandibular and other facial pain disorders

STANDARD LEARNING OBJECTIVES

Course 1: Principles of Surgery				
Ser	**Topic**	**Specific Learning Outcomes (SLOs)**	**Mode of Information Transfer (MIT)**	**Mode of Assessment**
1.	Pre-operative health status evaluation	**Knowledge** ✓ Describe the importance of health status evaluation and its impact on patients' outcome. ✓ Identify the key components of a patient's medical history relevant to oral surgery, including systemic conditions, medications, and allergies. ✓ Exhibit familiarity with diagnostic tools and tests used in pre-operative evaluation e.g imaging studies, laboratory tests and physical examination. ✓ Employ ethical and legal considerations involved in oral surgery patient evaluation and management, including informed consent and patient confidentiality.	Interactive lecture / Small Group Discussion (SGD)	MCQ, SAQ, Viva
		Skill ✓ Evaluate patient's medical history for risk factors. ✓ Perform physical examination of an oral surgery patient and record vital signs. ✓ Appropriately manage patients with compromising medical conditions & seek guidance when needed. ✓ Identify limits of surgical expertise and appropriately decide when specialty referral is indicated.	Clinical demonstration / SGD	OSCE
		Attitude ✓ Develop a compassionate, professional and empathetic approach towards patients. ✓ Educate patient regarding treatment options. ✓ Display good communication skills.	Clinical demonstration / SGD	OSCE

2.	Management and prevention of medical emergencies	**Knowledge** ✓ Recognize common medical emergencies in oral surgery. ✓ Describe the principles of management of medical emergencies. ✓ Enlist pharmacologic and non-pharmacologic means and procedures of preventing and managing medical emergencies in oral surgery. ✓ Comprehend patho-physiology of various medical emergencies.	Interactive lecture / SGD	MCQ, SAQ, Viva
		Skill ✓ Identify patients at risk for medical emergencies and modify treatment plan accordingly. ✓ Perform initial stabilizing treatment for medical emergencies encountered in oral surgery clinics until patient is transferred to a higher level of care when indicated.	Clinical demonstration / SGD	OSCE
		Attitude ✓ Demonstrate reliability in carrying out emergency protocols and learning from each incident.	Clinical demonstration / SGD	OSCE
3.	Principles of Surgery	**Knowledge** ✓ Enlist risks and complications of surgical procedures. ✓ Enlist indications for hospital-based care. ✓ Enlist principles of incision and flap design, hemostasis, pre and post-surgical care.	Interactive lecture / SGD	MCQ, SAQ, Viva
		Skill ✓ Formulate a treatment plan. ✓ Perform referral to other specialties when indicated. ✓ Take appropriate measures to achieve hemostasis. ✓ Select and use equipment, instruments and materials as indicated for the procedure. ✓ Design mucoperiosteal flaps. ✓ Provide post-operative care and instructions including pain management and nutrition.	Clinical demonstration / SGD	OSCE

		Attitude ✓ Exhibit professional attitude while being considerate towards patient anxiety and discomfort during treatment.	Clinical demonstration / SGD	OSCE
4.	Wound Repair	**Knowledge** ✓ Classify wounds and enlist different characteristics of different wounds and associated healing challenges. ✓ Enlist indications of various suturing techniques. **<u>Integrated with General Pathology:</u>** ✓ Anticipate the physiological response to surgical intervention. ✓ Enlist phases of wound healing, factors influencing them.	Interactive lecture	MCQ, SAQ, Viva
		Skill ✓ Perform various techniques for suturing of wounds according to principles of surgery, and appropriately select suture material based on the location of surgical site and wound characteristics.	Clinical demonstration / SGD	OSCE
		Attitude ✓ Exhibit effective collaboration with the surgical team and other health care professionals to ensure comprehensive wound care while being responsive to patient needs.	Clinical demonstration / SGD	OSCE
5.	Infection Control	**Knowledge** ✓ Articulate the core principles of infection control in oral surgery setting. ✓ Show familiarity with cross-infection control guidelines, use of personal protective equipment, hand hygiene and environmental cleaning.	Interactive lecture	MCQ, SAQ, Viva
		Skill ✓ Exhibit proficiency in understanding various methods of sterilization and disinfection for surgical instruments and equipment. ✓ Demonstrate appropriate measures for cross-infection control, use of personal protective equipment, hand hygiene,environmental cleaning and sharps disposal.	Clinical demonstration / SGD	OSCE
		Attitude ✓ Demonstrate a proactive attitude towards adhering to infection control	Clinical demonstration / SGD	OSCE

		standards and guidelines.		
6.	Medico legal Issues	**Knowledge** ✓ Recognize the importance of documentation.	Interactive lecture / SGD	MCQ, SAQ, Viva
		Skill ✓ Take informed consent of a patient. ✓ Document patient and procedure records and any associated complications adequately.	Clinical demonstration / SGD	OSCE
		Attitude ✓ Maintain professionalism during all interactions related to medico legal issues.	Clinical demonstration / SGD	OSCE
Course 2: Local Anesthesia & Pain Management				
		<u>Knowledge</u> **<u>Integrated with Pharmacology:</u>** ✓ Demonstrate understanding of mode of action of local anesthesia.	Interactive lecture / SGD	MCQ, SAQ, Viva
		<u>Skill</u> ✓ Manage acute oral and maxillofacial pain using pharmacological agents. ✓ Recognize complications and failures of pharmacological management of acute oral and maxillofacial pain. ✓ Write prescriptions for drugs used to manage acute oral and maxillofacial pain. ✓ Select the appropriate local anesthetic agent and vasoconstrictor. ✓ Select the appropriate armamentarium for delivering local anesthesia. ✓ Demonstrate various local anesthesia injection techniques. ✓ Assess effectiveness of local anesthesia. ✓ Manage local anesthesia failures. ✓ Identify signs of complications, appropriate response and treatment, and documentation of adverse events. ✓ Manage patient fear and anxiety. ✓ Recognize need for general anaesthesia and have patient evaluated for general anesthesia fitness.	Clinical demonstration / SGD	OSCE

		Attitude ✓ Be empathetic and attentive to patient's needs. ✓ Be vigilant in monitoring for adverse reactions	Clinical demonstration / SGD	OSCE
Course 3: Exodontia & Impactions				
1.	Exodontia	**Knowledge** ✓ Enlist indications for tooth extraction	Interactive lecture / SGD	MCQ, SAQ, Viva
		Skill ✓ Justify indications for tooth extraction. ✓ Select appropriate armamentarium for simple exodontia. ✓ Adequately use armamentarium according to basic principles of surgery. ✓ Apply clinical and radiographic indications of surgical complexity. ✓ Apply biomechanical principles as they apply in exodontia (chair positioning, patient and operator positioning according to the tooth being extracted). ✓ Appropriately manage post-operative pain, complications such as dry socket, bleeding etc. ✓ Demonstrate use of extraction forceps and elevators, application of proper techniques for both simple and surgical extractions, and handling of soft and hard tissue.	Clinical demonstration / SGD	OSCE
		Attitude ✓ Exhibit a strong focus on ensuring patient safety and comfort throughout extraction procedure	Clinical demonstration / SGD	OSCE
2.	Principles of Complicated Exodontia	**Knowledge** ✓ Design a mucoperiosteal flap and plan the bone and tooth removal and wound closure in the event that completion of extraction with forceps and elevator alone is not possible. ✓ Anticipate difficulties with and complications of extraction, avoid them where possible and treat those that occur.	Interactive lecture / SGD	MCQ, SAQ, Viva

		Skill ✓ Distinguish on the basis of clinical and radiographic features those teeth likely to be difficult to remove with forceps from the more straight forward cases. ✓ Design a mucoperiosteal flap and plan the bone and tooth removal and wound closure in the event that completion of extraction with forceps and elevator alone is not possible. ✓ Anticipate difficulties when carrying out a case of complicated exodontia. ✓ Prevent complications of extractions; avoid them where possible and treat those that occur. ✓ Use appropriate armamentarium for managing a complicated exodontia case.	Clinical demonstration / SGD	OSCE
		Attitude ✓ Exhibit an empathetic patient-centered approach.	Clinical demonstration / SGD	OSCE
3.	Impactions	**Knowledge** ✓ Differentiate the types of tooth impactions based on various classification systems. ✓ State epidemiology and prevalence of each type of impaction. ✓ Recall anatomy of various structures in close proximity of the associated surgical extraction site and recognize potential complications related to them. ✓ Formulate a plan for management of impacted teeth, including considerations regarding potential complications.	Interactive lecture / SGD	MCQ, SAQ, Viva
		Skill ✓ Formulate a plan for management of impacted teeth, including considerations regarding potential complications. ✓ Appropriately position self and patient for extraction and use non dominant hand effectively for a surgical extraction. ✓ Counsel the patient regarding relative merits and de-merits of removal of an impacted and ectopic	Clinical demonstration / SGD	OSCE

		tooth, including advising on the potential adverse effects of leaving the tooth in place or its surgical removal. ✓ Determine the degree of difficulty and risk associated with the removal of impacted tooth ✓ Compare which patients require referral to specialist. ✓ Select appropriate surgical method and additional drug therapy. ✓ Minimize peri-operative and postoperative complications of surgical removal of impacted tooth. ✓ Provide adequate postoperative care and follow-up. ✓ Prevent complications related to tooth to be extracted. ✓ Appropriately manage complications of exodontia. ✓ Respond promptly and effectively to any surgical complication/ emergencies related to impacted teeth or adverse reactions.		
		Attitude ✓ Offer psychological support and manage patient anxiety related to surgical procedures. ✓ Adhere to ethical principles in treatment planning and execution, ensuring patient welfare and safety.	Clinical demonstration / SGD	OSCE
Course 4: Pre-prosthetic Surgery, Implantology and Peri-Radicular Surgery				
1.	Pre-prosthetic Surgery	**Knowledge** ✓ Recall anatomy of oral cavity. ✓ Recognize conditions that may impact prosthodontic treatment e.g bone loss, soft tissue anomalies etc. ✓ Be familiar with various surgical techniques/procedures for prosthetic rehabilitation of oral cavity. ✓ Describe methods used for enlargement if denture bearing areas. ✓ Enlist basic surgical principles as applied to pre-prosthetic surgery including alveoloplasty. **<u>Integrated with Prosthodontics:</u>** ✓ Be able to formulate a plan for prosthetic rehabilitation of oral cavity, including diagnostic	Interactive lecture / SGD	MCQ, SAQ, Viva

		evaluation and pre-surgical assessment for establishing need of pre-prosthetic surgery.		
		Skill ✓ Perform diagnostic evaluation, pre-surgical assessment and formulate treatment plan for prosthetic rehabilitation of patient. ✓ Counsel the patient regarding the pros and cons of pre-prosthetic surgery procedures. ✓ Determine if specialty consultation and/or referral are indicated. ✓ Acquire hands-on skill for precise execution of pre-prosthetic surgical techniques including flap design, handling of soft and hard tissues, suturing etc.	Clinical demonstration / SGD	OSCE
		Attitude ✓ Foster a professional and patient-centered approach to pre-prosthetic oral surgery. ✓ Work effectively with other specialties to ensure a cohesive treatment plan.	Clinical demonstration / SGD	OSCE

2.	Implantology	**Knowledge** ✓ Enlist indications, contraindications and potential complications of dental implants for oral rehabilitation. ✓ Recognize parts of implant surgery armamentarium. ✓ Compare signs and symptoms of ailing and failing implants. ✓ Comprehend principles of osseointegration, tissue engineering, biomaterials and biomechanics as they apply to implant therapy. ✓ Compare various implant-related surgical procedures e.g Guided Tissue Regeneration (GTR), Block Bone Grafting, Alveolar Distraction and Sinus lift procedures.	Interactive lecture / SGD	MCQ, SAQ, Viva
		Skill ✓ Evaluate patient for implant suitability, using various methods e.g history, clinical exam, radiology etc and formulate individualized treatment plans. ✓ Identify signs and symptoms of ailing and failing implants. ✓ Recognize parts of implant surgery armamentarium. ✓ Be aware of potential complications of implant surgery and measures for their prevention and management.	Clinical demonstration / SGD	OSCE
		Attitude ✓ Ability to work effectively in a multi-disciplinary team.	Clinical demonstration / SGD	OSCE
3.	Peri-radicular Surgery	**Knowledge** ✓ Exhibit familiarity with various incisions and flap designs for peri-radicular surgery. **<u>Integrated with Operative Dentistry:</u>** ✓ Recall anatomy of the tooth root, surrounding tissues, and the pathophysiology of peri-radicular disease. ✓ Discuss root end cavity preparation and identify materials used for resected root end management.	Interactive lecture / SGD	MCQ, SAQ, Viva

		Skill ✓ Perform clinical evaluation of a patient requiring endodontic surgery. ✓ Identify suitable case for surgical endodontics and whether the case requires referral. ✓ Exhibit proficiency in deciding which incisions and flaps to choose for different scenarios in peri-radicular surgery.	Clinical demonstration / SGD	OSCE
		Attitude ✓ Maintain a patient-focused approach to explain procedure, manage patient expectations and address concerns in all phases of peri-radicular surgery.	Clinical demonstration / SGD	OSCE
4.	Diseases of Maxillary Sinus	**Knowledge** ✓ Recall anatomy and functions of the maxillary sinus, including its relationship to adjacent dental structures and the implications for surgical procedures. ✓ Distinguish signs and symptoms originating in the maxillary antrum from those of oral origin. ✓ Enlist various clinical and radiological modalities to arrive at an appropriate diagnosis and suggest various treatment options for diseases originating in the maxillary antrum.	Interactive lecture / SGD	MCQ, SAQ, Viva
		Skill ✓ Recognize situations in which dental extraction / minor oral surgery may be complicated by the creation of an oro-antral communication or the displacement of a foreign body, tooth or root into the antrum. ✓ Minimize the risk of above mentioned occurrence during posterior maxillary extraction. ✓ Manage referral of patient to a specialist for above mentioned complication when required. ✓ Recognize the characteristic features of malignant disease of maxillary antrum. ✓ Distinguish conditions of the maxillary antrum which are suitable for treatment in general dental practice and those requiring specialist referral.	Clinical demonstration / SGD	OSCE

		Attitude ✓ Develop effective communication skills to counsel patient regarding diagnosis, treatment options and peri-operative care of patients requiring management of maxillary antrum pathology.	Clinical demonstration / SGD	OSCE
Course 5: Orofacial Infections				
1.	Management of Odontogenic Infections	**Knowledge** ✓ Recall pathopyhsyiology of odontogenic infections and the microbiology of commonly involved flora. ✓ Distinguish pathopysiology and clinical pattern of serious infections such as cavernous sinus thrombosis/orbital cellulitis, necrotizing fascitis, osteomyelitis, actinomycosis, candidiasis. ✓ Show awareness of potential complications and strategies for their management, such as the risk of systemic spread and the management of severe infections (e.g., Ludwig's angina)	Interactive lecture / SGD	MCQ, SAQ, Viva
		Skill ✓ Recognize clinical features of odontogenic infection. ✓ Determine severity of odontogenic infection. ✓ Select cases requiring outpatient treatment, minor surgical intervention, empiric antibiotic therapy, prophylactic antibiotic therapy and those requiring inpatient treatment.	Clinical demonstration / SGD	OSCE
		Attitude ✓ Demonstrate empathy toward patients experiencing pain and discomfort and obtain informed consent, discussing risks and benefits of various treatment options.	Clinical demonstration / SGD	OSCE
Course 6: Oral and Maxillofacial Pathology				
1.	Jaw Cysts and Benign Tumors	**Knowledge** ✓ Recall pathophysiology of various common odontogenic cysts and tumors. ✓ Differentiate clinical, radiological and histopathological features of jaw	Interactive lecture / SGD	MCQ, SAQ, Viva

		cysts and benign tumors. ✓ Develop a differential diagnosis based on the clinical features, anatomical site, radiographic and histopathological findings. ✓ Differentiate the principles of surgical management relating to both enucleation and marsupialization. ✓ Propose treatment options according to probable diagnosis, anatomical relationships and size of lesion. ✓ Enlist indications of different types of biopsies in Oral surgery.		
		Skill ✓ Exhibit proficiency in performing clinical examination and identifying features of odontogenic cysts/tumors. ✓ Interpret various imaging studies in order to formulate a diagnosis and devise a treatment plan. ✓ Show proficiency in peri-operative care and pain management of patients with odontgenic cysts and benign tumors.	Clinical demonstration / SGD	OSCE
		Attitude ✓ Cultivate a professional, empathetic and patient-centered approach while managing patients with jaw cysts and tumors and counseling them regarding diagnoses, potential complications, treatment options and prognosis.	Clinical demonstration / SGD	OSCE
2.	Oral Oncology	**Knowledge** ✓ State the incidence and etiology of oral cancer in different parts of the world. ✓ Differentiate mucosal lesions and conditions that have a potential for malignant change. ✓ Recognize the role of the general dental practitioner in the prevention and screening of oral cancer. ✓ Recognize oral cancers presenting at different stages in various sites in the mouth. ✓ Apply the principles of staging of oral cancer and how this relates to the treatment and prognosis. ✓ State the advantages and	Interactive lecture / SGD	MCQ, SAQ, Viva

		disadvantages of different treatment methods. ✓ Perform oral and neck examination for mucosal pathology and local spread. ✓ Describe the requirements of a satisfactory biopsy and how it should be performed. ✓ Show awareness of various treatment modalities for oral cancer including surgical therapy, adjunctive therapy and reconstructive surgery. **Integrated with Oral Pathology:** ✓ Recall pathophysiology of benign and malignant lesions of oral cavity.		
		Skill. ✓ Determine the urgency of referral of a patient with a suspicious lesion in the mouth. ✓ Exhibit proficiency in conducting thorough head and neck examinations and identifying signs of oral cancer and precancerous lesions. ✓ Interpret various imaging studies to assess the extent of disease and plan treatment.	Clinical demonstration / SGD	OSCE
		Attitude ✓ Develop skills to explain complex diagnoses, treatment options, and prognosis clearly and empathetically to patients and their families.	Clinical demonstration / SGD	OSCE
3.	Salivary Gland Pathology	**Knowledge** ✓ Distinguish the clinical features of infections of the salivary glands from those in other structures. ✓ Differentiate on clinical grounds between infection, obstruction, benign and malignant neoplasms of the salivary glands. ✓ Enlist the Diagnostic modalities used for Diagnosis of Salivary Gland disorders. ✓ State the important/relevant information to be elicited from patients with salivary gland disorders. ✓ Compare the principles of management of Obstructive salivary gland disease, Salivary Gland Infections and Salivary Gland	Interactive lecture / SGD	MCQ, SAQ, Viva

		Neoplasms. ✓ Enlist the indications of salivary gland excision & different types of Parotidectomy, **Integrated with Oral Pathology:** ✓ Enlist the classification of disorders of salivary glands.		
		Skill ✓ Perform examination of the Parotid and Submandibular glands. ✓ Enlist various laboratory and radiological investigations required to evaluate salivary gland problems. ✓ State various methodologies for management of salivary gland disease. ✓ Develop comprehensive treatment plans, including surgical and non-surgical options. ✓ Provide postoperative care, including pain management, wound care, and monitoring for complications.	Clinical demonstration / SGD	OSCE
		Attitude ✓ Display a professional, patient-centered, and ethical approach towards managing salivary gland pathology.	Clinical demonstration / SGD	OSCE
4.	Management of Patient Undergoing Radiotherapy / Chemotherapy	**Knowledge** ✓ Display awareness of oral mucosal effects, systemic effects and long term complications of patients undergoing radio and chemo therapy.	Interactive lecture / SGD	MCQ, SAQ, Viva
		Skill ✓ Compare indications, contraindications of management options and complications in patients undergoing chemo/radiotherapy.	Clinical demonstration / SGD	OSCE
		Attitude ✓ Show an empathetic attitude towards patients.	Clinical demonstration / SGD	OSCE
Course 7: Maxillofacial Trauma				
1.	Soft Tissue Injury	**Knowledge** ✓ Identify the type of injury using history and diagnostic evaluation. ✓ State management options of soft tissue injury	Interactive lecture / SGD	MCQ, SAQ, Viva
		Skill ✓ Evaluate a patient with soft tissue injury and provide appropriate	Clinical demonstration / SGD	OSCE

		management.		
		Attitude ✓ Display an empathetic approach when dealing with a trauma patient.	Clinical demonstration / SGD	OSCE
2.	Dentoalveolar Injury	**Knowledge** ✓ Determine severity of injury and if any immediate treatment required. **<u>Integrated with Operative Dentistry:</u>** ✓ State management options for teeth that have undergone dentoalveolar trauma.	Interactive lecture / SGD	MCQ, SAQ, Viva
		Skill ✓ Prepare patient for management of dentoalveolar injuries. ✓ Manage patient with dentoalveolar injuries. ✓ Establish follow up treatment protocol, state prognosis and complications.	Clinical demonstration / SGD	OSCE
		Attitude ✓ Exhibit an empathetic approach when dealing with a trauma patient.	Clinical demonstration / SGD	OSCE
3.	Principals of Maxillofacial Trauma Management	✓ Recall knowledge of facial bones and associated structures and be able to correlate their functional implications due to traumatic injuries. ✓ Enlist principles of resuscitation. ✓ Enlist principles of management of oral and maxillofacial trauma according to type and site of injury and compare indications of ORIF vs closed management. ✓ Differentiate various severities of trauma : bone fractures, soft tissue injury and dentoalveolar injury and state their relevant management options.	Interactive lecture / SGD	MCQ, SAQ, Viva
		Skill ✓ Demonstrate patient assessment techniques including recognition of possible life-threatening injuries (closed head trauma, compromised airway, hemorrhage, and cervical spine injury). ✓ Display interpretation of clinical and imaging assessment techniques for patients with oral and maxillofacial trauma. ✓ Evaluate the extent of the oral and	Clinical demonstration / SGD	OSCE

		maxillofacial trauma and manage relevant referrals accordingly. ✓ Provide follow-up care as indicated. ✓ Evaluate the results of treatment and determine if additional therapy and/or specialty referral is indicated.		
		Attitude ✓ Demonstrate empathy towards patients dealing with traumatic injuries and the associated physical and emotional challenges. ✓ Provide clear explanations to patients and their families about the nature of the injuries, treatment options, and expected outcomes.	Clinical demonstration / SGD	OSCE
Course 8: Dentofacial Deformity				
1.	Cleft Deformity	**Knowledge** ✓ Recognize variations from normal head and neck anatomy. ✓ Understand classification systems for clefts. ✓ Enlist the recommended timing for primary surgical interventions (e.g., lip repair, palate repair) and secondary surgeries (e.g., bone grafting, speech surgery). ✓ Justify the roles of different specialists, including surgeons, orthodontists, speech therapists, and psychologists, in the management of cleft patients. ✓ Show awareness of potential complications such as fistula formation, speech issues, and dental problems. **<u>Integrated with Orthodontics:</u>** ✓ Explain the orthodontic considerations and treatment options for patients with cleft lip and palate, including timing and technique.	Interactive lecture / SGD	MCQ, SAQ, Viva
		Skill ✓ Assess the patient's deformity and make appropriate consultations and specialty referral when indicated. ✓ Perform clinical examination and Identify investigations required to evaluate such patients. ✓ Coordinate long-term follow-up care with dental and medical specialists.	Clinical demonstration / SGD	OSCE

		Attitude ✓ Foster a compassionate, patient-centered, and collaborative approach in managing cleft lip and palate patients.	Clinical demonstration / SGD	OSCE
2.	Craniofacial Deformity and Orthognathic Surgery	**Knowledge** ✓ Recall functional anatomy; how skeletal relations impact speech, occlusion and aesthetics. ✓ Enlist indications and describe techniques of various orthognathic procedures. ✓ Enlist factors that contribute to post-surgical stability (hieracrachy of stability) **<u>Integrated with Orthodontics:</u>** ✓ Compare treatment options for borderline cases, evaluating the choice between camouflage and orthognathic surgery. ✓ Discuss how the severity of malocclusion determines the need for orthognathic surgery. ✓ Discuss how the extraction of teeth influences the decision between camouflage treatment and orthognathic surgery. ✓ Outline the objectives and techniques of orthodontic treatment before orthognathic surgery (pre-surgical orthdontic).	Interactive lecture / SGD	MCQ, SAQ, Viva
		Skill ✓ Assess the patient's deformity and make appropriate consultations and specialty referral when indicated. ✓ Perform clinical examination and Identify investigations required to evaluate such patients. ✓ Coordinate long-term follow-up care with dental and medical specialists.	Clinical demonstration / SGD	OSCE
		Attitude ✓ Demonstrate empathy towards patients undergoing significant changes to their appearance and function.	Clinical demonstration / SGD	OSCE

Course 9: Temporomandibular Joint Disorders and Orofacial Pain				
1.	Temporomandibular Joint Disorders	**Knowledge** ✓ Distinguish disorders of the masticatory muscles from those centered within TMJ and from disorders of dental origin. ✓ Enlist possible conservative treatments and select a scheme of management for a patient with a temporomandibular (TMJ) disorder. ✓ Enlist procedures used for internal derangement of TMJ. ✓ Describe a method for successful reduction of a dislocation of the temporomandibular joint. ✓ Enlist different treatment options for the management of recurrent TMJ Dislocation. ✓ Identify TMJ Ankylosis and enlist treatments indicated.	Interactive lecture / SGD	MCQ, SAQ, Viva
		Skill ✓ Evaluate the patient with temporomandibular disorders. ✓ Develop a differential diagnosis. ✓ Perform clinical examination of temporomandibular joint and muscles of mastication. ✓ Determine if specialty referral is indicated and make a referral if necessary. ✓ Manage the patient's temporomandibular pain dysfunction syndrome if the problem is within the general dental practitioner's level of expertise. ✓ Evaluate the results of treatment. ✓ Determine if additional therapy and/or specialty referral is indicated. ✓ Distinguish those cases which may require surgical treatment. ✓ Identify TMJ Ankylosis. ✓ Enlist treatment options and their indications in management of TMJ ankylosis.	Clinical demonstration / SGD	OSCE
		Attitude ✓ Demonstrate empathy and compassion towards patients experiencing TMJ disorders, which can significantly impact their quality of life.	Clinical demonstration / SGD	OSCE

2.	Orofacial Pain	**Knowledge** ✓ Describe the pathophysiology of different oro-facial pain. ✓ Classify Neuropathic pain. ✓ Differentiate between episodic and continuous neuropathic pain. ✓ Enlist investigations required to diagnose or exclude secondary neuropathic pain. ✓ Enlist the medicines and discuss their Pharmacotherapeutics. ✓ Discuss the monitoring process of patients with neuropathic pain being treated with medicines. ✓ Enlist surgical procedures used in management of neuropathic pain.	Interactive lecture / SGD	MCQ, SAQ, Viva
		Skill ✓ Perform a comprehensive clinical evaluation, including patient history, pain assessment, and physical examination. ✓ Interpret relevant lab tests to rule out systemic conditions or infections.	Clinical demonstration / SGD	OSCE
		Attitude ✓ Recognize the impact of chronic orofacial pain on patients' quality of life, including their emotional and psychological well-being and counsel them accordingly.	Clinical demonstration / SGD	OSCE

DEPARTMENTAL INVOLVEMENT IN INTEGRATED TEACHING
CORE SUBJECT: Oral and Maxillofacial Surgery

	1ST YEAR	2ND YEAR	3RD YEAR	4th YEAR	EXTRA COURSES
Subject		**General Pathology**	**Oral Pathology**	**Operative Dentistry**	
Topic		**Wound Healing**	**Jaw cysts & Tumors**	**Local Anesthesia**	
SLOs		Compare healing by primary and secondary intention. Discuss complications of wound healing.	Compare treatment options for management of common jaw cysts and tumors.	Demonstrate commonly used local anesthesia injection techniques used in dentistry.	
Topic		**Cross-infection control**	**Salivary Gland Tumors**	**Peri-radicular Surgery**	
SLOs		Show familiarity with cross-infection control guidelines, use of personal protective equipment, hand hygiene and environmental cleaning.	Discuss management options of salivary gland tumors.	Exhibit familiarity with various incisions and flap designs for peri-radicular surgery, along with their indications, advantages and disadvantages.	
Topic			**Epithelial Disorders: SCC**		
SLOs			Discuss management strategies of oral squamous cell carcinoma.		

Subject				**Orthodontics**	
Topic				**Cleft Lip & Palate**	
SLOs				Recognize variations from normal head and neck anatomy. Understanding classification systems for clefts. Enlist the recommended timing for primary surgical interventions (e.g., lip repair, palate repair) and secondary surgeries (e.g., bone grafting, speech surgery).	
Topic				**Orthognathic Surgery**	
SLOs				Enlist indications and describe techniques of various orthognathic procedures. Enlist factors that contribute to post-surgical stability (hierarchy of stability	

Subject				**Prosthodontics**	
Topic				**Pre-prosthetic Surgery**	
SLOs				Show familiarity with various pre-prosthetic surgical procedures for optimizing the success of prostheses Describe methods used for enlargement of denture bearing areas.	

LEARNING RESOURCES

Textbooks:

Contemporary Oral & Maxillofacial Surgery by James R. Hupp, Edward Ellis III, Myron R. Tucker. 7th Edition. 2019.
Handbook of Local Anesthesia by Stanley F. Malamed. 7th Edition. 2020.
Killey's Fractures of the Mandible by Peter Banks and H. C. Killey. 4th Edition. 1991.
Killey's Fractures of the Middle Third of Facial Skeleton by H. C. Killey and Peter Banks. 4th Edition. 1987.

Reference Books:

Peterson's Principles of Oral and Maxillofacial Surgery by Michael Miloro, G. E. Ghali, Peter E. Larsen, Peter Waite. 4th Edition, 2022.
Maxillofacial Surgery by Peter A. Brenan, Henning Schliephake, G. E. Ghali, Luke Cascarini. 3rd Edition, 2017.
Operative Oral and Maxillofacial Surgery by John Langdon, Mohan Patel, Robert Ord, Peter Brennan. 2nd Edition, 2009.

ANNEXURES

ANNEXURE A:

Assessment Policy and Plan

Aim: To provide a comprehensive and fair assessment system that accurately reflects student learning, development, and preparedness for professional practice in dentistry.

Objectives:

- Ensure assessments are aligned with learning objectives and curricular outcomes.
- Utilize a variety of assessment methods to evaluate different competencies.
- Maintain high standards of fairness, consistency, and transparency in assessments.

1. Responsibility

All faculty and staff involved in administering and supervising examinations and assessments are responsible for:

- Ensuring adherence to assessment procedures.
- Conducting examinations and assessments under conditions that are consistent and fair to all students.

2. Principles

o Assessments in the BDS program at RCoD will be aligned with student learning objectives and course activities, including both formative and summative assessments.
o These assessments will follow the examination regulations of the University of Health Sciences (UHS).
o The university shall appoint an external examiner for the concerned exam.
o The institute will manage in-house assessments, while professional examinations will be conducted by UHS.
o Marks allocation to internal and external examiner shall be as per the university instructions of the concerned subject. o Standardized procedures will be applied across all courses.

3. Scope

This policy applies to all undergraduate students registered in the BDS program at RCoD

4. Assessment policy

- Each student must appear in the yearly professional exam of all subjects specific for that particular, to qualify for the successive year.
- There is continuous assessment throughout each year through (end of term)block exam, send-ups and professional Exam.
- Assessment procedures are as follows;

Types of Assessment Procedures (Table 1)

1. **Formative Assessments:**

- Formative assessments, conducted regularly throughout the term, provides feedback to students with the aim of enhancing their learning and improving their performance in summative evaluations.
- It is carried out informally and as required during and after lectures (e.g., 1- minute feedback, problem-based questions, quizzes), tutorials (e.g., question and answer sessions), case-based discussions, written assignments, and class presentations.
- Log books contain rubrics for continuous self-assessment of the practical /clinical sessions, as well as formative assessments.
- Portfolio development is also promoted and assessed as part of the formative evaluation process.
- Reflection is a mandatory part of all laboratories, pre-clinical and clinical exposures
- Regular feedback sessions are held after each term examination(block exam) to aid in improving student performance.

2. **Summative Assessments:**

- Conducted as end term exam (Block Exam) carrying 4% weightage to be included in a total of 10% within internal assessment. Each exam shall consist of theory and practical examination.

The division of weightage shall be as follows.

  - Written exam consists of MCQs & SEQs, carrying 50% weightage.
  - Practical exam consists of OSPE/OSCE and structured viva, carrying 50% weightage.
- Marks of each exam (End term) are included in internal assessment.
- Research carries 1% weightage in internal assessment.
- Send up carries 1% weightage in internal assessment.
- Attendance carries 2% weightage in internal assessment, with equal contribution of (1%) each, of lecture & practical/clinical sessions.

- Minimum required attendance = 85% = 2% weightage int assessment. • Generic competencies carry 2% weightage in internal assessment. (Table 2)
- The passing percentage for each exam is 50%.
- Candidates failing to gain passing scores in annual and supplementary exam, shall be detained in the existing year.

3. Islamic Studies/Civics and Pakistan Studies

- Islamic Studies/Civics and Pakistan Studies will be assessed in first professional examination.
- The paper will carry 100 marks in total. Islamic Studies contains 60 marks and Pakistan Studies carries 40 marks.
- In Islamic studies part, there will be three LEQ to be attempted out of five LEQs, carrying 20 marks each.
- In Pakistan studies part, there will be two LEQ to be attempted out of four LEQs, carrying 20 marks each.

Note: Islamic studies is for Muslims and civics is for non-Muslims.

	Block - 1	Block - II	Block - III	Send up examination
Subject 1				
Subject 2				
Subject 3				
Subject 4				

4. Research Assessment Plan: (Table 1)

- A research coordinator of each year shall submit a report in each block about the progress of each student of the given research project.
- Completion of each step in respective year shall score for each respective year.
- Research coordinator of each year shall submit the report to Director, Research & Development cell & Department of dental education.
- Department of dental education shall communicate the report to each internal examiner for inclusion in respective internal assessment of each year.

(Table 1: Research Assessment Plan)

Sr. No.	Status	Code	Year of completion	Score
1	Group formation, Topic Selection, Synopsis writing	Code 1	1ST Year	(0.33, 0.33, 0.33) = 1
2	Proposal submission & approval by ERC & TRC with certificates.	Code 2	2nd year	(0.33, 0.33, 0.33) = 1
3	Data Collection & Analysis	Code 3	3rd year	(0.50, 0.50) = 1
4	Manuscript writing, Reviewing and Editing	Code 4	Fourth year	(0.50, 0.50) = 1
5	Article submission & Publication	Code 5	House job	(0.50, 0.50) = 1

5. Assessment of Generic Competencies. (Table 2)

Total weightage in internal assessment = 2%

(Table 2: Assessment of Generic Competencies*)

Competencies	Weightage in competencies assessment (2%)	Components	Score
Professionalism	3	Communication skill	0.50
		Time management	0.50
		Ethics & integrity	0.50
		Teamwork	0.50
		Problem solving skills	0.50
		Empathy in patient care	0.50
Critical thinker	2	Analysis	1
		Inference	1
Creativity	1	Innovation	1
Leadership	1	Vision & Strategy	0.5
		Decision making	0.5
Emotional intelligence	1	Self-regulation	1
Life-long learner	2	Curiosity	1
		Self-directed learning	1

- Marks obtained to be divided with 10 to get score (Y) out of 100
- In case the total marks of exam are different from 100 use the following formula • (Y/100)x Total marks

(**Table 3: Key for assessment of generic competencies**)

Criteria	Unsatisfactory	Needs Improvement	Satisfactory	Exemplary
Communication Skills	Incoherent, unclear, or inappropriate communication	Communication is often unclear or lacks clarity	Communicates effectively and professionally	Communicates with exceptional clarity, persuasiveness, and adaptability
Time Management	Frequently misses deadlines, fails to prioritize tasks	Occasionally misses deadlines, struggles with prioritization	Meets deadlines consistently, manages time effectively	Excels at time management, consistently exceeds expectations
Ethics and Integrity	Demonstrates unethical behavior, lacks integrity	Occasionally exhibits questionable behavior, may compromise integrity	Adheres to ethical standards, maintains integrity	Exemplifies ethical behavior and integrity in all interactions
Teamwork	Reluctant to collaborate, works independently	Contributes to the team but may have difficulty working with others	Works effectively as part of a team, contributes positively	Leads and inspires the team, fosters a collaborative environment
Problem-Solving	Avoids challenges, unable to find solutions	Struggles to solve problems independently, needs guidance	Solves problems effectively with occasional guidance	Consistently identifies and solves complex problems creatively and efficiently
Patient Care	Neglects patient needs, provides substandard care	Provides adequate patient care but may lack empathy or compassion	Delivers high-quality patient care, demonstrates empathy	Excels at patient care, consistently goes above and beyond
Critical thinker: Analysis	Unable to identify key components or relationships	Identifies some components but struggles to analyze relationships	Analyzes information effectively, identifies key components and relationships	Excels at analysis, breaks down complex information into its constituent parts and evaluates their significance

Critical thinker: Inference	Makes unfounded or illogical conclusions	Draws some inferences but may lack supporting evidence	Draws logical inferences based on evidence	Excels at inference, draws insightful and well-supported conclusions
Creativity/Innovation	Lacks innovative ideas, relies on	Shows some innovation but may	Demonstrates innovation, presents	Excels at innovation, generates
	conventional approaches	struggle to generate truly novel ideas	new and original approaches	groundbreaking and transformative ideas
Leadership: Vision and Strategy	Lacks clear vision and strategic direction	Has a basic vision but may struggle to articulate it	Develops a clear vision and strategic plan	Excels at vision and strategy, inspires and motivates others with a compelling vision
Leadership; Decision-Making	Makes poor decisions, lacks judgment	Makes reasonable decisions but may need guidance	Makes sound decisions, demonstrates good judgment	Excels at decisionmaking, consistently makes effective and strategic choices
Emotional intelligence; Self-Regulation	Unable to manage emotions effectively, reacts impulsively	Manages emotions but may struggle with stress or conflict	Effectively manages emotions, controls impulses	Excels at selfregulation, consistently demonstrates emotional maturity and resilience
Life-long learner: Curiosity	Lacks curiosity, shows little interest in learning	Shows some curiosity but may not be motivated to explore new things	Demonstrates curiosity, is eager to learn and explore new ideas	Excels at curiosity, is highly curious and motivated to seek out new knowledge and experiences
Life-long learners: Self-Directed Learning	Relies heavily on external guidance, struggles to learn independently	Takes some initiative in learning but may need guidance	Effectively learns independently, sets goals and takes responsibility for own	Excels at self-directed learning, is highly motivated and selfdisciplined, able to learn

			learning	effectively on their own

6. Complete Assessment Criteria (Table 4)

Types of Assessment		Weightage	Frequency and Time	Methods/ Tools for Assessment
Formative		-	Informally during and after the session.	Class tests (MCQs, SEQs), Class presentations, Assignments, Tutorials, Case Based Discussions, Problem Based Learning, Portfolios
Summative	Internal Assessment	10 %	Block exam (4%) Research (1%) Send up score. (1%) Attendance (2%) Lecture Clinical/ Lab Generic competencies (2%)	MCQs (one best answer), SEQs, OSPE (non-clinical years), OSCE (clinical years), Simulated patients and Phantom head lab procedures, Viva Voce, Logbook and clinical quotas. Assessment of generic competencies through rubrics

	University Exam	90 %	Once at the end of academic year	MCQs (one best answer), SEQs, OSPE (non-clinical years), OSCE (clinical years), Logbooks and Clinical cases quotas, Viva Voce

7. Assessment Format:

Each end of term (block exam) written and practical/clinical exam assessment format will be as follows:

Written assessment:

End of term (Block) assessment format:

MCQs	20 MCQs(20mins)	20 marks
SEQs	10 SEQs of 3 marks each	30 marks
Total marks	50	

Send-up and Prof Assessment format:

Major Theory Exam: 3 hours

MCQs	45 MCQs (45 mins)	45 marks
SEQs	15 SEQs of 3 marks each (2 hour 15min)	45 marks
Total marks	90 marks	

Minor Theory Exam: 2 hour 30 min

MCQs	21 MCQs (30 mins)	21 marks
SEQs	8 SEQs of 3 marks each (2 hour)	24 marks
Total marks	45 marks	

a. MCQs format

o MCQs in all exams will be single best type. o There will be five options in each MCQ. o There will be no negative marking.
o MCQs will be of C2 and C3 level.

b. SEQ format o SEQs will be based on major content areas of the respective subject. o Each SEQ carries 3 marks.

c. Oral/Practical/Clinical Exam format in Send up.

Major Subjects
Oral and practical Examination shall have 90 marks
Minor Subjects
Oral and Practical Examination shall have 45 marks

Practical/Clinical assessment will be done with OSPE/OSCE stations with the weightage as mentioned above.

d. Marks Distribution:
• **Major Subjects**
- Total marks of each major subject = 200
- Written assessment marks = 90
- Oral/Practical marks = 90
- Internal Assessment marks = 20

• **Minor Subjects**
- Total Marks of each minor subject=100
- Written assessment marks= 45
- Oral/Practical marks= 45
- Internal Assessment marks=10

5. Assessment Planning

A: Planning Process

- **Coordinator Responsibility:** Session coordinators will develop consensus among subject heads for block tests and (send-up) at the session's start, with final approval by the Principal of RCoD, to be included in the Academic calendar.
- **No Overlap:** Ensure that no overlap of class tests occurs between different subjects.
- **Learning Objectives:** Each course will outline learning objectives and give details on how students' achievement of objectives will be assessed.
- **Syllabus Assessment Plan:** Each department will develop a plan according to the Table of Specification, including methods, timing, and contributions to the final mark of all assessments.
- **Table of Specification:** Each department will follow the ToS created by the university UHS.
- **Discussion with Specialists:** Discuss assessment planning documents with Subject Specialists to ensure appropriate curricular representation.

6. Examination Development and Administration

a. Development Process

- **Question Pool:** Course directors, with teaching faculty, will develop a departmental assessment question pool.
- **Revisions:** Course directors will revise question items before submitting in a password protected flash drive to department of dental education. The questions will be checked and transferred to a computer with no internet connectivity.
- **Finalization:** Department of dental education shall approve the formatting of reviewed questions, two weeks prior to the assessment date.
- **Question paper printing & Answer sheets:** Course directors will collect the printed papers with answer sheets in sealed envelopes from department of dental education on the day of examination.
- **Conduct of exam:** The seals of papers shall be opened in the examination halls in the presence of candidates and two invigilators. The whole activity shall be monitored.
- **Post-Item Analysis:** Post-item analysis of MCQs will be done using OMR, based on the analysis, the MCQs will be modified or eliminated from future exams. Also, rescoring if a significant number of items are problematic.
- **Results Notification**: Results will be notified to the students within two weeks of the examination.

- **Post-Examination Feedback**: Test discussions and feedback after each assessment will be provided.

7. Eligibility Criteria.

A: Attendance

- Minimum 85% attendance of all educational activities i.e. lectures, SGDs/tutorials, practical/clinicals, official symposia, co-curricular/extra-curricular activities including sports day and community visits.
- Leave is considered an absence unless supported by valid documentation.

B: Supplementary Students

- Supplementary students must attend classes of the new academic session for better subject orientation.
- Lecture attendance will be 80%, counted immediately after the supplementary theory exam.

C: Detained Students

- Must pass all end of term (block exams) and send-up tests and attend planned lectures.
- Detained hostel students' lecture policies may vary with the Principal's permission.

8. Assessment

- Pass mark is 50% of total test scores for each subject.
- Send-ups must be passed.
- Academic evaluations will ensure consistent assessment and feedback processes.

9. Individual Assessment Criteria

- Faculty will review individual assessments regularly to determine student progression.
- The academic coordinator will offer remediation for underperforming students.
- Remediation should occur in the summer break after summative assessments.
- Parent-teacher meetings will be held for underperforming students at designated times.

10. Feedback

Faculty will provide feedback after each block and at conclusion of an academic year.

- Formative feedback during each preclinical course/module.
- Mandatory feedback for major exams (like end of term) block exams.
- Clinical test feedback at the end of each rotation.

Students should review assessments by contacting the course director.

11. Appeal Mechanism for Results

- Students can apply for rechecking of results (block exam) within two working days of result declaration
- The application will be submitted to the Department of Dental Education and will be approved by the principal RCoD.
- Applications received after that will not be entertained.
- The answer sheet will only be shown to the student.
- Response after the appeal of the result rechecking will be declared within one week.
- The rechecking of professional exam will be according to UHS policy.

12. Quality Control

- Collaborating closely with the Student Affairs and Quality Assurance Committee can facilitate the resolution of any issues, contributing to successful outcomes.
- Data from assessments will be leveraged to improve the effectiveness of academic staff, the performance of students, the quality of courses, and the institution's overall operations.

- The Department of Dental Education will carry out frequent evaluations of academic activities and ensure the implementation of this policy by keeping comprehensive records of assessment data.

Annexure- B

Prosthodontics Final Year Lecture Schedule 2028

Total academic year duration: 36 weeks

	Block I				Block II			Block III			
Lecture topic	**Feb**	**March**	**April**	**May**	**June**	**July**	**Aug**	**Sept**	**Oct**	**Nov**	**Total**
Introduction to the subject and classifications	1										1
Patient evaluation for complete, removable and fixed prosthodontics	1										1
Maxillary and mandibular substitutes for denture bearing area	1										1
EID-UL-FITAR 1-3RD MARCH											
Systemic Health Aspects and Nutritional Considerations		1									1
Sequelae of wearing complete dentures		1									1
Pre-prosthetic patient management		1									1
Biomechanics of edentulism		1									1
Clinical application of dental materials for edentulous patients		1									1
Impression Making		1									1
23RD MARCH											
Jaw relation record (orientation, horizontal and vertical record)		2									2
CLASS ASSESSMENT 1											
Articulators			1								1
Occlusion			2								2
Selection and arrangement of artificial teeth			2								2
The Try-in Appointment			1								1
Polished Surfaces			1								1
Prosthesis Insertion			1								1
CLASS ASSESSMENT 2											
1ST MAY LABOUR DAY											

Overdentures				1			1
Immediate dentures				1			1
EID UL AZHA 7TH- 9TH MAY							
Single Dentures				1			1
Maintenance of complete denture (relining and repair)				1			1
Copy denture				1			1
Speech considerations				1			1
Management of Special Conditions				1			1
BLOCK I EXAM 24TH MAY-5TH JUNE							
Biomechanics of Removable Partial Denture				1			1
Connectors				2			2
SUMMER VACATIONS 15TH JUNE- 14TH JULY							
Rest and rest seats				1			1
Direct retainers and precision attachment				2			2
Indirect retainers				1			1
Denture Base Considerations and Relining				1			1
CLASS ASSESSMENT							
Principles of Removable Partial Denture Design					1		1
Surveying					1		1
Mouth Preparations for RPD					1		1
Impressions for RPD (Dental Materials)					1		
Miscellaneous (spoon denture, every denture)					1		1
Classification of Maxillary defects					1		1
Obturators and its types					1		1
Classification of Mandibular defects					1		1
Mandibular prosthesis					1		1

CLEFT LIP AND PALATE MODULE COVERED IN ORTHODONTICS						
BLOCK II EXAM						
FIXED PROSTHODONTICS MODULE						
Management of endodontically treated teeth			1			1
Ferrule Effect and significance			1			1
Crown Lengthening			1			1
Principles of Tooth preparation			2			2
Complete cast crown			1			1
Porcelain fused to metal crown			1			1
All ceramic crown				1		1
Pontic designs				1		1
Tissue Management & Impression Method				1		1
Temporization phase in FPDs fabrication				1		1
Luting Agents and Cementation Procedures				1		1
Minimal Preparation FPDs				1		1
Occlusion in FPD				1		1
Shade selection and lab communication				1		1
Partial coverage crowns	**To be covered by operative dentistry**					
Veneers						
Inlays, onlays						
Restoration of endodontically treated teeth post component						
CLASS ASSESSMENT 7						
IMPLANT DENTISTRY MODULE						
Introduction to dental implants and osseointegration					1	1
Implant prosthesis					1	1
Impression making in Implant dentistry					1	1

Single tooth restoration										1	1
Parts of implants	**To be covered by OMFS**										
Success and Failure of implants											
Biomaterials and biomechanics											
Bone augmentation											
Total	3	8	9	7	3	6	9	7	8	4	64

OMFS

Total academic year duration: 36 weeks

Sub themes/ Lecture topics		**Block I**			**Block II**			**Block III**			
	Feb	**March**	**April**	**May**	**June**	**July**	**Aug**	**Sep**	**Oct**	**Nov**	**Total lect. /yr**
Introduction to OMFS	1										
Pre-operative health status evaluation	2										
Eid-Ul-Fitr 01.03.2028 - 03.03.2028											
Prevention and management of medical emergencies		2									
Principles of flap design		1									
Wound repair		1									
Spring Vacation 20.03.2028 - 24.03.2028 **Pakistan Day 23.03.2028**											
Cross-infection Control			1								
Local Anaesthesia			3								
Management of patient fear and anxiety + pharmacological management of acute oral and maxillofacial pain			1								
Principles of exodontia			2								
Principles of complicated exodontia			1								
Labour Day Holiday 01.05.2028											

Sub themes/ Lecture topics		Block I			Block II			Block III			
	Feb	March	April	May	June	July	Aug	Sep	Oct	Nov	Total lect. /yr
Principles of management of impacted teeth				2							
Eid-ul-Azha Holidays 07.05.2028 - 09.05.2028											
Pre-prosthetic surgery				3							
Block-1 Exam Theory: 22.05.2028 - 29.05.2028 **Block-1 Exam Viva/OSPE: 30.05.2028 - 02.06.2028**											
Ashura Holidays: 05.06.2028 - 06.06.2028											
Research Day **08.06.2028**											
Management of patient on chemo/radio					1						
Summer Vacations **15.06.2028 - 14.07.2028**											
Odontogenic infections						4					
OMF Pathology Biopsy							1				
OMF Pathology: Cysts							2				
Oncology							2				
Independence Day Holiday 14.08.2028											
Obstructive & Retentive Salivary Gland Disease							1				
Infectious Salivary Gland Disease							1				
Neoplastic Salivary Gland Disease							2				
Maxillary Sinus Pathology & Peri Radicular Surgery							1	1			
Block-2 Exam Theory: 04.09.2028 - 11.09.2028 **Block-2 Exam Viva/OSPE: 12.09.2028 - 15.09.2028**											
Dentoalveolar trauma								2			
Advanced trauma life support								1			
Mandibular fractures								1	1		

Sub themes/ Lecture topics		Block I			Block II			Block III			
	Feb	March	April	May	June	Jul y	Aug	Sep	Oct	Nov	Tota l lect. /yr
Midface trauma									3		
Geriatric, pediatric trauma & firearm injuries									1		
TMJ disorders									2		
Orofacial Pain									2		
Oro facial clefts										2	
Orthognathic Surgery										2	
Implantology										2	
Total lectures/ block	3	4	8	5	1	4	10	5	9	6	55

Operative Dentistry Final Year Lecture Schedule 2028

Total academic year duration: 36 weeks

Lecture topics	Block I				Block II			Block III			
Month	Feb	March	April	May	June	July	August	Sep	Oct	Nov	Total
Introduction to Operative Dentistry Course	1										1
Patient Assessment	1										1
Diagnosis and treatment Planning	1										1
Sterilization & Infection Control	1										1
EID-UL-FITAR 1-3RD MARCH											
Cariology		2									2
Radiology		2									2
SPRING VACATION 20TH -24TH MARCH											
Fundamentals of Tooth Preparation		2									2
Dental Amalgam			2								2
Fundamentals of Adhesion			2								2
Class I amalgam			1								1
Class I Composite			1								1
CLASS ASSESSMENT 1											
Class II amalgam			1								1

Class II Composite			1								1
1ST MAY LABOUR DAY											
Class III & IV Composite				1							1
EID UL AZHA 7TH- 9TH MAY											
Class V Composite				1							1
Complex Amalgam Restorations				1							1
Occlusion				1							1
Non-Carious Cervical Lesions				1							1
CLASS ASSESSMENT 2											
CAD CAM restorations				1							1
BLOCK I EXAM 24TH MAY-5TH JUNE											
Pulpal & Periapical Pathosis					2						2
Pulpal Reaction to caries, Restorative Material & Treatment					1						1
SUMMER VACATIONS 15TH JUNE- 14TH JULY											
Diagnosis & Treatment Planning						2					2
Endo-Perio Interrelationship						1					1
Endodontic Microbiology						1					1
Pain Control in Endodontics						1					1
CLASS ASSESSMENT 3											
Pulp Space Anatomy							1				1
Endodontic Access & Length Determination							2				2
INDEPENDENCE DAY											
Cleaning & Shaping							2				2
Obturation							3				3
CLASS ASSESSMENT 4											
BLOCK II EXAM 4TH SEP-15TH SEP											
Restoration of Endodontically Treated Teeth								1			1
Non-Surgical Retreatment								2			2
Evaluation of endodontics outcomes								1			1
Endodontic Surgery								1	1		2
Resorption									1		1
Dento-alveolar Trauma									3		3
Endodontic Emergencies & flare-ups									1		1
Non-Odontogenic Toothache									1		1

Management of medically compromised patients									1		1
CLASS ASSESSMENT 5											
Partial coverage crowns									1	1	2
Veneers										2	2
Inlays, onlays										2	2
Tooth Discoloration & Additional Esthetic Dental Procedure										1	1
BLOCK III EXAM 20TH NOV-1ST DEC											
Total lectures/ block	4	6	9	7	3	6	9	5	10	6	65

Orthodontics Final Year Lecture Schedule 2028

Total academic year duration: 36 weeks

Subthemes/ Lecture topics	Block I				Block II			Block III			
	Feb	March	April	May	June	July	August	Sep	Oct	Nov	Total lect/yr
Introduction to Orthodontics	1	1									
Diagnosis	1	3									
EID-UL-FITAR 1-3RD MARCH											
Introduction to Malocclusion/Classification		2	3								
Class I malocclusion (Vertical- Deep Bite)		2									
CLASS TEST 10th MARCH											
SPORTS WEEK 27TH MARCH – 1ST APRIL											
Class I malocclusion(Crowding)			1								
Class I malocclusion (Canine Impaction)			1								
Class I malocclusion(Bimaxillary Proclination/ Extraction in Orthodontics)			1								
Class I malocclusion (Open Bite – Vertical Ceph analysis)			1								
Class I malocclusion (Midline diastema/ Spacing Supernumeraries)			1	1							
CLASS TEST 14th APRIL											
LABOUR DAY 1st MAY											
Class I malocclusion (Cross Bite – Transeverse , PA Ceph. Facial Asymmetry)				2							
EID UL AZHA 7th MAY- 9th MAY											

Development of Occlusion				2	1						
Growth and Development (Features. Primary Dentition)				2	June 2	July 4	AUG 1	SEP	OCT	NOV	
BLOCK EXAM 22nd MAY - 2nd JUNE											
ASHURA 5th – 6th JUNE											
SUMMER VACATIONS 15th JUNE- 14th JULY											
Etiology of malocclusion							6	1			
Introduction to Functional, Tourcher's appliance(Increasing clinical severity) , Appliances (Class II) PowerPoint ppt students							2	1			
Introduction to Orthopaedic Appliances (Class II)								2			
Class III malocclusion							1				
Space Management									3		
CLASS TEST 11th AUGUST											
BLOCK EXAM 4th - 15th SEPTEMBER											
Biomechanics									4	5	
Removable Appliances/ Fixed Appliances (Indications, types, History, SWA, banding, Bonding)								Sep	Oct 2	Nov 3	
CLASS TEST 13th OCTOBER											
CLAP										2	

Surgical Ortho										3	
Retention & Relapse										2	
Adult Orthodontics										3	

Subthemes/ Lecture topics	Block I			Block II			Block III			
	March	April	May	June	July	August	Sep	Oct	Nov	Total lect/yr
EID UL FITAR 1-3rd MARCH										
Introduction to Pediatric dentistry, patient assessment, radiographic interpretation, and treatment planning	1									1
Dental caries	1									1
SPRING VACATION 20th – 24th MARCH										
Restorative dentistry for primary teeth	1									1
Modification of cavity preparation		1								1
Restorative materials in paediatrics		1								1
Pits and fissure sealant		1								1
Prenatal counselling, management of child behaviour		1								1
CLASS ASSESSMENT 1										
1st MAY LABOUR DAY										
Management of anxiety and pain			1							1
EID UL AZHA 7th – 9th MAY										
Medical conditions specific to children			1							1
Periodontal diseases in			1							1

children,										
Floride			1							1
CLASS ASSESSMENT 2										
Pulp capping,pulp therapy for primary teeth				1						1
BLOCK EXAM 24th MAY -5th JUNE										
Stainless steel crown				1						1
Trauma and injury to primary teeth				1						1
Endodontic management of immature root apex				1						1
Hereditary disorders and developmental anomalies				1						1
CLASS ASSESSMENT 3										
Long term dental care in children					1					1
Management of complications in children					1					1
Oral surgery and pathology in pediatric patients					1					1
Peado ortho interface					1					1
Total lectures/ block	4	4	4	4	4					20

Annexure- C

RAHBAR COLLEGE OF DENTISTRY

TIMETABLE FOR FINAL YEAR SMALL GROUP DISCUSSION (SGD)

SGD Room Number 4

DAY/DATE	10:00-11:00am	01:00-02:00pm	02:00-03:00pm
MONDAY		OMFS	Operative Dentistry
TUESDAY	Pediatric Dentistry		
WEDNESDAY		Orthodontics	Prosthodontics

Head of Prosthodontics Department& Convenor Final year BDS
Prof. Dr Hina Zafar Raja

CC:

HOD Orthodontics Department
Prof. Dr Farhat Ameen

Head of Operative dentistry Department
Prof. Dr Muhammad Nasir Saleem

HOD Oral and Maxillofacial Department

HOD Pediatric Dentistry Department
Prof. Dr Omer Yousaf

DDE

Rahbar College of Dentistry

Research Methodology Teaching Schedule For BDS

RAHBAR COLLEGE
OF DENTISTRY

DIRECTOR RESEARCH & DEVELOPMENT
PROF. DR. HINA ZAFAR RAJA
RAHBAR COLLEGE OF DENTISTRY

No. 38/RCoD/R&D/ 07 /2024 Dated:11th November, 2024
To: Principal Rahbar College of Dentistry, Lahore
Info: All HODs

Research Methodology Teaching Schedule for BDS

S. No.	Topics	Learning Objectives	Facilitator	Level of Students	Instructional Strategy	
1	Introduction to Research Methodology	• Discuss the importance of research in dentistry • Describe the components of research paper	Prof. Dr. Hina Zafar Raja Dr. Fahad Mehtab Dogar	1st Year	Interactive Lecture SGD	
2	Literature Review	• Perform Literature Search • Perform Review of Literature	Dr. Maira Mubashar Dr. Shaher Bano	1st Year	SGD	
3	Ethical Considerations in Research	• Comprehend the importance of informed consent and confidentiality in research. • Describe the Ethical approval process	Dr. Muhammad Saad Ullah Dr. Hajra Talat	1st Year	Interactive Lecture	
4	Types of Research	• Describe types of research • Compare Descriptive and Experimental studies	Dr. Ehsan Rathore Dr. Hira Anjum	1st Year	Interactive Lecture	
5	Study Designs	• Describe Cross-sectional, Longitudinal and Case-Control studies. • Describe Randomized Controlled Trials (RCTs)	Dr. Bushra Mazhar Dr. Maira Mubashar	1st Year	Interactive Lecture/ SGD	Synopsis Writing
6	Formulating Hypotheses	• Develop clear, measurable research questions/ objectives • Develop null and alternative hypotheses	Prof. Dr. Hina Zafar Raja Dr. Fahad Mehtab Dogar	1st Year	Interactive Lecture	
7	Inclusion & Exclusion Criteria	• Establish selection criteria of a research paper	Dr. Shaher Bano	1st Year	Interactive Lecture	
8	Sampling Techniques	• Describe the importance of sampling methods. • Determination of Sample size and its importance.	Dr. Muhammad Saad Ullah Dr. Hajra Talat	1st Year	Interactive Lecture	
9	Reference Manager	• Utilize End-Note referencing software	Dr. Ehsan Rathore	1st Year	Interactive Lecture &	

					Workshop	
10	Plagiarism Management	• HEC Policy for plagiarism • Interpret TURNITIN reports	Dr. Hira Anjum Dr. Bushra Mazhar	1st Year	Interactive Lecture	
11	Research Instrument Development Process	• Develop a research instrument • Assess the reliability and validity of data collection tools (data process, scope, specificity, anonymity)	Prof. Dr. Hina Zaafar Raja Dr. Fahad Mehtab Dogar	2nd Year	Assignments	Research Project
12	Statistical Analysis	• Describe basic concepts of Biostatistics • Utilize the basic tools of SPSS software for data analysis (SPSS) • Perform the basic statistical tests (Descriptive, Experimental; Chi-square & ANOVA)	Dr. Muhammad Saad Ullah Dr. Maira Mubashar Dr. Shaher Bano	2nd Year	Hands on Workshop	
13	Results	• Deduct the results of descriptive study designs		3rd Year	SGD/Assignments	
14	Discussion	• Interpret results and write discussion of a research project		3rd Year	SGD Assignments	
15	Types of Publication	• Describe the hierarchy of scientific publications		3rd Year	SGD/Assignments	
16	Manuscript	• Writing of well-structured manuscript and reviewing & editing it		4th Year	SGD/Assignments	
17	Article submission & Publication	• Comprehend the article submission & publication process • Identify target journals		4rth year	SGD/Assignments	

Prof. Dr. Hina Zafar Raja
Director Research & Development Cell
Rahbar College of Dentistry